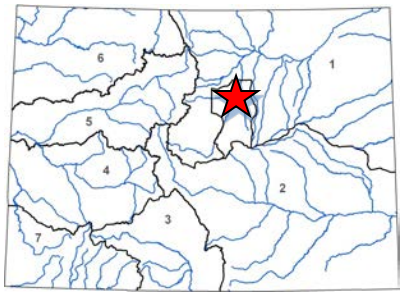
COLORADO
Colorado Water Conservation Board

Water Plan Grant Application

Sustainable Water Solution
Uponor-Phyn-Greyter
November 2019 Board Meeting



LOCATION	
County/Counties:	Denver
Drainage Basin:	Metro

DETAILS	
Total Project Cost:	$302,000
Water Plan Grant Request:	$130,000
Recommended Amount:	$130,000
Other CWCB Funding:	
Other Funding Amount:	$124,000
Applicant Match:	$48,000
Project Type(s): Construction/Study	
Project Category(Categories): Conservation and Land Use Planning	
Measurable Result: 40 new homes equipped; 2.42 af/yr demand reduction for 40 homes; 1.14 af/yr in sewer reduction for 40 homes	

The proposed pilot will enable Denver Water to measure water savings in new construction homes built with the Greyter HOME™ Solution, Phyn Plus, and Uponor Logic plumbing over a 12 month period. The outcomes of the project will provide local and state officials with information regarding water conservation, innovation, and education. The data will not only validate the water conservation capability of these technologies, but will educate Coloradans about water savings capabilities of graywater use, leak detection, structured plumbing, and real-time data into conservation efforts. The unique platform of technologies featured in the 40-home pilot is called the "The Sustainable Water Solution."

The Phyn Plus will be installed in every home, just after the water meter. The device is capable of monitoring indoor and outdoor water usage. Phyn monitors pressure, temperature and flow. Homeowners will receive alerts if there is unusual or irregular use and it will shut the main off automatically in the event of a catastrophic leak. The installation of a Phyn Plus device can reduce water consumption by up to 15 percent.

The homes will be plumbed using Uponor's Pex A piping (1/2" and ¾" plastic pipe) where the supply runs will be designed to maximize efficiency on distribution. By using multi-ports in strategic locations, Logic Plumbing hot water run times are shortened which saves water (~1,000 gallons annual per household).

The final water savings solution is the graywater system, the Greyter HOME™. All homes will capture the master shower and a secondary shower/bath water combo, and that water will be filtered and treated on-site and then re-used to flush toilets. The Greyter HOME will reduce indoor consumption by as much as 25 percent and tackling the single biggest use of water in a home.

This project is first of its kind, as no U.S. Production Builder has incorporated all 3 solutions together, and the goal is to make this a standard practice, as it is the most efficient way to build new houses for maximum water conservation.

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Colorado Water Conservation Board
Water Plan Grant Application

Instructions
To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as "project") funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website. If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas: Water Storage Projects — Anna.Mauss@state.co.us Conservation, Land Use Planning — Kevin.Reidy@state.co.us Engagement & Innovation Activities — Ben.Wade@state.co.us Agricultural Projects — Alexander.Funk@state.co.us Environmental & Recreation Projects — Chris.Sturm@state.co.us **FINAL SUBMISSION: Submit all application materials in one email to *waterplan.grants@state.co.us* in the original file formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.**

Water Project Summary	
Name of Applicant	Uponor & Phyn & Greyter Water Systems
Name of Water Project	Sustainable Water Solution (SWS)
CWP Grant Request Amount	$130,000
Other Funding Sources Denver Water	$52,000
Other Funding Sources Lennar Homes	$52,000
Other Funding Sources Insurance Providers	$20,000
Applicant Funding Contribution	$48,000
Total Project Cost	$302,000

Applicant & Grantee Information
Name of Grantee(s) Uponor Ltd. Uponor + Phyn + Greyter Water Systems
Mailing Address: 5925 148th St. W, Apple Valley, MN 55124

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FEIN: 36-3306746
Organization Contact Ann Reynolds
Position/Title: Strategic Consultant
Email Ann.Reynolds@uponor.com
Phone (651) 285-2008
Grant Management Contact Shahrokh Shahsavari
Position/Title Grant Application Manager for Greyter Water Systems
Email sshahsavari@greyter.com
Phone 519 980 8046
Name of Applicant (if different than grantee) Greyter Water Systems
Mailing Address 110 Saunders Rd. Unit 9 Barrie, ON L4N 9A8 Canada
Position/Title VP Business Development/Co-Founder
Email jbell@greyter.com
Phone 416 662 5737
Description of Grantee/Applicant
Provide a brief description of the grantee's organization (100 words or less).
The proposed project is a collaboration between Greyter Water Systems and Uponor North America, the maker of Phyn Plus. Greyter is a water reuse solution that reduces the water and wastewater demands of residential homes by up to 25 percent. Phyn Plus is a leak detection system with an automatic shut-off. Phyn Plus can save up to 15 percent of a home's water consumption. Together, these organizations partner with local and state governments to reduce water consumption by up to 40 percent annually. Uponor is a leading manufacturer of cross-linked polyethylene (PEX) pipe and innovative water solutions.

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Type of Eligible Entity (check one)	
	Public (Government): Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
	Public (Districts): Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
X	**Private Incorporated:** Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes.

Type of Water Project (check all that apply)	
X	Study
X	Construction
X	Identified Projects and Processes (IPP)
	Other

Category of Water Project (check the primary category that applies and include relevant tasks)		
	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.. *Applicable Exhibit A Task(s):*	
X	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. *Applicable Exhibit A Task(s):*	
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. *Applicable Exhibit A Task(s):*	
	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit A Task(s):*	
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*	
	Other	Explain:

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Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Denver
Latitude	39°47'54.1"N
Longitude	104°52'32.4"W

Water Project Overview
Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.
The proposed pilot will enable Denver Water to measure water savings in new construction homes built with the Greyter HOME™ Solution, Phyn Plus, and Uponor Logic plumbing over a 12 month period. The outcomes of the project will provide local and state officials with information regarding water conservation, innovation, and education. The data will not only validate the water conservation capability of these technologies, but will educate Coloradans about water savings capabilities of graywater use, leak detection, structured plumbing, and real-time data into conservation efforts. Finally, the state will gain qualitative data on change consumer behavior in these communities. The funding will be used for procurement of materials, installation, establishing best practices, and overseeing the project. The key water sources are South Platte River Basin and the Metropolitan Front Range. The **Greyter HOME™** is an NSF 350 certified graywater system that reduces incoming and outgoing water usage. **Phyn Plus** monitors water consumption with real time leak detection information and helps to change consumer behavior. Uponor **Logic Plumbing** efficiently distributes supply by shortening hot water runs. Denver Water, Lennar Homes, Greyter HOME™ Solution, and Uponor will build a more water efficient home, reducing usage by up to 40 percent.

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Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
	New Storage Created (acre-feet)	
See attached spreadsheet - "Measurable Results Table"	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
	Existing Storage Preserved or Enhanced (acre-feet)	
See attached spreadsheet - "Measurable Results Table"	Length of Stream Restored or Protected (linear feet)	
	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms	
See attached spreadsheet - "Measurable Results Table"	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
See attached spreadsheet - "Measurable Results Table"	Number of Coloradans Impacted by Engagement Activity	
See attached spreadsheet - "Measurable Results Table"	Other	Explain: Outflows - waste treatment facilities will see a reduction because of graywater systems, which in some case may be significant, depending on current capacity and growth projections. Treating less graywater will have significant benefits. A bigger macro benefit is greenhouse gas reduction. In some cases, GHG's will be reduced as less energy will be required to move and treat water.

Water Project Justification
Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, and the applicable Roundtable Basin Implementation Plan and Education Action Plan. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers). The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)

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The Sustainable Water Solution project supports and furthers the measurable objectives of conservation, land use, education, outreach, and innovation articulated in Colorado's Water Plan and the South Platte Basin Implementation Plan. It is also consistent with the water education efforts described in the applicable Education Action Plans.

Colorado's Water Plan

Measurable Objective(s)	Project Goal/Action	Citation
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving actions into land-use planning by 2025. **Education, Outreach, and Innovation:** Significantly improved level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys.	**Action: The Project strengthens partnerships –** This Project will strengthen partnerships between the CWCB and a) Local water providers and local governments, b) Intra-state government to coordinate and implement incentives, c) Green industry, d) Home builders to implement water-smart homes, e) Non-governmental organizations to help educate Coloradans and advance conservation innovations and research, f) Academia (Colorado State University) through data collection that can be made available for research purposes.	Chapter 6, Section 6.3.1 (Municipal Water Conservation), p. 6-73
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving actions into land-use planning by 2025.	**Action: The Project furthers the Plan's recognition that "graywater reuse should be an important component of new construction."**	Chapter 6, Section 6.3.2. (Reuse), p. 6-75
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving actions into land-use planning by 2025.	**Action: The Project provides an effective and efficient vehicle for the CWCB to deliver financial incentives for reuse innovation.**	Chapter 6, Section 6.3.2. (Reuse), p. 6-82
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving	**Action: The Project aligns conservation and graywater use activity to the Plan's stated action of working with CDPHE and the Colorado Plumbing Board to adopt the International Plumbing Code to allow for graywater.**	Chapter 6, Section 6.3.2. (Reuse), p. 6-82

actions into land-use planning by 2025.		
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving actions into land-use planning by 2025.	**Action: The Project allows for expanded funding of reuse and conservation programs.**	Chapter 6, Section 6.3.2. (Reuse), p. 6-82
Education, Outreach, and Innovation: Significantly improved level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys.	**Action: The Project supports and furthers reuse education.**	Chapter 6, Section 6.3.2. (Reuse), p. 6-82
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving actions into land-use planning by 2025.	**Action: The Project allows the CWCB to examine mechanisms to improve the ability to market, sell, and share reusable supplies.**	Chapter 6, Section 6.3.2. (Reuse), p. 6-82
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving actions into land-use planning by 2025. **Education, Outreach, and Innovation:** Significantly improved level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys.	**Action: The Project will improve the direct link between water provider and customer referenced in the Plan.** "Through this direct link, a water provider can communicate educational messaging about such topics as water consumption targets, water restrictions, and leak detection."	Chapter 6, Section 6.3.1. (Municipal Water Conservation), p. 6-63
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050.	**Action: The Project will help elevate implementation and penetration levels for conservation strategies and demand reduction, specifically, the conservation-**	Chapter 5 (Water Demands), p. 5-8

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Education, Outreach, and Innovation: Significantly improved level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys.	**oriented construction provisions and leak detection measures.**	
Conservation: 400,000 acre-feet of municipal/industrial conservation by 2050. **Land Use:** 75 percent of Coloradans living in communities that have incorporated water-saving actions into land-use planning by 2025.	**Action: The Project will contribute to the library of examples described by the Plan on topics such as graywater use.**	Chapter 7, section 7.3 (Water Quality), p. 7-32

Roundtable Basin Implementation Plans and Education Action Plans

Measureable Objective(s)	Project Goal/Action	Citation
Municipal Water Conservation, Reuse & Efficiency: Enhance current levels of municipal water reuse	**Action: The Project will enhance current levels of municipal water reuse and will assist in quantifying the effects of additional municipal water conservation on water available for reuse**.	Section S.3.2 (Successive Use, Conservation, and Reuse), Section S.5.2 (Maintain leadership in conservation and reuse and implement additional measures to reduce water consumption rates) Section 1.9.2 (Municipal Water Conservation, Reuse & Efficiency), p. 1-26
Develop and Maintain Outreach Tools and Approaches; Complement Existing State Efforts	**Action: The Project will educate and improve public understanding regarding the potential for conservation available from indoor graywater use and leak detection innovation.**	Section S.5.9 (Facilitate effective South Platte communications and outreach programs that complement the state's overall program),
Municipal Water Conservation, Reuse & Efficiency: Enhance current levels of municipal water reuse	**Action: The Project will enhance statewide education to provide reliable data that will 1) support higher levels of indoor conservation and 2) assist land**	Section 4.3.1.7 (Conservation Summary), p. 4-23

Develop and Maintain Outreach Tools and Approaches; Complement Existing State Efforts	**use planning in promoting densification, growth management, and comprehensive plans to include considerations for impact fees and firm yield as called for in the SP BIP. The Project will also provide a model that is replicable and scalable for future water savings in communities throughout Colorado and the US.**	

Related Studies

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

The Sustainable Water Solution project addresses several measurable objectives in Colorado's Water Plan and scarce is the CWCB programing it does not touch. The following discrete CWCB programs will see a direct benefit from the SWS project although other beneficiaries undoubtedly exist:

Water Efficiency (including the CWCB's Water Efficiency Planning assistance, the CWCB's Reporting of Water Use and Water Conservation Data pursuant to HB10-1051, and the important purpose and goals of the Water Conservation Technical Advisory Group (WCTAG))

Drought (specifically within the Drought Planning Toolbox's Drought Management Plan guidance regarding conservation)

Water Supply Planning (including municipal and industrial use calculations in gap analysis and supply and demand studies)

Previous CWCB Grants, Loans or Other Funding

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

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N/A

Taxpayer Bill of Rights
The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.
N/A

Submittal Checklist	
	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
	Statement of Work(1) *SEPARATE DOC* – **Submitted**
	Budget & Schedule(1) SEPERATE DOCUMENT **Submitted**
	Engineer's statement of probable cost (projects over $100,000) **N/A**
	Letters of Matching and/or Pending 3rd Party Commitments(1) **Submitted**
Exhibit C	
	Map (if applicable)(1) **Submitted**
	Photos/Drawings/Reports **Submitted**
	Letters of Support (Optional) **Submitted**
	Certificate of Insurance (General, Auto, & Workers' Comp.) (2) **Submitted**
	Certificate of Good Standing with Colorado Secretary of State(2) **Submitted**
	W-9(2) **Submitted**
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
	Engagement & Innovation Supplemental Application(1) **N/A**

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Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	
Name of Grantee:	**Uponor + Phyn + Greyter Water Systems**
Name of Water Project:	**The Sustainable Water Solution**
Funding Source:	**CWCB and Project Partners**

Water Project Overview:

The 40-home pilot will feature a unique platform, what we call the "The Sustainable Water Solution." Simply put, it's the best way to a plumb a house and provides the biggest opportunity for water savings. The platform can reduce water consumption by up to 40 percent.

The Phyn Plus will be installed in every home, just after the water meter. The device is capable of monitoring indoor and outdoor water usage. Phyn monitors pressure, temperature and flow. It communicates with the homeowner via an app. Homeowners will receive alerts if there is unusual or irregular use and it will shut the main off automatically in the event of a catastrophic leak. Additionally, Denver Water will have access to a dashboard that provides real-time data on water activity. The installation of a Phyn Plus device can reduce water consumption by up to 15 percent.

The homes will be plumbed using Uponor's Pex A piping (1/2" and ¾" plastic pipe) where the supply runs will be engineered designed in order to maximize efficiency on distribution. By using multi-ports in strategic locations, Logic Plumbing hot water run times are shortened which saves water (~1,000 gallons annual per household).

The final water savings solution is the graywater system, the Greyter HOME™. All homes will capture the master shower and a secondary shower/bath water combo, and that water will be filtered and treated on-site and then re-used to flush toilets. The Greyter HOME will reduce indoor consumption by as much as 25 percent. Toilets are the single biggest wasters of water in a home, and it makes no sense flushing toilets with perfectly good drinking water.

This project is first of its kind, as no U.S. Production Builder has incorporated all 3 solutions together, and the goal is to make this a standard practice, as it is the most efficient way to build new houses for maximum water conservation.

Project Objectives:

This project will benefit a number of key stakeholders – municipalities/water utilities, builders/developers and homeowners. There are a number of key objectives:

1. **Awareness**:
   Greywater recycling is not new, but Greyter Water Systems has created the first practical home appliance (certified to NSF 350, required by Colorado) that captures shower and bath water only and reuses it for toilet flushing. Education is required for a solution like this to become mainstream. Builders need to be aware of the solution and its benefits, plumbers need to understand the rough-in/installation requirements, municipalities need to know how solutions like the Greyter HOME™ can help with water conservation strategies and homeowners need to be aware that solutions like these are available, how they work and what the benefits are. Educating key stakeholders is very important.

Toilets are one of the biggest waters of water in a home, and it makes no sense flushing toilets with perfectly good drinking water and now you don't have to with the Greyter HOME™.

Phyn Plus is cutting edge technology that monitors a home's water pressure, temperature, and flow 240 times per second. It provides real-time data to the homeowner via an app. Additionally, Phyn Plus can provide real-time data to a municipality via an online dashboard. In the event of a catastrophic emergency, the device allows for a home's water to be shut off by the homeowner from the device, by the municipality from the dashboard, or automatically by the Phyn Plus device.

Phyn Plus will raise awareness on the following types of issues:

- Pinhole leaks
- Freeze warning
- High water pressure
- Low water pressure
- Backflow

Phyn Plus learns how a family uses water inside the home (e.g. laundry, showering needs, dishwashing) and outside the home (e.g. yard and landscaping needs). Phyn Plus then leverages this knowledge to detect abnormal water activity and leaks – both inside and outside the home. When abnormal water activity is detected, the device sends alerts the homeowner via their mobile app and text message so the homeowner can request through the app that the water be turned off.

If the homeowner doesn't respond to the series of alerts, Phyn Plus can take the initiative and automatically turn off the water.

Phyn Plus will also send critical alerts for the following conditions:

- Extended water usage
- High water usage when an excessive amount of water is being consumed
- Water system shutoff when the device automatically shuts off the water supply to the home because the homeowner didn't respond to a critical alert

Every day Phyn Plus will run a detailed "health check" to assure there aren't any leaks, large or small, in the home. The health check closes the valve and monitors the pressure in the pipe, looking for even the smallest drop that would signify there is a

Phyn Plus will also send critical alerts for the following conditions

- Extended water usage
- High water usage when an excessive amount of water is being consumed.
- Water system shutoff when the device automatically shuts off the water supply to the home because the homeowner didn't respond to a critical alert

Every day Phyn Plus will turn off the water supply to the home to run a detailed "health check" to assure there aren't any leaks, large or small, in the home. The health check closes the valve and monitors the pressure in the pipe, looking for even the smallest drop that would signify there is a leak. Over time, even a small leak can cause a large amount of damage in a home; including allowing mold to grow.

2. **Training** – Both the Greyter HOME™ and the PHYN will be installed by the builder's plumber. Both solutions are easy to install, but training is needed in order to get plumbers comfortable for what is required. This is important as we want plumbers to be strong advocates for solutions like

these, we also need to ensure they fully understand all of the requirements, so they price the scopes of work appropriately. Proper training will eliminate any chance of over pricing a job**.**

Data Monitoring/Performance – Another key objective of the project is to obtain real world data and validate a number of measures. This would include what the actual consumption levels are for typical homeowners. This is valuable information for water utilities as this project will measure both indoor and outdoor use (Phyn Plus) in real time, which is significant on a number of levels. Fixture sizing and pipe sizing for water infrastructure is based on antiquated data that does not represent today's water efficient homes. The data collected will potentially help provide policy makers with better data when it comes to improving plumbing codes. For example, if homes are using less and require less water, and water is distributed more efficiently why then can't a home's meter size be decreased (i.e. ¾" to ½"). From a leak detection perspective, the EPA says 10% of all houses leak, we will be able to validate that and provide data regarding just how much water was potentially save by incorporating Phyn Plus. The same will be learned when it comes to greywater recycling. Both the Phyn Plus and Greyter are able to detect toilet leaks which could amount to thousands of gallons lost if not detected. The Greyter HOME™ also has the ability to track its efficiency, measuring how much graywater is used to flush toilets, and how much freshwater is used, providing an overall efficiency and water savings. The data collected over the year from both the Phyn and Greyter HOME™ will help inform all stakeholders.

Tasks
Task 1 – [Greyter]
Description of Task: Plumber Education

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Tasks
For the Greyter HOME™, one of the most important tasks is educating the plumbers. In almost all cases this will be the first time the plumber has installed a greywater system, and for some, the first time they have even heard of a system like this.
Method/Procedure: Documentation and Training
• Lennar will submit model plans for the 40-homes. Greyter will work through the drawings and provide a detailed layout for the rough-in plumbing. • The builder will submit the drawings for permit. • Greyter will walk through rough-in requirements for first few houses and confirm layouts on site. • At installation Greyter will train plumber and be on site for first few houses.
Deliverable: Installed System
Once system is installed a Greyter representative will provide orientation to homeowner. Greyter will provide annual complimentary maintenance for the first 2-years (part of the NSF 350 certification). After year two, an annual service contract will be set up with a third party provider.

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Tasks
Task 2 – [Greyter]
Description of Task: Local Technical Support
Greyter will need to build a local support team to service and maintain the Greyter HOME™ systems on an annual basis. This will be carried out by a local Greyter Agent (i.e. plumber, service provider, contract employee). Moving outside of the 1-year pilot phase it is imperative Greyter has in place proper field support moving forward. Apart of Greyter's NSF 350 Certification, Greyter is responsible for providing annual complimentary maintenance for the first two years.
Method/Procedure: Training
The training required to maintain the Greyter HOME is minimal, and homeowners can certainly do, but it's not our experience that this is right approach. We prefer to have a trained maintenance professional handling the annual requirements. As we know, most homeowners don't change their furnace filter every 3-6 months. The annual maintenance requirements are: **1.** Add 3-gallons of liquid chlorine **2.** Exchange media cartridge (activated carbon – simply swapped out) **3.** Inspect pre-filter Maintenance professionals will also be trained on how to repair, replace any of the Greyter HOME's components. Since the components are mostly pumps and solenoid valves, the training required for servicing is very straight forward.
Deliverable: Local Field Support
Trained agent(s) with local support in place at the time of the first installation. Agent will be able to service unit within 24-hours.

Tasks
Task 3 – [Greyter]

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Tasks
Description of Task: Data Collection
The 40-home pilot will be monitored for 1-year, with all data reporting/findings available to the project partners. The Greyter HOME has remote monitoring capabilities which includes all system operations with the ability to track daily water savings.
Method/Procedure: Internal Reporting As long as there is WIFI connectivity Greyter will be able to monitor all performance measures, which will include sending homeowner alerts if required (i.e. chlorine level in getting low). Greyter will track key measures monthly.
Deliverable: 1-year final report
In the final report Greyter will breakdown key findings over the 12-month monitoring period, which will include: • Overall water savings (greywater to toilets) • System analysis (performance of the Greyter HOME™) • Greyter HOME™ efficiency (based on volume of showers/meeting toilet demand)

Tasks
Task 4 – [Greyter]
Description of Task: Feedback

Tasks
After the 1-year mark Greyter will recap its findings with the builder, homeowners and Denver Water. These stakeholders will provide their own insight which will be complied into a final report.
Method/Procedure: Surveys
Greyter will conduct surveys and compile valuable information from the pilot participants. It will include information from: **Homeowners** • What was their overall satisfaction level? • Would they recommend to others? • What concerns did they have prior? **Builders** • What feedback did they receive from homeowners and plumbers? • What suggestions would they make to improve implementation? • How can we reduce costs? • What's stopping them from offering these components as standard? **Denver Water** • What was their feedback? • Do they see this as being a part of their long-term water conservation measure? • Are they open to discounting tap fees or providing other incentives for builders to add graywayter capabilities?
Deliverable: Report A final report will be produced specifically identifying feedback from these stakeholders.

Tasks
Task 1 – [Phyn Plus] Training
Description of Task: Installation Training: Phyn Plus will work builders' preferred installers and train them per standards of the Uponor Pro Squad. The Uponor Pro Squad is exclusively trained on the Phyn Plus product as well as the multiple installation configurations and considerations that can arise in a home. The Uponor Pro Squad training and process will ensure that the Phyn Plus installation is expertly completed for each home.

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Tasks
Sales Training: Phyn Plus will partner with Lennar to train their teams on the Phyn Plus product. We will want them to be able to talk to the product, the project, and the benefits to the homeowner. Additionally, we will provide them with unaided sales tools to provide a deeper level of information to the homeowners. Dashboard Training: We will provide training to Denver Water on the Phyn Plus Dashboard. We will teach them who to use the system, run reports, and be able to monitor the devices.
Method/Procedure: E-Learning, Face to Face
Deliverable:
All selected plumbers, model home agents, and Denver Water employees are trained per the outlined standards.

Tasks
Task 2 – [Phyn Plus]
Description of Task: Local Technical Support

Last Updated: November 2018

Tasks
Plumbers: Phyn Plus will work with builders' preferred installers and provide them the support systems available to the Uponor Pro Squad. They will be taught how to trouble shoot installation issues, product performance issues and to utilize the data to fix plumbing issues. Additionally, Uponor has a trained team of professionals that are available to help support plumbers with installation, service, or product issues. Homeowners: Phyn Plus offers 24/7 customer service for homeowners. Homeowners would be able to call anytime with troubleshooting issues, questions about alerts, or to have any questions answered. Municipalities: Denver Water will have access to all of the resources available from Uponor and the Phyn Plus team.
Method/Procedure: Email/Phone/Face to Face
Deliverable:
Ensuring that customer service is knowledgeable and available to the respective parties.

Tasks
Task 3 – [Phyn Plus]
Description of Task: Qualitative Data Collection Phyn Plus will survey key stakeholders in the process to understand their experiences and feedback from the project. **Homeowners** • What was their overall satisfaction level? • What were their key learnings? • Would they recommend to others? **Builders** • What feedback did they receive from homeowners and plumbers? • What feedback did they receive from their teams? • What suggestions would they make to improve implementation? • How can we reduce costs?

Last Updated: November 2018

Tasks
• What's stopping them from offering these capabilities as standard? **Denver Water** • What was their feedback on the project, product, and dashboard? • Do they see this as being a part of their long-term water conservation measure? • Are they open to discounting tap fees or providing other incentives for builders?
Method/Procedure: Combination of online survey's and face to face interviews.
Deliverable:
The deliverable will be to gain insights from key stakeholders and report out to all interested parties. These will be presented in a face to face wrap up meeting and detailed report.

Tasks
Task 4 – [Phyn Plus]
Description of Task: Quantitative Data
Denver Water will provide data analytics to validate the potential water savings of these devices for future Colorado builds.
Method/Procedure: Email/Phone/Face to Face
Deliverable:
Ensuring that customer service is knowledgeable and available to the respective parties.

Last Updated: November 2018

Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Reporting Requirements

Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to CWCB in hard copy and electronic format as part of the project documentation.

Performance Measures

Performance measures for this contract shall include the following:
(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit B. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.
(b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.

Last Updated: November 2018

Performance Measures
(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary. (d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Exhibit B
Budget and Schedule

Prepared Date: July 15, 2019
Name of Applicant: Uponor & Phyn & Greyter Water Systems
Name of Water Project: The Sustainable Water Solution
Project Start Date: November 4, 2019
Project End Date: September 30, 2021

Task No.	Task Description	Task Start Date	Task End Date	Grant Funding Request	Match Funding	Total
1	Initial meeting with Lennar and Five Star Plumbing. Confirm all model home layouts and go over rough-ins for both Greyter and Phyn. Travel to Denver for 2-3 days. Meet with building inspectors to confirm requirements for permit submission. In-kind includes meetings/flights/accommodations/car/food.	2019-11-04	2019-11-08	$0	$5000	$5000
2	Marketing and Sales Training with Greyter/Phyn and Lennar internal staff. Meeting will include Division President, Contracts Manager, Marketing and Sales, and Customer Care/Service. Collateral material and selling features/content marketing created. Meetings with Denver Water to discuss outreach and marketing platform. In-kind includes meetings/flights/accommodations/car/food and builders resources.	2019-11-25	2019-11-29	$0	$15,000	$15,000
3	Rough-ins for 40 houses. Plumber to complete in 2-4 months. Lennar paying for rough-ins ($550 per house)	2020-02-01	2020-06-01	$0	$21,000	$21,000
4	After a few houses roughed in - Greyter walks houses with plumber to confirm plumbing runs before drywall. Will confirm rough-in place holder for Phyn. In-kind includes site meetings/ flights/accommodations/car/food.	2020-02-01	2020-02-29	$0	$2,500	$2,500
5	Units begin shipping to Denver and plumbers start installations. Lennar will close 5-10 homes monthly. Lennar pays 5 Star Plumbing for installations. (550 per house).	2020-04-01	2020-09-30	$0	$21,000	$21,000
5	Units shipped and installed. Total systyem costs Greyter + Phyn with inspections, freight, etc. ($4,725 per house = $189,000). Cash contributions from Greyter/Phyn/Denver Water/Insurance Provider. 5-10 units installed monthly.	2020-04-01	2020-09-30	$109,000	$80,000	$189,000
6	Commissioning Agent Training and Field Support Training. Greyter/Phyn local support training. In-kind includes training/ flights/accommodations/car/food/meetings.	2020-03-15	2020-03-31	$0	$10,000	$10,000
7	Greyter Commissioning and homeowner orientation along with Phyn. (40-units X $100 per unit)	2020-04-01	2020-09-30	$0	$4,000	$4,000
8	Data collection, reporting, water sampling and testing, on going customer support for 1-year. Will include creation of marketing material to share with other jurisdictions.	2020-04-01	2021-09-30	$21,000	$18,500	$39,500

						$0
						$0
						$0
						$0
						$0
			Total	$130,000	$172,000	$302,000

Solution	Potential Savings (Annual - Family of 4)	Notes
Greyter HOME	9,300	
PHYN Plus	9,400	
Logic Plumbing	1,000	
Total	19,700	
Gallons Per Acre Feet	325,851	
Pilot - Number of Homes	40	
Assumption (Occupants Per Home)	4	

Annual Supply Conserved	Potential Acre Feet Savings		
Single unit	0.06	**Annual Builds**	
Pilot - 40 Homes	2.42		
State Annual Lennar if standard	105.80	1,750	
State - All New Single Family if standard	2720.57	45,000	2018 New Homes Built

Note - Greywater also saves outflows - Sanitary/Waste	
Single unit	0.03
Pilot - 40 Homes	1.14
Potential for State if Standard (Annual Lennar 2018)	49.95
Potential for State if Standard (All New Single Family 2018)	1284.33

Number of Coloradans Impacted		
Pilot	160	
Potential for State if Standard (Annual Lennar 2018)	7,000	
Potential for State if Standard (All New Single Family 2018)	135,000	Assumes 3 people per house

August 8, 2019

From: Metro Roundtable
Subject: Letter of Support for the Sustainable Water Solution Project Grant Application

Dear CWCB Members,

The Metro Roundtable would like to offer its support for the Sustainable Water Solution Project grant application recently submitted to the CWCB by Greyter Water Systems, Uponor, and Phyn Plus. The idea of building new houses with these solutions and promoting water conservation and leak detection, which can reduce water consumption by as much as 40 percent, fully aligns with our goals and initiatives related to conservation. It also addresses a number of the important measurable objectives in Colorado's Water Plan.

Reuse is something we very much support and, when it comes to the use of our precious drinking water, it makes perfect sense to use shower and bath water for toilet flushing rather than drinking water. Leak detection has numerous benefits and being able to prevent catastrophic leaks in a manner that saves thousands of gallons of water annually and costly repairs to rate payers, we see these two solutions as smart innovations that hold great potential.

On behalf of the Metro Roundtable we are pleased to support the application.

Regards,

Barbara Biggs
Chairperson, Metro Roundtable

H:\Chairperson Letter (Eklund).docx

DENVER WATER

1600 West 12th Ave
Denver, CO 80204-3412
303.628.6000
denverwater.org

July 31, 2019

Kevin Reidy
Colorado Water Conservation Board
1313 Sherman St., Rm 721
Denver, CO 80203

Re: The Sustainable Water Solution

Dear Kevin,

On behalf of Denver Water, I would like to confirm our support for the Sustainable Water Solution grant application.

This project will be the first implementation of gray water systems in Denver and provide an important demonstration of this approach to conserving and reusing water. This project will result in the installation of gray water systems in 40 single family homes as part of a new development in Denver Water's service area. Water will be collected from showers and reused for toilet flushing. The development team has estimated that potable water consumption will be approximately 25% less than it would have been without gray water systems.

Denver Water is currently operating a pilot program to incentivize advanced water conservation tactics for new developments that go beyond current building codes for fixtures and landscaping. This project will expand that program in two ways. It will be the first single family residential development to be eligible for this program, and the first project to incorporate water reuse.

Construction is planned for November 2019 and data collection and evaluation will be conducted for the first year of operation. The following information will be provided:

- Real time water consumption data
- Actual project costs
- Actual water savings
- Homeowner perceptions/engagement
- Builder feedback

Denver Water is committed to expanding water conservation and reuse in our service area and across Colorado and we encourage the Colorado Water Conservation Board to fund this project.

Sincerely,

Mike King
Chief External Affairs Officer

City of Thornton

Infrastructure Maintenance Center
12450 Washington Street
Thornton, CO 80241-2405

Infrastructure Department
720-977-8600
FAX 720-977-6202
www.cityofthornton.net

July 23, 2019

Kevin Reidy
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203

Re: The Sustainable Water Solution

Dear Kevin,

On behalf of the city of Thornton, I would like to express my support for the Sustainable Water Solution Colorado Water Plan grant application.

This pilot has the potential to advance both greywater and leak detection technologies in residential applications in Colorado, and it demonstrates an exciting partnership between water providers, homebuilders, and the private sector. This sort of collaboration is essential in order to meet the aggressive conservation goals of the Colorado Water Plan.

On the ground implementation is the best way to iron out the kinks in both new technologies and new partnerships. This pilot will evaluate the application of this technology, and will result in better understanding of the following:

- accurate project costing for rough-in/installation costs of all solutions - true builder pricing
- greywater data - potential savings for toilet flushing when greywater system used
- homeowner feedback/interaction
- builder feedback implementation/trade comments

Thornton is investigating these technologies as well, and we will be watching and learning from this pilot. We hope that the results of this pilot help pave the way for more collaboration between builders and water providers around water usage, and allow communities like Thornton to more easily implement greywater and leak detection technologies in new residential developments.

We encourage you to fund this project.

Please let me know if you need any additional information. Thank you for your consideration.

Sincerely,

Emily Hunt
Water Resources Manager

Frank Walker
Division President - Lennar Colorado
Frank.Walker@lennar.com
Direct Line: 303-754-0612
Cell: 303-257-6345
9193 South Jamaica Street, 4th Floor
Englewood, CO 80112

Monday July 29, 2019,

Subject: Colorado Water Plan Grant Application Letter of Commitment

To: Colorado Water Conservation Board
Re: The Sustainable Water Solution

Lennar Homes is pleased to confirm its commitment to the Sustainable Water Solution Application. Lennar plans to install the Greyter Water Systems (greywater system) as an included feature in forty homes built in Denver's Stapleton Neighborhood. The Greyter Water Systems (greywater system) will include the PHYN (leak detection) and Uponor (Logic Plumbing).

Having introduced solar panels as a standard item in 2015, Lennar is committed to building energy and water efficient homes. In Stapleton, all Lennar homes feature the following water efficient solutions:

- ENERGY STAR® Qualified dishwashers use less water and add to overall household water savings.
- Programmable automatic irrigation system equipped with rain-sensor to avoid unnecessary landscape watering.
- Low flow faucets conserve water and help reduce overall internal household water consumption.
- Low flow toilets meet specific conservation criteria and help reduce water use in the home.

Lennar is excited to participate in this project, as finding innovative solutions to increase water efficiency for its homebuyers is top of mind, especially in the state of Colorado where water is such a valued resource. With the potential of building homes that can increase conservation by more than 35%, and protecting its homeowners from catastrophic leaks, the Sustainable Water Solution is a platform that fits within Lennar's EI – Everything's Included – Program.

Currently, there is no practical residential greywater system on the market, and we are excited to include the Greyter HOME™, PHYN and Uponor Logic in our Stapleton Community.

As a part of our commitment, Lennar will be contributing $42,000 in cash and $10,000 in-kind for the 40-home project. The cost to rough-in and install the Greyter HOME™ and provide power for Greyter and PHYN will be $1,050 per house. See attached estimate from Five Star Plumbing (does not include electrical estimate). Lennar will also contribute $10,000 of in-kind contributions which will cover sales and marketing training.

Again, we are excited about the opportunity to be involved in a project like this, which is the first of its kind in North America. No national homebuilder that we know of has built houses with a forward-thinking strategy like this that addresses reuse (greywater for toilet flushing), leak detection, and logic plumbing (engineered distribution) under one roof.

Please feel free to contact me inf you have any questions or need further information.

Regards,

Frank Walker
Division President – Lennar Colorado

More about Lennar Homes:
One of the Nation's leading homebuilders providing homes for first-time, move-up, luxury, urban and active adult buyers. Lennar was founded in 1954 in Miami, Florida and currently builds in 19 states and more than 44 markets across the Nation. Lennar, Colorado's largest homebuilder, has been building homes in Colorado since 2001.

LENNAR

Frank Walker
Division President - Lennar Colorado
Frank.Walker@lennar.com
Direct Line: 303-754-0612
Cell: 303-257-6345
9193 South Jamaica Street, 4th Floor
Englewood, CO 80112

Wednesday July 29, 2019,

Subject: Water Plan Grant Application Letter of Commitment

To: Colorado Water Conservation Board

Lennar Homes is pleased to confirm its commitment to the Total Water Solution Application. Lennar plans to install the Greyter Water Systems (greywater system) as an included feature in forty homes built in Denver's Stapleton Neighborhood. The Greyter Water Systems (greywater system) will include the PHYN (leak detection) and Uponor (Logic Plumbing).

Having introduced solar panels as a standard item in 2015, Lennar is committed to building energy and water efficient homes. In Stapleton, all Lennar homes feature the following water efficient solutions:

- ENERGY STAR® Qualified dishwashers use less water and add to overall household water savings.
- Programmable automatic irrigation system equipped with rain-sensor to avoid unnecessary landscape watering.
- Low flow faucets conserve water and help reduce overall internal household water consumption.
- Low flow toilets meet specific conservation criteria and help reduce water use in the home.

Lennar is excited to participate in this project, as finding innovative solutions to increase water efficiency for its homebuyers is top of mind, especially in the state of Colorado where water is such a valued resource. With the potential of building homes that can increase conservation by more than 35%, and protecting its homeowners from catastrophic leaks, the Sustainable Water Solution is a platform that fits within Lennar's Fi – Everything's Included – Program.

Currently, there is no practical residential greywater system on the market, and we are excited to include the Greyter HOMEE, PHYN and Uponor Logic in our Stapleton Community.

As a part of our commitment, Lennar will be contributing $42,000 in cash and $10,000 in-kind for the 40-home project. The cost to rough-in and install the Greyter HOMEE and provide power for Greyter and PHYN will be $1,050 per house. See attached estimate from Five Star Plumbing (does not include electrical estimate). Lennar will also contribute $10,000 of in-kind contributions which will cover sales and marketing training.

Again, we are excited about the opportunity to be involved in a project like this, which is the first of its kind in North America. No national homebuilder that we know of has built houses with a forward-

LENNAR

thinking strategy like this that addresses reuse (greywater for toilet flushing), leak detection, and logic plumbing (engineered distribution) under one roof.

Please feel free to contact me inf you have any questions or need further information.

Regards,

Frank Walker
Division President – Lennar Colorado

More about Lennar Homes:
One of the Nation's leading homebuilders providing homes for first-time, move-up, luxury, urban and active adult buyers. Lennar was founded in 1954 in Miami, Florida and currently builds in 19 states and more than 44 markets across the Nation. Lennar, Colorado's largest homebuilder, has been building homes in Colorado since 2001.

PLEASE NOTE FIVE STAR PLUMBING SUBMITTED ESTIMATED FOR ROUGH-IN AND INSTALLATION BY EMAIL. WE WILL PROVIDE A FIRM PRICE SHORTLY.

John , my info is five star plumbing and heating 11595 Lewistown st commerce city , colo 80022 303-929-6406 and yes I was looking at about the $ 1,000.00 range

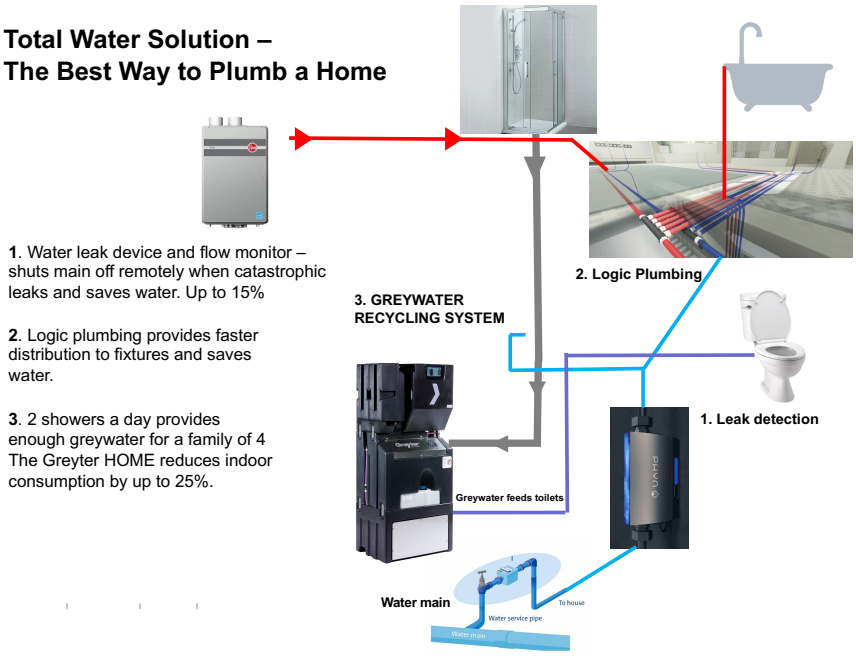
PLEASE NOTE WE ARE EXPECTING A LETTER OF COMMITMENT FROM DENVER WATER FOR AMOUNT LISTED IN APPLICATION. WE ARE HOPING TO RECEIVE THIS IN THE NEXT WEEK AND WILL SUBMIT ONCE RECEIVED

Greyter is discounting systems to $3550 for the Sustainable Water Solution Grant Application

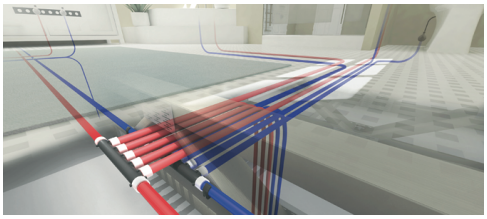
Exhibit C

Map of the Lennar Development

To See How The Greyter HOME works go to: greyter.com/greyter-home-video/



Significant savings with the Sustainable Water Solution



~ 9,300 G + ~ 1,000 G + ~9,400 G

Single family home of 4 saves ~ 20,000 G annually

Greyter HOME™

BEST OF IBS AWARDS WINNER 2017 BEST GREEN BUILDING PRODUCT

Winner of the 2017 National Association of Home Builders (NAHB) Best Green Building Product

The Greyter HOME™ Residential Water Recycling System

Enabling builders, municipalities and homeowners to create water-efficient communities.

Achieve high-density development and minimize the impact to water resources

The Greyter HOME™ was designed in collaboration with several top US homebuilders, resulting in a residential water recycling system that meets the most important requirements for large-scale home development, while providing homeowners with a reliable, long-term water-saving solution. These features include:

Compact size

Only 28 inches wide, 65 inches tall and 19 inches deep, the compact Greyter HOME can be installed in a discreet location, such as a basement, garage or mechanical room. Unlike many residential water recycling systems, the Gretyer HOME has no bulky outdoor or underground components to install or maintain.

Quick and easy installation

The Greyter HOME requires only five plumbing connections and can be installed by a professional plumber in about an hour. Rough-in plumbing is equally simple and, in most cases, can be completed in two to four hours.

Delivers near-potable water quality

Designed to meet stringent regulatory standards for indoor water reuse, the Greyter HOME produces clear, odor-free, microbiologically safe water for toilet flushing.

Affordable

The Greyter HOME is one of the lowest cost, advanced treatment systems for residential water recycling. Moreover, the system can help builders gain municipal incentives for residential water recycling such as greater home density, lower water connection fees, accelerated permits and development credits.

Minimal maintenance

Designed to provide reliable performance with little maintenance, the Greyter HOME requires only one service call per year to fill chlorine and exchange adsorption media. This can be completed by homeowners, or by a local service technician.

Low energy requirements

For a typical family of four, the Greyter HOME requires only about 185 kWh of electricity per year to treat and pump recycled water for toilet flushing.

Highly efficient water recycling – up to 25 per cent

The low-maintenance ultrafiltration membrane enables the Greyter HOME to efficiently recycle greywater and reduce residential demand for potable water by as much as 25 per cent.

"The Greyter HOME enables new-home builders to easily achieve significant water conservation targets with an affordable, compact, easy-to-install appliance."

- Mark Sales
Co-founder and CEO
Greyter Water Systems

Designed with builders, to meet the needs of growing communities

The Greyter HOME is a compact, fully automated water recycling system that can help reduce indoor water consumption by as much as 25 percent in a family home. The system captures water from showers and bathtubs, treats it to a near-potable quality and provides clear, odor-free water to meet a home's toilet flushing demands.

Many municipalities are recognizing the benefits of residential water recycling to conserve regional water supplies and create water-efficient communities, especially in areas where growth is constrained by limited water resources.

It makes no sense to flush toilets with perfectly good drinking water. Only two showers per day can provide enough water to the Greyter HOME to meet the toilet flushing needs of a family of four.

The Greyter HOME plays an important part in helping municipalities implement long-term, sustainable water management strategies and its use in new home construction could enable builders to achieve municipal incentives for water conservation such as:

- Lower water connection fees;
- Accelerated permit approvals;
- Development credits;
- Greater density of homes in a development project.

Over the long term, the Greyter HOME also contributes to a sustainable water management strategy for the community and helps homeowners save money on water and sewer costs.

Advanced technology, fully automated operation

The Greyter HOME incorporates advanced screening, filtration, odor-removal and system-control technologies that operate automatically and require little maintenance.

The first step in the process removes hair and large solids in a patent-pending, self-cleaning pre-filter. Water then passes through an ultrafiltration membrane that removes 99.99% of microorganisms, as well as soap and smaller solids. Following that, adsorption media removes remaining soap, color and odor before the water enters a storage tank and chlorine is added. A touchpad controller handles all aspects of system operation and provides homeowners with performance data, maintenance reminders and tutorials.

Proudly manufactured in North America

Greyter Water Systems manufactures the Greyter HOME at state-of-the-art facilities in Grassie, Ontario, Canada and Sidney, Nebraska, USA. These plants incorporate the best practices, efficiencies and expertise that Greyter has developed after more than a decade of designing and building its highly sought-after water recycling systems for commercial buildings.

During this time, the Greyter team has designed, delivered and supported water recycling projects for demanding and challenging applications such as military installations, hotels, schools, condominiums and office buildings. With scalable, responsive manufacturing capacity and talented design and delivery teams, the Greyter plants are well equipped to meet the demand for Greyter HOME systems in residential development projects throughout North America.

Comprehensive warranty and support

The Greyter HOME system is covered by a comprehensive two-year warranty for parts and labor. A network of local representatives is available to provide a full range of services including system installation, maintenance, technical support and parts supply. Contact Greyter Water Systems to learn more about regional service and support partners.

Greyter HOME system specifications

Dimensions	65″ H x 28″ W x 19″ D (165.1 cm H x 71.1 cm W x 48.3 cm D)
Plumbing connections	› 1 – 1½″ ABS or PVC (vent) › 2 – 2″ ABS or PVC (greywater inlet, sanitary) › 1 – ¾″ PEX or copper (toilets) › 1 - ½″ PEX or copper (city water)
Holding capacity	52 gallons (197 liters)
Electrical connection	One single gang 120 V, 15 A
Electricity usage	185 kWh annually (approximate)

Greyter® Water Systems

Greyter Water Systems
Manufactured in Sidney, NE, USA and Grassie, ON, Canada
info@greyter.com | www.greyter.com

Toll Free in North America: 1-844-GREYTER (473-9837)
Outside North America: 1-416-883-2411

Certified to NSF/ANSI Standard 350

NSF 350 Certification

The Greyter HOME™ by Greyter Water Systems is certified to NSF 350.

The NSF/ANSI 350 standard establishes material, design, construction and performance requirements for onsite residential and commercial water reuse treatment systems. They also set water quality requirements for the reduction of chemical and microbiological contaminants for non-potable water use.

During its 6-month testing period, the Greyter HOME™ was dosed daily with a greywater cocktail that contained raw wastewater, secondary effluent, shampoo, conditioner, soap, toothpaste, bath cleaner and test dust and delivered nearly 30 gallons (~113 L) of processed water per day. The Greyter HOME™ did not require any user maintenance during the testing period and maintained the following stringent water quality requirements:

Criteria	NSF 350 Standard (Class R)	Greyter HOME™ Results
CBOD5 (mg/L)	10	< 2*
TSS (mg/L)	10	< 3*
Turbidity (NTU)	5	0.67
E.Coli (CFU/100 mL)	14	1
Residual Chlorine (mg/L)	0.5 - 2.5	0.95
pH (SU)	6 - 9	7.7

*Note: Average test results less than testing detection limit

Greyter HOME™

The Greyter HOME™ is a one-of-a-kind solution that not only meets the NSF 350 standard for residential greywater reuse, but also meets the following requirements:

- Cost effective (< $4,000 US)*
- User friendly (annual maintenance)
- Low energy consumption (~185 kWh annually)
- Small foot print (19″ D x 28″ W x 65″ H)
- Easy to install (~1.5 hours)
- Superior water quality

*based on production builder volume pricing

Most U.S. jurisdictions require NSF 350, as it is the emerging water quality standard for residential greywater reuse.

The Greyter HOME™ is designed to capture only shower and bath water to be reused for toilet flushing. Toilets make up 20-25% of indoor water consumption. It makes no sense to flush toilets with perfectly good drinking water, and now with the Greyter HOME™ you don't have to!

Make your Home a Greyter HOME™. Now NSF 350 Certified.

Greyter® Water Systems

Greyter Water Systems Inc.
Manufacturing Facilities: Grassie, ON, Canada and Sidney, NE, USA
info@greyter.com | www.greyter.com
Toll Free in North America: 1-844-GREYTER (473-9837)
Outside North America: 1-416-883-2411

uponor

Plumbing systems

50 YEARS OF QUALITY AND RELIABILITY

A global pioneer in intelligent plumbing solutions, Uponor has been providing PEX piping systems longer than anyone in North America, so you can feel confident the system you're installing is proven to perform for decades of reliability.

With more than 17 billion feet of piping systems in structures around the globe, Uponor is the superior PEX system professionals trust.

	Uponor	PEX-b
Crosslinking	80%+	65% to 70%
Kink reparable	✓	✗
Tightest bend radius	✓	✗
Larger ID ProPEX® fittings compared to crimp insert	✓	✗
Most comprehensive offering of ASTM F1960 fittings	✓	✗
Extruded expansion rings	✓	✗
Strongest expansion fitting connection	✓	✗
Engineered polymer (EP) fittings made in the USA	✓	✗
Gold Seal certification for freeze-thaw resistance	✓	✗
Superior resistance to stress-crack propagation	✓	✗
No micro-cracking during expansion	✓	✗

CHLORINE RESISTANCE

Uponor PEX-a pipe is tested and listed to ASTM F2023, achieving the highest chlorine resistance rating of '5' per the industry standard.

BUILDER ADVANTAGES

SUPERIOR DURABILITY
The higher crosslinking in Uponor AquaPEX® pipe results in greater shape memory — the pipe's ability to return to its original shape after expansion. This ensures no micro-cracking during expansion (which can occur with PEX-b pipe), and also allows for faster, stronger expansion fitting connections.

CERTIFIED FOR STRENGTH
Uponor PEX-a's durability garnered the Water Quality Association (WQA) Gold Seal certification for the greatest resilience in freezing conditions, ensuring protection when it's needed most. Plus, its unique thermal memory allows for kink reparability, which is not possible with PEX-b and PEX-c pipe.

SERVICE AND SUPPORT
Backed by a 25-year transferable limited warranty and supported by a trained staff of field technicians and a nationwide distribution network, Uponor is the reliable, dependable partner you can count on.

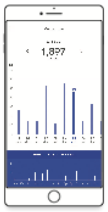
Protect your home, conserve water and save money with Phyn Plus

Prevent Leak Damage

Auto Shutoff can turn off your water in event of a catastrophic leak, even when you're not there.

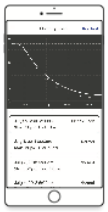
Get Leak Alerts

Receive detailed mobile notifications as soon as any leak is detected.



Conserve Water

Monitor how much water you family uses every month, week, day or hour.



Maintain Your Plumbing

Daily Plumbing Checks catch tiny leaks and pressure irregularities before they become big issues.

www.phyn.com

Phyn**Plus**

Smart Water Assistant + Shutoff

Phyn Plus: Frequently Asked Questions

What is Phyn Plus?

Phyn Plus is a single-device, whole home leak detection system, with remote and automatic shutoff capability. It's installed on the incoming water line to the home, monitors the entire plumbing system from that point, and requires no additional sensors or monitoring fees to protect the home from water leaks, wasted water and unintended water use.

How does Phyn Plus work?

Phyn Plus uses micro-pressure wave sensing to identify and fingerprint the individual fixtures in the home. By measuring pressure 244 times a second, recognizing the signatures of the fixtures, and coupling that with flow details, temperature and spectrum analysis, Phyn can recognize the difference between normal water use and potential leaks. Using machine learning and AI, Phyn continues to learn each individual home to provide confident leak detection while minimizing false leak alerts.

What types and sizes of pipes does Phyn Plus work with?

Phyn Plus is compatible with virtually all common plumbing pipe materials that are used in homes (copper, CPVC, PEX, etc.) and works with supply pipe sizes from 3/4" to 1-1/4". A review of the hydraulic demand is recommended for 1" and larger pipe sizes to ensure compatibility with high demand systems. Phyn Plus has a Cv of 8.5 and a maximum flow of 25 gallons per minute. Most water meters have very similar operating parameters and other devices, such as water softeners or filtration systems, often impact plumbing performance even more significantly.

Does Phyn Plus restrict flow when used with 1" or 1-1/4" pipe?

The impact of Phyn Plus is roughly equivalent to that of a ¾" water meter. In most cases, the temporary reduction in diameter through Phyn Plus has minimal impact on water delivery because the restriction is relatively short when compared to the length of the larger diameter pipe. The resulting effect is a temporary increase in the velocity of flow through the device, which is then relieved when transitioning back to the larger diameter pipe. This does result in a pressure loss through the device so ensuring adequate pressure for the most remote fixture(s) is important. Minimizing the number of fittings, especially elbows, will help to minimize the pressure loss when Phyn Plus is installed. Ideally, install Phyn Plus in a straight line with the supply piping.