ONE WATER BUILDINGS

IMPLEMENTATION CHECKLIST

A tool for maximizing water conservation in the built environment

WHAT IS ONE WATER?

One Water is a holistic approach to water management that recognizes that all water—whether it's rainwater, stormwater, greywater, wastewater, or drinking water—is a potential resource to help meet potable and non-potable water needs. While One Water can be applied at different scales, this document is specifically focused on One Water *buildings*.

A One Water building is designed to effectively utilize all water—potable* and non-potable (e.g., greywater, stormwater, and wastewater)—as an integrated resource. The One Water concept follows a "fit-for-purpose" approach, meaning water is treated or used based on its intended purpose. For example, a One Water building might use non-potable water (e.g., rainwater, air conditioning condensate) for flushing toilets or irrigation instead of using highly treated drinking water for those tasks. This approach maximizes efficiency, reduces strain on centralized infrastructure, and builds resilience against drought and water scarcity.

Why One Water Buildings are Important Now

- **Water Scarcity:** Drought-prone regions like Central Texas face increasing pressure on limited water supplies. When we are not in a drought, we are between droughts.
- **Increased Demand:** As cities grow and suburbs expand, additional water will be needed to meet the needs of this this growing population.
- **Climate Variability:** Extreme weather events such droughts and floods, longer dry spells, changing rainfall patterns, and rising temperatures make current water supplies less reliable.
- **Regulatory Shifts:** Agencies are beginning to encourage or mandate water reuse, conservation, and onsite management.
- **Economic Pressures:** Investments in new water supplies generally cost more than conserving and reusing existing supplies. One Water investments can delay or avoid the increased cost of bringing on new water supplies.

Core Principles of a One Water Building

- **Maximizing Water Efficiency:** Low-flow fixtures, smart irrigation, and leak detection.
- **Using Fit-for-Purpose Water:** Matching water quality to its use—e.g., using treated greywater rather than potable water for flushing toilets or irrigation.
- **Capturing Local Sources:** Harvesting rainwater and air conditioning condensate.
- **Reusing Water Onsite:** Treating greywater and blackwater for reuse when feasible.
- **Returning Water Thoughtfully:** Managing stormwater to reduce runoff and recharge aquifers.

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* **Potable water** *is water that is safe to drink and use for food preparation, meeting health standards for human consumption.* **Non-potable water** *is not safe for drinking but can be used for other purposes such as irrigation, flushing toilets, or industrial processes.*

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HOW IT WORKS IN PRACTICE

Water Sources in a One Water Building

SOURCE	USE POTENTIAL
Public/Potable Water	Drinking, cooking, washing dishes, personal hygiene; best for potable uses or those requiring highest treatment standards for water
Rainwater	Irrigation, cooling, toilet flushing, fire suppression. Rainwater can also be treated to potable standards, especially in single-family homes
Condensate	Cooling towers, air conditioner makeup supply, irrigation
Stormwater	Landscaping, infiltration, recharge
Greywater	Toilet flushing, irrigation
Blackwater	Reuse for non-potable purposes after advanced treatment

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Technologies Often Included in One Water Buildings:

- Dual plumbing systems for non-potable water reuse
- Onsite water capture, storage, and treatment
- Rainwater harvesting tanks
- Green roofs, pervious pavers, curb cuts, and bioswales for stormwater management
- Smart water meters and leak detectors
- High-efficiency fixtures and appliances
- Subsurface drip irrigation to reduce evapotranspiration and potential for human contact

Benefits of a One Water Building:

- Reduces long-term water bills and infrastructure costs, and adds market value to the building
- Improves drought resilience and protects landscape investments during utility mandated curtailments
- Reduces flood impacts and mitigates stormwater runoff and pollution
- Supports green building certifications (LEED, SITES, WELL, Living Building Challenge)
- Generates community support by demonstrating environmental leadership and innovation
- Better stewardship of limited water resources for current residents and future generations

Real-World Examples:

- Travis County connected purple pipe/reuse water to four downtown buildings for the purpose of supplying their air conditioning makeup water and permanently eliminating the demand for 10 million gallons of treated drinking water annually. Engineers estimate the payback for each of the building retrofits is less than three years, and after that, the four buildings combined will save at least $200,000/year in water bills.
- The Credit Human Headquarters in San Antonio has a water capture and reuse system with the capacity to hold 140,000 gallons, including 80% of rainwater collected on site and cooling tower condensate. Captured water is used to flush all toilets, provide irrigation, and supply makeup water for the cooling towers, resulting in an estimated savings of 4-million gallons of water per year.
- The Toyota Headquarters in Plano collects rainwater in a 400,000-gallon cistern storage system. They use this rainwater for irrigation and toilet flushing. Toyota anticipates saving 12-million gallons of potable water annually.

IMPLEMENTATION CHECKLIST FOR ONE WATER BUILDINGS

While not all projects are able to implement every One Water opportunity, the following considerations are intended to inform the building design process when evaluating new construction or major renovation projects.

ITEM	YES	NO
1. Onsite Water Capture and Reuse Is plumbing designed to separate potable and non-potable systems? Are non-potable uses (toilet flushing, irrigation, cooling) supplied by non-potable sources (e.g., rainwater, greywater, AC condensate)?	☐	☐
Has rainwater harvesting been included in the design? (e.g., for Irrigation)	☐	☐
Is AC condensate captured and reused? (e.g., for AC makeup water)	☐	☐
Is greywater being captured and treated for reuse onsite? Greywater refers to relatively clean wastewater that comes from household activities (e.g., water from bathroom sinks, showers, and laundry discharge). It can be reused for non-potable purposes like landscape irrigation, toilet flushing, or even laundry with proper treatment.	☐	☐
Is blackwater being treated onsite or routed to a local reuse facility? Blackwater is wastewater that contains human waste, making it more contaminated and requiring more intensive treatment than greywater. It includes toilet water and often includes kitchen sink and dishwasher water due to grease.	☐	☐
Is the site connected to an external centralized reuse system (e.g., purple pipe systems)?	☐	☐
2. Water Efficiency & Smart Controls Are WaterSense fixtures used throughout?		
Is irrigation minimized and equipped with smart controls?	☐	☐
Is real-time water monitoring included (e.g., smart meters, leak detection)?	☐	☐
Does the landscape plan use native or drought-adapted plants to reduce outdoor watering needs?	☐	☐
3. Environmental Integration Are green infrastructure features (e.g., bioswales, rain gardens, pervious pavers) included to manage stormwater and filter pollutants?	☐	☐
Is stormwater captured in a way that promotes infiltration or aquifer recharge? (Note: A bioswale might filter pollutants but not infiltrate much if it's lined or if the subsoil is clay.)	☐	☐
Do stormwater features enhance public spaces and provide added community value (e.g., aesthetics, cooling)?	☐	☐
Have you identified if nearby streams or wetlands exist? If yes, have you identified them and provided sufficient buffers to protect these resources?	☐	☐
4. Education and Maintenance Does the building educate users about different water source types? (e.g., labeling irrigation spots as rainwater or purple pipe water, purple toilet levers indicating non-potable water is used for toilet flushing)	☐	☐
Will design and installation teams provide an operations manual and maintenance schedule for incorporated One Water components?	☐	☐

Check your One Water building score on the following page.

SCORING GUIDANCE

12–16 Yes Answers:	Your building is well-aligned with One Water principles.
6–11 Yes Answers:	Strong progress; consider integrating more One Water features.
<5 Yes Answers:	Room for improvement; evaluate opportunities to improve local water capture, reuse, and environmental performance.

ONE WATER RESOURCES:

One Water Guidebook
Hill Country Alliance & National Wildlife Federation

This guidebook connects Hill Country communities facing growth and increased demands for water with water professionals experienced with One Water strategies, planning, implementation, design and construction.

Net Zero Water Toolkit
Texas Water Trade

Net Zero Water refers to a design mindset that prioritizes the use of alternative water resources for a project's resilience and reliability. The Net Zero Water Toolkit aims to help a development provide for its own water needs through the capture, storage, and treatment of compatible water sources found onsite.

This document was developed by the Hill Country Alliance. For questions about One Water buildings in the Hill Country, please contact: marisa@hillcountryalliance.org

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