

Nexus Water

“Onsite Water Reuse” for the Home

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Mega Trend: Use Water More Efficiently



Recycle & Reuse On-Site

Store More

Restrict Use

Remove Turf

More native plants

Stop Growth



Better Fixtures

Change behavior

Fix Leaks

Recycle Wastewater

New Water -- Desal

Why “Onsite Water Reuse” Now?



1. Best way to drastically cut water use in the home
2. Onsite Water Reuse directly engages local citizens in solving the water challenge
3. Water Use is a local political issue.... Not just a Water Supply issue.
4. “On-site Water Reuse” policy is emerging. Local leadership can impact direction and speed of adoption. There will be leaders and followers.



What we will cover

1. State residential onsite water reuse policy
2. The different types of Alternate Water
3. The Nexus system – an example of automatic Home Water Recycling
4. What other jurisdictions are doing
5. Installation of Nexus system



A Short History of state policy

When	Policy	
Pre-2008	No clear policy.	Undocumented use, local policy
2010	“Alternative Water Sources” enter CPC, Chapter 16	Results from 2008 Lowenthal bill
2013	“Treated Greywater” enters Code	NSF350
2015	Drought Declaration calls for more On-site Water Reuse. Amended Landscape Ordinance	
2016	Building Code update looks at expanded use of Alt Water Sources	Impl. In 2017

What are Alt Water Sources?



Type of Water	Key Features
Recycled Water (Purple pipe)	<ul style="list-style-type: none">• Municipally supplied• Source is sewage at treatment plan• State regulated: Title 22• Expensive to provide to homes
Greywater, untreated	<ul style="list-style-type: none">• Can be used for some irrigation• Sub-surface irrigation only - NO veggies• NO storage
Greywater, treated	<ul style="list-style-type: none">• Must be NSF350 certified• Any irrigation + Toilet flushing• Storage OK
Rainwater	<ul style="list-style-type: none">• From rooftops only• If treated, then same as Treated Greywater
Stormwater	<ul style="list-style-type: none">• Rainwater that hits the ground - keep on site

HOME WATER RECYCLING

The face of a certified, treated, automatic solution

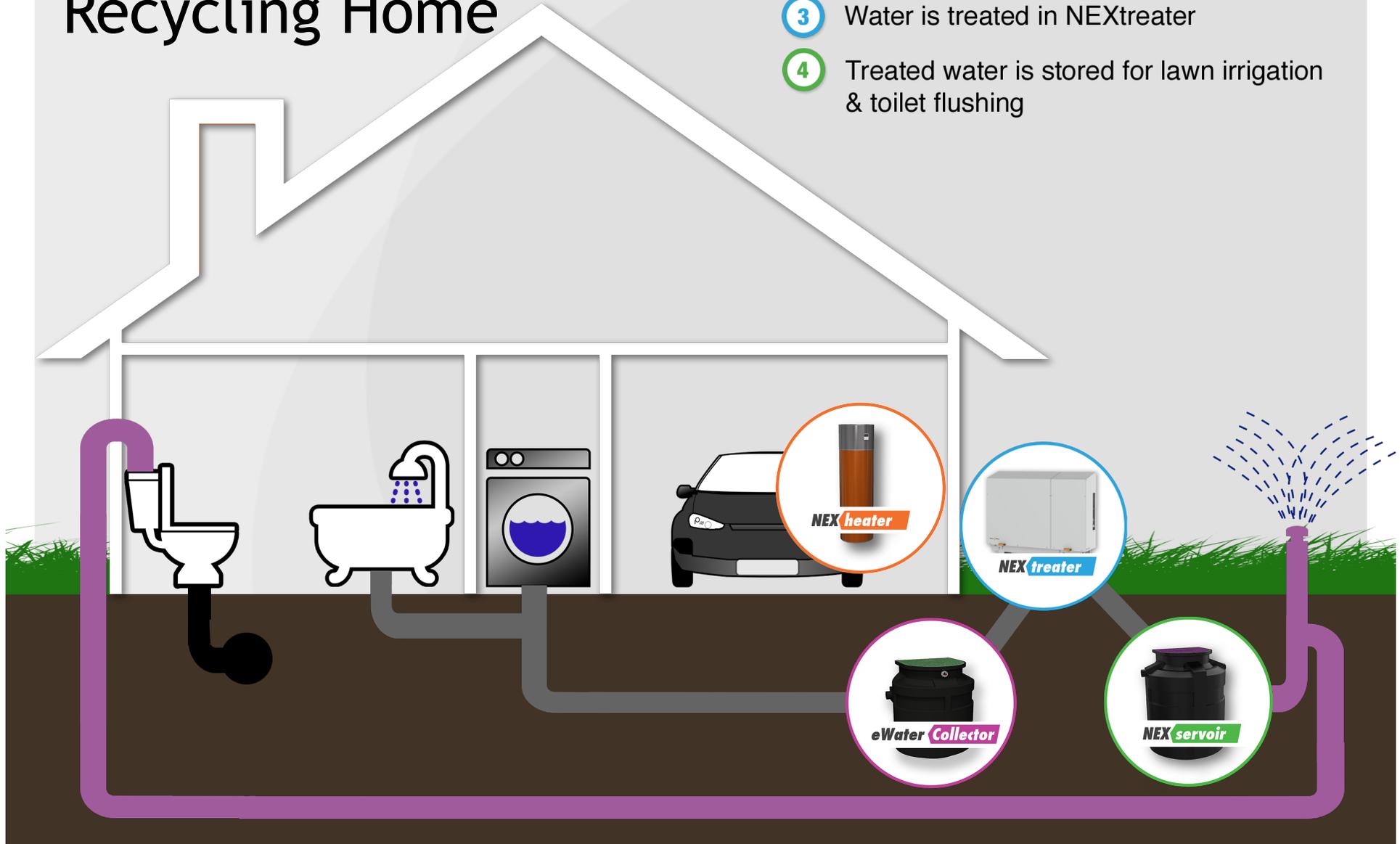


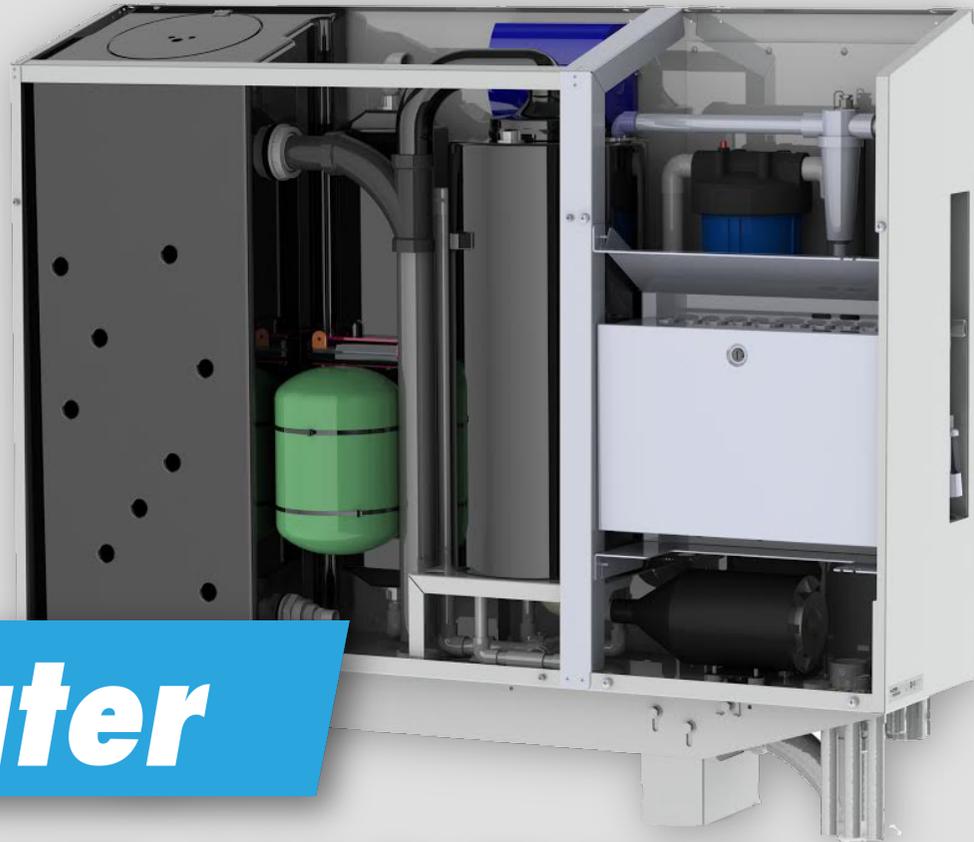
NEXtreater



The Water & Energy Recycling Home

- 1 Grey water is collected
- 2 Warmth is extracted and sent to NEXheater
- 3 Water is treated in NEXtreater
- 4 Treated water is stored for lawn irrigation & toilet flushing

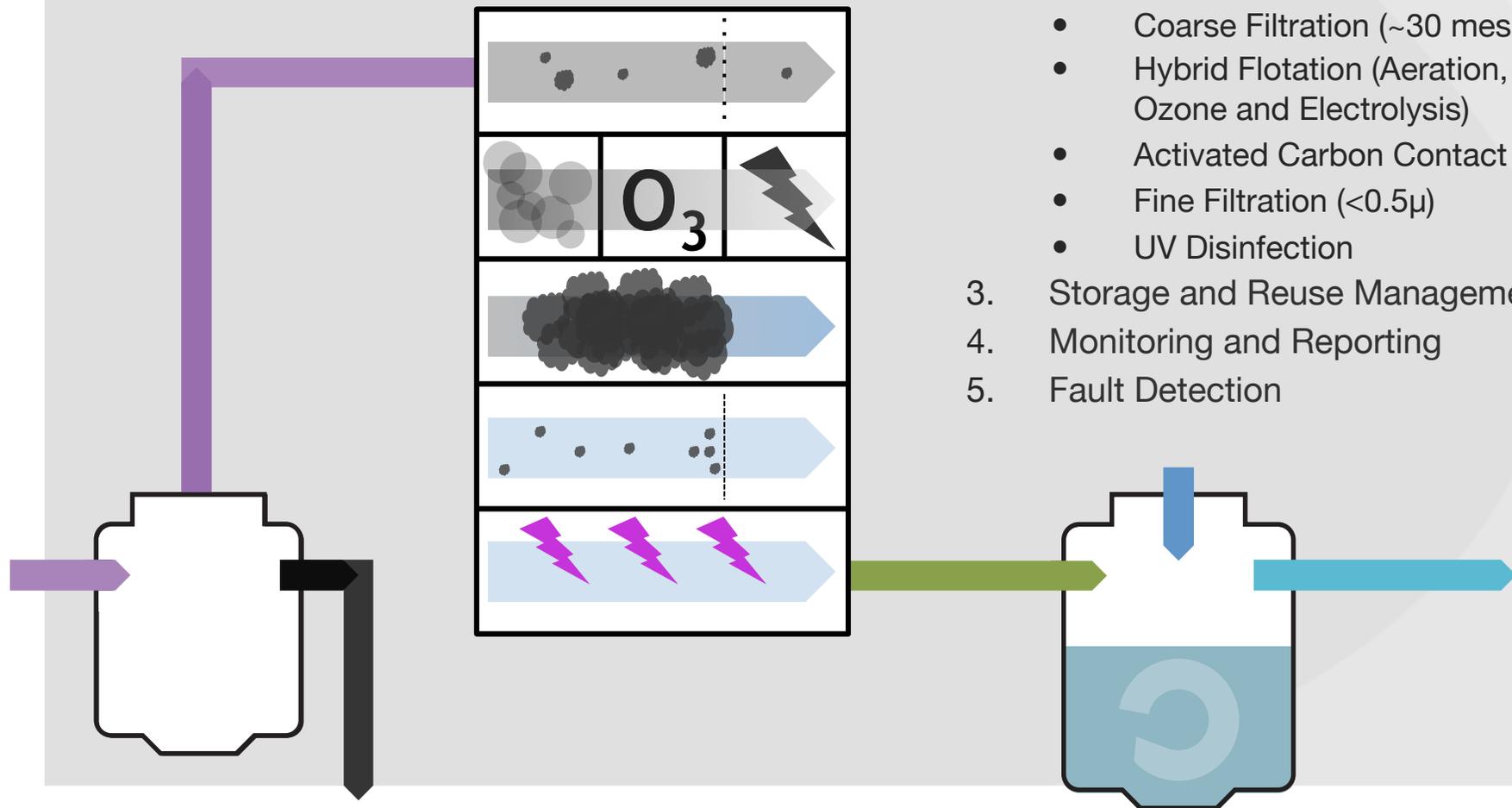




NEX *treater*

HOW IT WORKS

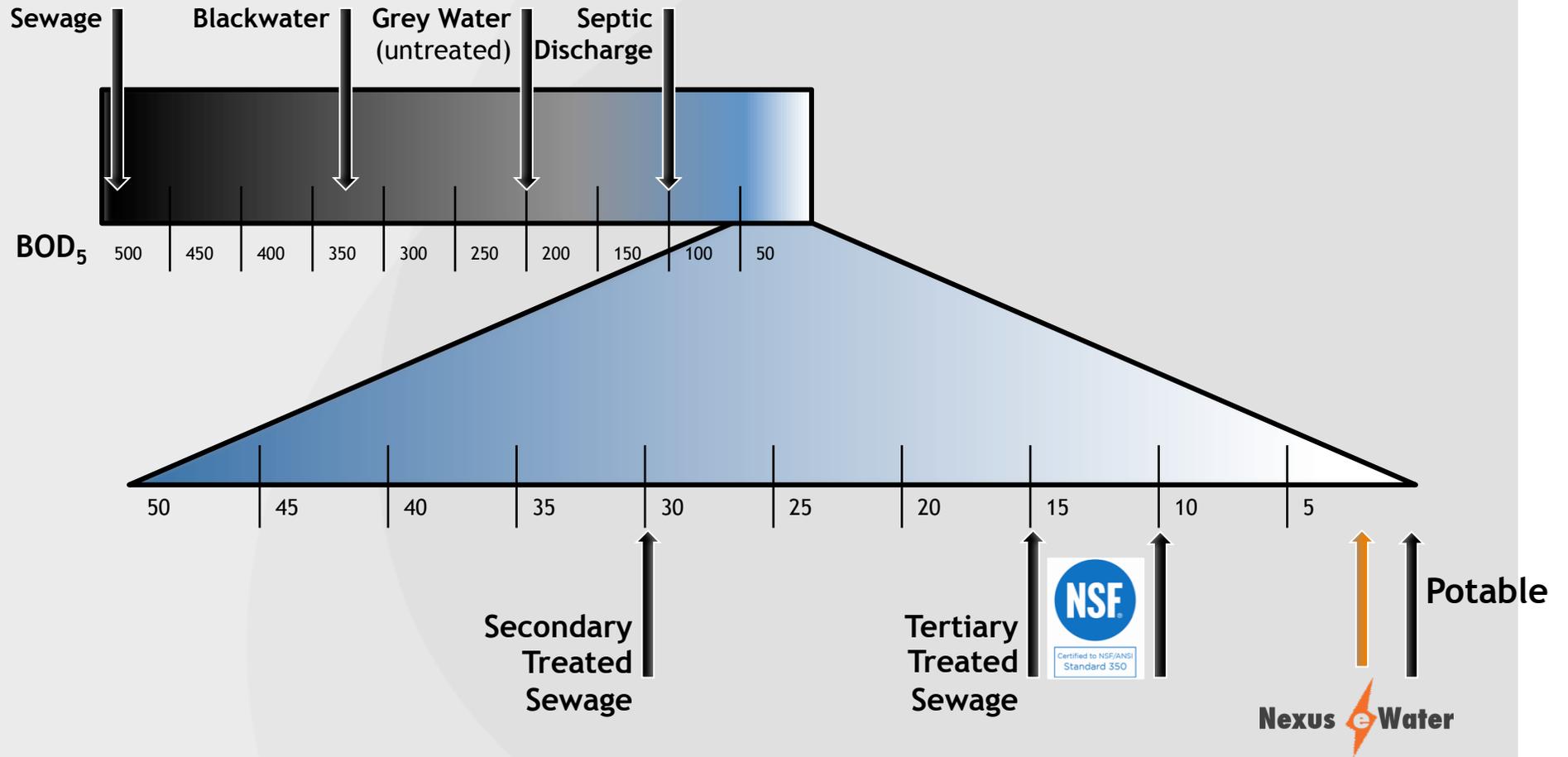
Treatment Process



1. Grey Water Collection
2. Batch Treatment Process
 - Coarse Filtration (~30 mesh)
 - Hybrid Flotation (Aeration, Ozone and Electrolysis)
 - Activated Carbon Contact
 - Fine Filtration (<math><0.5\mu</math>)
 - UV Disinfection
3. Storage and Reuse Management
4. Monitoring and Reporting
5. Fault Detection

How clean? Very clean!

Water Quality Spectrum: BOD





An Automatic System – So?

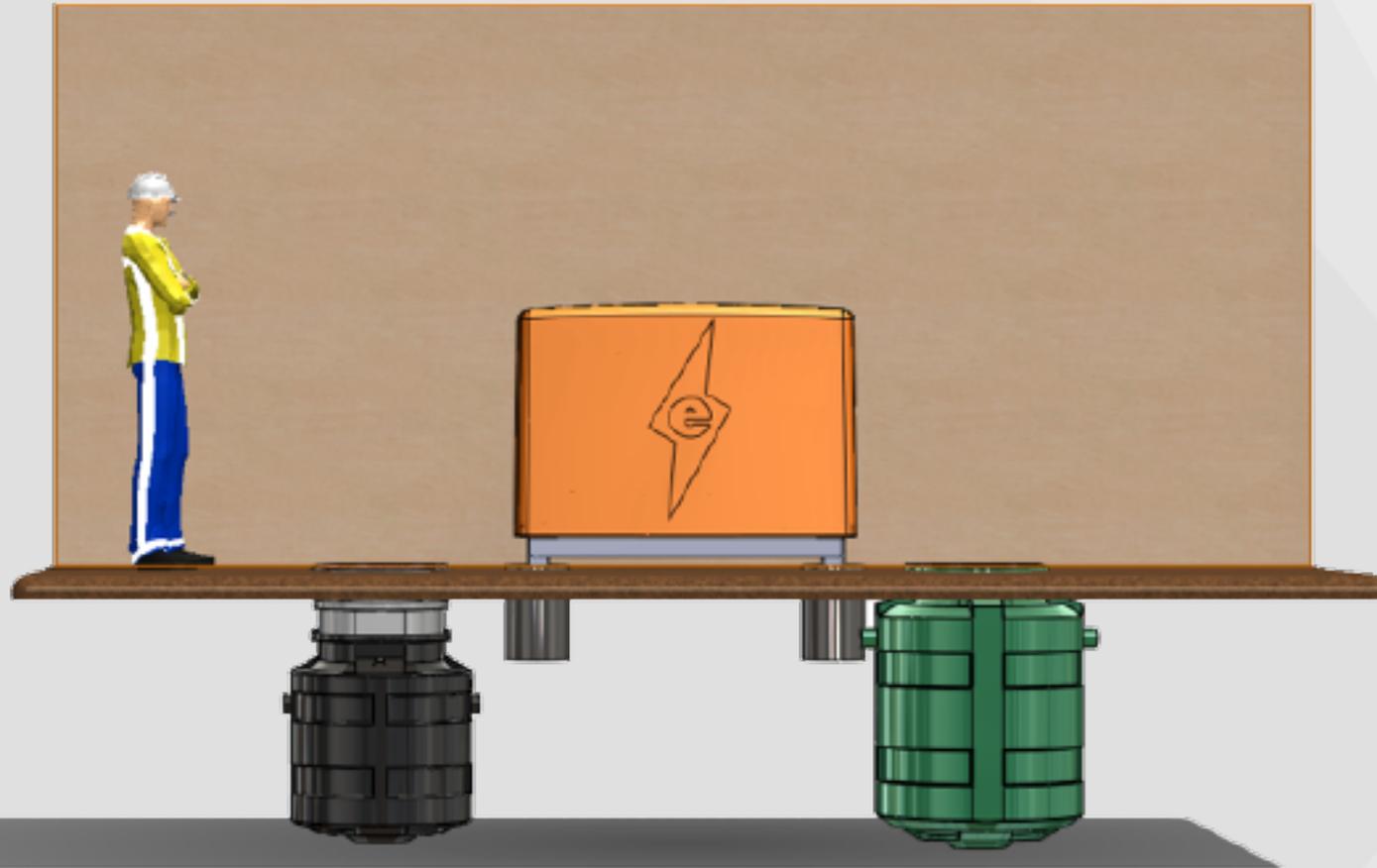
1. Treats and stores water until use
2. Connects to automated irrigation controllers
3. Works in background – no active operation by you, the Homeowner
4. Operates continuously – no diverters to operate
5. Alerts you when a filter needs to be changed
6. Works when you are on vacation

Emerging Local Policies



Jurisdiction/Agency	Policy
Marin Municipal Water District	Must implement “all practical” greywater reuse on new homes and deep remodels
San Francisco County	Requires district-wide on-site water reuse in most new commercial developments
City of Los Angeles	Draft Code to require on-site water reuse in new residential and commercial buildings
Los Angeles County	Published own Guide to on-site water reuse for both residential and commercial buildings
Santa Clara County	Multi-agency task force is exploring possible policies
River Islands Development (City of Lathrop)	To require Treated Greywater Reuse in all new homes.

Side View with Tanks



75 gallons Greywater

200 gallons fresh water

Dig Appropriately Deep Holes



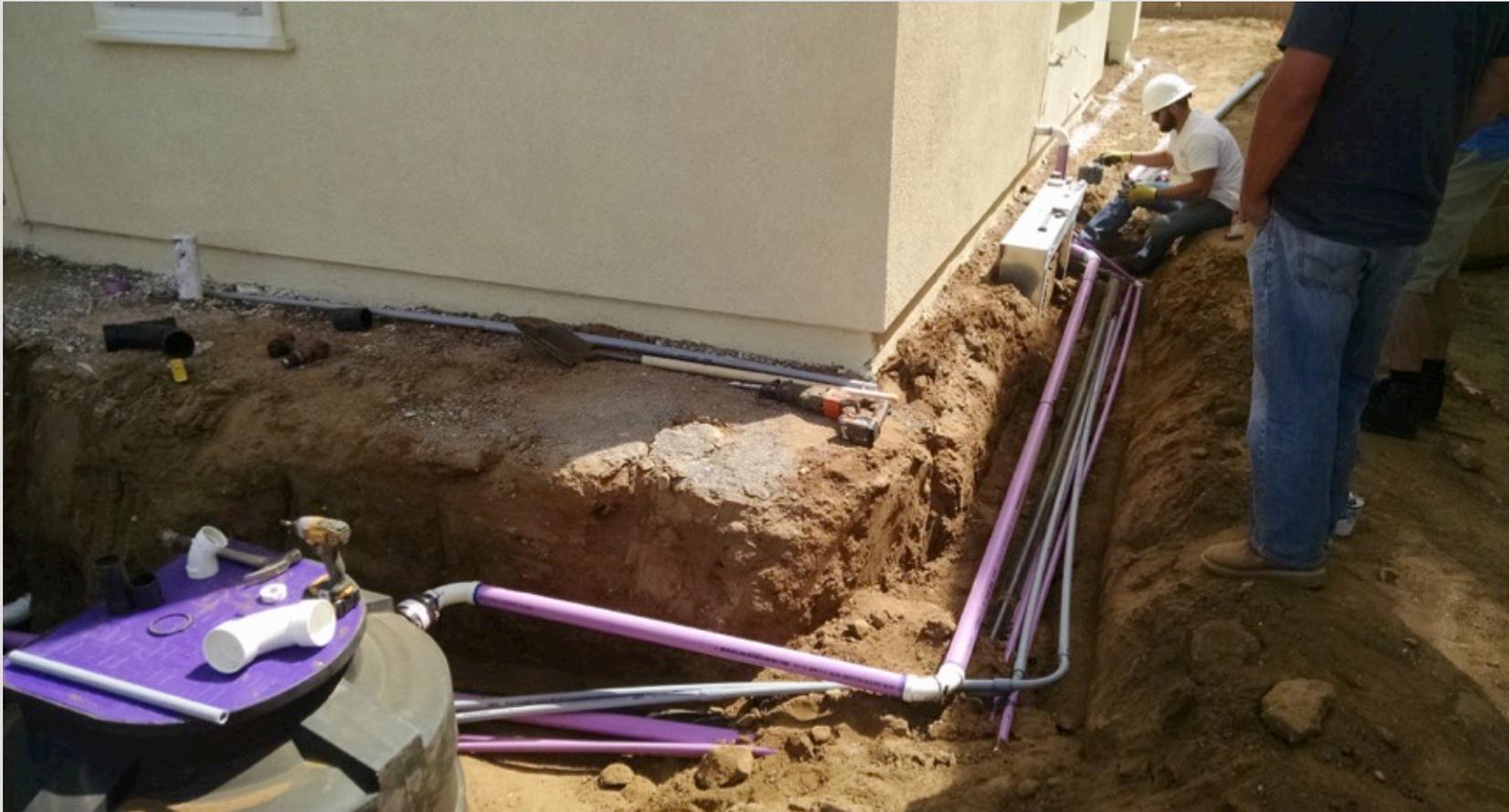
Connect Vent



Install Bench



Connect Plumbing to Bench



Voila! Your Greywater Access Port



Recycle-Ready



Tanks Backfilled



NEXtreater Installed



Data is available on mobile app





Installation Requirements

See: The Nexus Guide to the Recycle-Ready Home

1. Dual Plumb
2. Greywater and Black water must exit home in same location
3. Two tanks in ground
4. Pre-configured “greywater access port”
5. NEXtreater treatment appliance (above-ground)
6. 10 Amp electrical circuit
7. Nearby hose bib for top-up water
8. Connect treated water tank to (any) irrigation



Next steps?

- In your city, do you want future homes to be able to use Alternate Water Sources?
- Implement in Building Code?
- Incent or promote?
- Download our Guide to the Recycle Ready Home (see home page or ...):
<http://www.nexusewater.com/recycle-ready-home-design>
- Send me questions: bob@nexusewater.com