

THE
**WATER
PROJECT**
JAMAICA

HOMEOWNERS' GUIDE TO WATER USE EFFICIENCY



HOMEOWNERS' GUIDE TO WATER USE EFFICIENCY

EFFICIENT. RESILIENT. SECURE

Table of Contents

Introduction	3
The Water Project Jamaica	3
Climate is Water	4
Water Efficiency at Home	5
Local Suppliers of Water Efficient Solutions	7
Water Resources and Jamaica	8
Definitions	10
Volume Conversion	10

Graphic on cover sourced from www.nocoenergystarhomes.org



Introduction

This guide was created under The Water Project Jamaica and provides useful information for homeowners to manage their water use as well as reduce their water bill and negative impact on the environment. The guide also seeks to increase knowledge about climate change and encourage homeowners to reflect on their personal role regarding climate adaptation.



The Water Project Jamaica

The four-year project, “*Financing Water Adaptation in Jamaica’s New Urban Housing Sector*” (also referred to as The Water Project Jamaica), seeks to enhance Jamaica’s climate resilience through the use of water efficient technology. **The specific objectives include facilitating the uptake of water**

adaptation measures; increasing climate resilient housing; and enhancing Jamaica’s water security. The project components include a **Loan Facility** for housing developers and homeowners and a **Technical Cooperation component**, which involves developing the business and financial cases for water adaptation, capacity building, supporting entrepreneurship and public awareness.

The project is part of the **Pilot Program for Climate Resilience (PPCR)**, which is a financing mechanism of the Climate Investment Funds (CIF) executed through the Inter-American Development Bank (IDB). The PPCR helps developing countries integrate climate resilience into development planning and supports a comprehensive approach to long-term strategic investments and activities at the national level and across targeted sectors. You can learn more about the PPCR projects in Jamaica at www.ppcrja.org.jm.

Funding for The Water Project Jamaica is also provided through the IDB’s Multilateral Investment Fund (MIF) and the implementing partners are the **JN Bank and JN Foundation**. For more information on the project, visit www.waterprojectja.com.



Climate is Water!

Jamaica is particularly vulnerable to the hazards associated with climate change. Climatic events such as periods of extreme rainfall, hurricanes, heat waves and droughts will result in problems for water resources management. Dry spells negatively impact water supply systems while hurricanes and related flooding cause pollution of resources and severe damage to infrastructure, including energy facilities, which play a critical role in the supply of water. Sea level rise is also a major concern as this will trigger saline intrusion of groundwater resources and a reduction in freshwater available for potable supply.

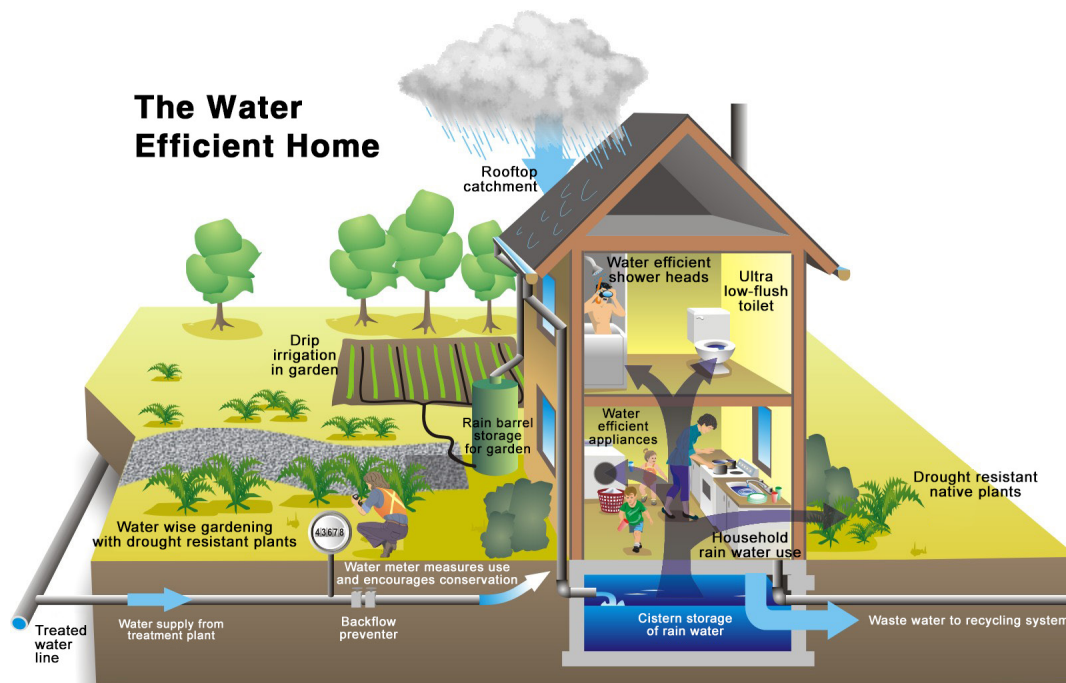
In order to adapt to the impending water crisis, we must practise water use efficiency and conservation. We can do this by investing in the following technologies:

- High efficiency toilets;
- High efficiency faucets and aerators;
- High efficiency showerheads;
- Washing machines with the Energy Star seal;
- Dishwashers with the Energy Star seal;
- Rooftop rainwater harvesting systems;
- Greywater recycling and re-use systems; and
- Outdoor water saving technologies (e.g., drip irrigation, irrigation controllers and auto shut-off nozzles).



We'll help you find a way!





Adapted from www.crd.bc.ca

Water Efficiency at Home

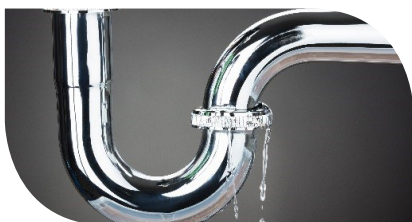
The primary reference for this section is the homeowners' guide³ developed by Instant Save Conservation.

Benefits of Water Efficiency

- Lower costs, greater savings.
- Greater control over water consumption, conservation and use.
- More affordable and sustainable source of water during droughts and water lock-offs.

PLUMBING

- Inspect ALL piping, toilets and faucets for leaks.



- Learn how to read your meter to monitor your water use. Tip! Shut off water using equipment and monitor meter after 5 minutes, if dial or

digits are still moving, you may have a leak! According to the NWC, approximately **10% of water used at home is wasted because of leaks. A leak of one drop per second, wastes 2,400 gallons per year!**

- Know where your master water shut-off valve is located. With large properties, have your plumber install lock-off valves at various sections.
- Replace inefficient fixtures with water saving fixtures that are either Water Sense Labelled or use 20-25% less water than standard units. According to the NWC, **water consumption at home can be reduced by as much as 30% by using proper water saving devices and good conservation practices.**
- Install Sediment filters, which are essential in reducing the wear and tear on the valves and seals of your plumbing equipment and avoids costly leaks and repairs.
- Install a water softener or lime scale inhibitor, which will prevent calcium and magnesium build-up in your plumbing system reducing leaks and maintenance costs while giving your fixtures a longer life.

³Instant Save Conservation (no date) Homeowner's Guide to Water Management. Instant Save Conservation, Kingston, Jamaica.

BATHROOM

About 70-80% of water used in the average household is from the bathroom.



- Look out for efficiency rated and labelled water fixtures (e.g., Water Sense label) as guided by the flow rates stated below:
 - *Showerheads should use less than or equal to 2.0 Gallons per Minute (GPM)*
 - *Toilets should use less than or equal to 1.28 Gallons per Flush (GPF)*
 - *Faucets should shut-off instantly when not engaged or install aerators using less than or equal to 1.5 GPM*
- Check all toilets for leaks. To do this, use a colour dye in your toilet tank. If the colour is visible in the bowl, you have a leak and should make the necessary repairs.



KITCHEN

- Install water efficient faucets or aerators, which use less than or equal to 1.5 GPM.
- Replace old dishwashers with an Energy Star appliance and save, on average, 3,870 gallons of water over its lifetime.

LAUNDRY

- Replace old washers with an Energy Star appliance that uses between 18 and 25 gallons per load. Older washers use up to 40 gallons per load.
- Reroute greywater from the washing machine to water the garden by installing the necessary plumbing fixtures.



OUTDOOR

- Install gutters on roof and storage tanks (or construct a cistern) to capture rainwater runoff. Water storage should have the capacity for 3 – 5 days of water supply or at least 700 gallons or 3,150 litres.



Connect your rooftop rainwater harvesting system to the plumbing for toilets and washing machine (dual reticulation).



- Install drip technology to irrigate the garden.
- When using a garden hose to water the lawn

be sure to add a hose nozzle to reduce the flow and shut off when not needed or use auto shut-off nozzles.



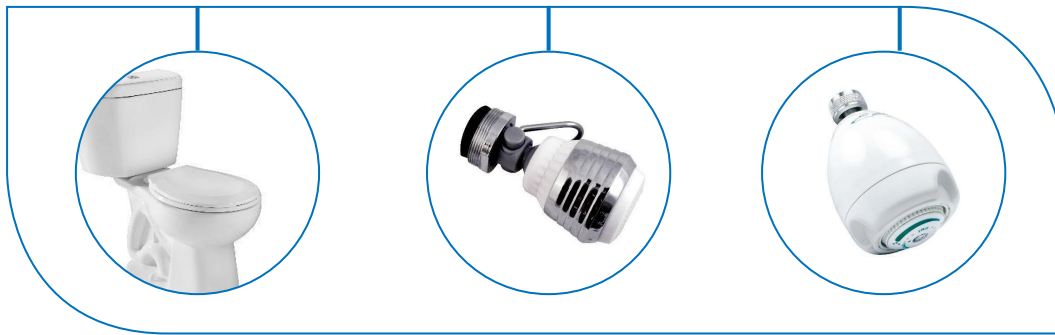
- For outdoor pools, be sure to cover them to prevent evaporation when not in use. Clean your swimming pool filter often to prevent having to change the water.
- Plan your landscape and gardens to minimize the need for water.



Water Sense Stealth Toilet

Faucet Aerator

High Efficiency Showerhead



Source: Instant Save Conservation



Local Suppliers of Water Efficient Solutions

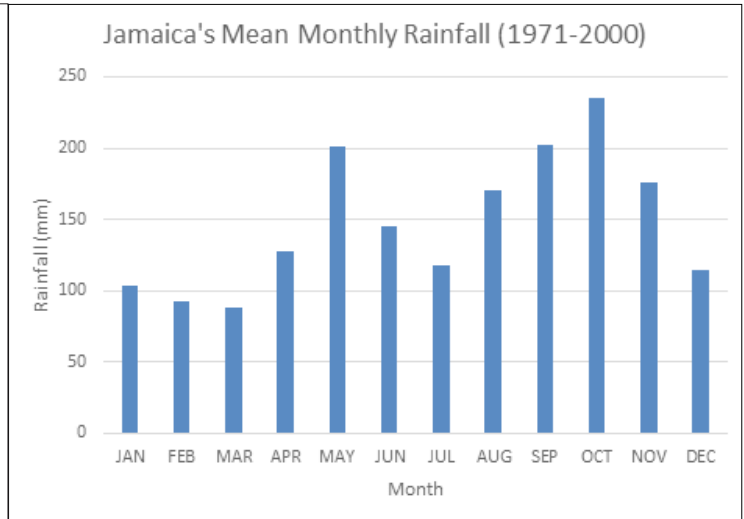
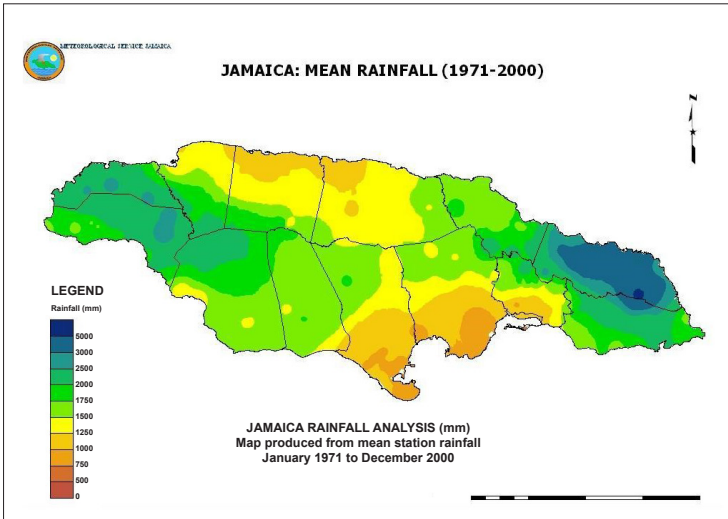
Organization	Technology	Phone #	Website
Instant Save Conservation, 26 Haining Road, Kingston 5	High efficiency faucets, showerheads and toilets	(876)-630-3360 (876)-754-9030	www.instantsaveja.com
Unique Living, 30 Dunrobin Ave, Kingston 10	High efficiency faucets, showerheads and toilets	(876)-755-3661	
Jamaica Plumbing Supplies Co. Limited, 56 Molynes Road, Kingston 10	High efficiency toilets	(876)-937-3116	www.jamaicaplumbingja.com
Active Home Centre, 84 Constant Spring Road, Kingston 10	Energy Star dishwashers and high efficiency toilets	(876)-755-0027-8	www.activehomecentre.com
Scientific Research Council, Hope Gardens, Kingston 6	Greywater recycling	(876)-927-1771-4	www.src.gov.jm/wastewater-management
Isratech Jamaica Ltd, Unit 17, Trade Centre, 30-32 Red Hills Road, Kingston 10	Rainwater harvesting, greywater recycling and drip irrigation	(876)-754-5443-4	www.isratech.com
Alfrasure Structures and Roofing Limited, 12A Slipe Road, Kingston	Rainwater harvesting	(876)-929-5894	www.alfrasure.com
Noel Whyte and Associates, Unit 5, Seymour Park, 2 Seymour Avenue, Kingston 6	Rainwater harvesting and greywater recycling	(876)-927-6107 (876)-927-8892	www.nowhyteassociates.com
Champion Industrial Equipment & Supplies Limited, 1 Gretna Green Avenue, Kingston 11	Rainwater harvesting and greywater recycling	(876)-923-0330 (876)-923-6440	





Water Resources and Jamaica

Jamaica is known as the **“Land of Wood and Water”** with as much as 3,874 cubic metres of freshwater per person per year¹. Jamaica gets its supply from the water cycle, which is the continuous movement of liquid, solid and gaseous forms of water. Rainfall from the water cycle drains into rivers and percolates underground into our aquifers.



Data Source: Meteorological Service of Jamaica

The National Water Commission (NWC) is the main utility company, which provides potable water for domestic and commercial uses. The NWC sources water from wells, rivers and springs. Pollution of these freshwater sources reduces the volume, which can be supplied to the various demand sectors.



The basic water requirement for human needs (drinking, sanitation, bathing, cooking and kitchen use) ranges from 20 – 50 litres per person per day depending on climatic conditions, activity levels and societal preferences². According to research commissioned by the NWC, water consumption per person per day for Jamaica is on average 172 litres (37.7 imperial gallons) across all income groups. The majority of this consumption occurs in the bathroom.

¹AQUASTAT Database of the Food and Agriculture Organization of the United Nations (FAO).

²Gleick, Peter H. 1996. Basic Water Requirements for Human Activities: Meeting Basic Needs. *Water International* 21:83-92

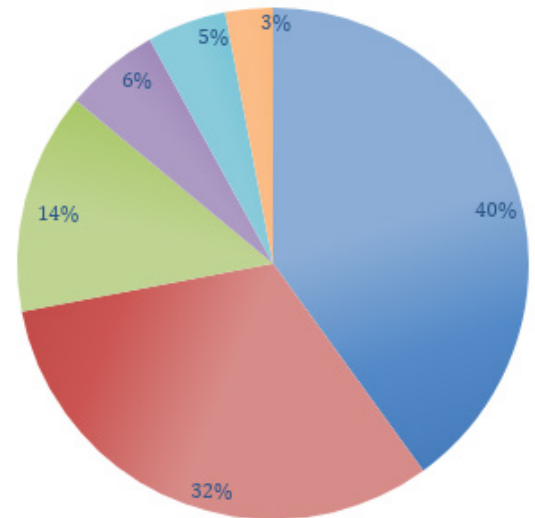


Potable Water Consumption per Housing Classification

Income / Class of Housing	Daily Consumption Per Capita	
	Litres	Imperial Gallons
Low	100 - 125	22 - 27.5
Low / Medium	175	38.5
Medium	220	48.5
Medium / High	250	55.0
High	300	66.0

Data Source: Kingston Water and Sanitation Project

Water Use At Home



Data Source: www.nwcjamaica.com

Water Facts

- The mean annual rainfall for Jamaica is 1980mm [1] with up to 5000 mm (or more) per year falling in the northeast of the island, for example, in the parish of Portland. The south coast of the island, known as the rain shadow, experiences 1000 mm (or less) of rainfall per year [2].
- Jamaica's annual cycle of rainfall has two wet seasons - between April and June and later in the year between September and November [2].
- Freshwater supply for Jamaica is made up of 84% by volume from groundwater (stored in aquifers) and 16% from surface water (rivers and springs) [1].
- As much as 10% of Jamaica's freshwater resources is polluted [1].

1. Water Resources Authority. 2011. *Water Resources of Jamaica: Fact Book*. Water Resources Authority, Kingston, Jamaica.

2. Climate Studies Group, Mona (CSGM), 2017: *State of the Jamaican Climate 2015: Information for Resilience Building (Full Report)*. Produced for the Planning Institute of Jamaica (PIOJ), Kingston Jamaica.



Definitions

- **Aquifer:**
an underground layer of rock, gravel or sand capable of storing and transporting water.
- **Climate Adaptation:**
the process of adjustment to minimize harm or take advantage of opportunities related to climate change e.g., installing water efficient devices or harvesting rainfall.
- **Climate Change:**
any variation in atmospheric conditions over time as a result of natural variability or human activity.
- **Climate Resilience:**
the ability to live and prosper in changing climatic conditions.
- **Drip Technology:**
Technology that allows water to drip slowly to the roots of plants, either from above the soil surface or buried below the surface.
- **Dual reticulation:**
supplied by or have access to both potable water and harvested rainwater (or recycled water) via two completely separate piping systems.
- **Flow rate:**
the volume of fluid which passes per unit time e.g., Gallons Per Minute (GPM) or Gallons Per Flush (GPF).
- **Greywater:**
relatively clean wastewater from baths, sinks, washing machines, and other kitchen appliances which can be recycled.
- **High Efficiency:**
refers to products that save water without compromising performance or satisfaction to user.
- **Percolates:**
filter gradually through a porous surface or substance.
- **Water Conservation:**
reduction in water use through changes in human behaviour.
- **Water Use Efficiency:**
the achievement of a task or process with a minimal volume of water through the use of technology e.g., using water efficient products.
- **Xeriscape:**
a garden that requires little or no irrigation.

Volume Conversion

1 cubic metre = 1000 litres = 220 imperial gallons = 264 US liquid gallons





For more information on this Homeowner's Guide, please contact:



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- ➔ Website: www.waterprojectja.com

Also follow the “Water Flow” on Social Media with our hashtags
[#JNWaterProject](#) and [#WaterAdaptJa](#)

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