Next Generation Water Treatment

(Residential Drinking Water)

Simple

Effective

Eco-Friendly

Legal

Good for Business

+

Economical

Marketable

CASCADIAN WATER

Next Generation Water Treatment

(Residential Drinking Water)

Our objectives today include understanding:

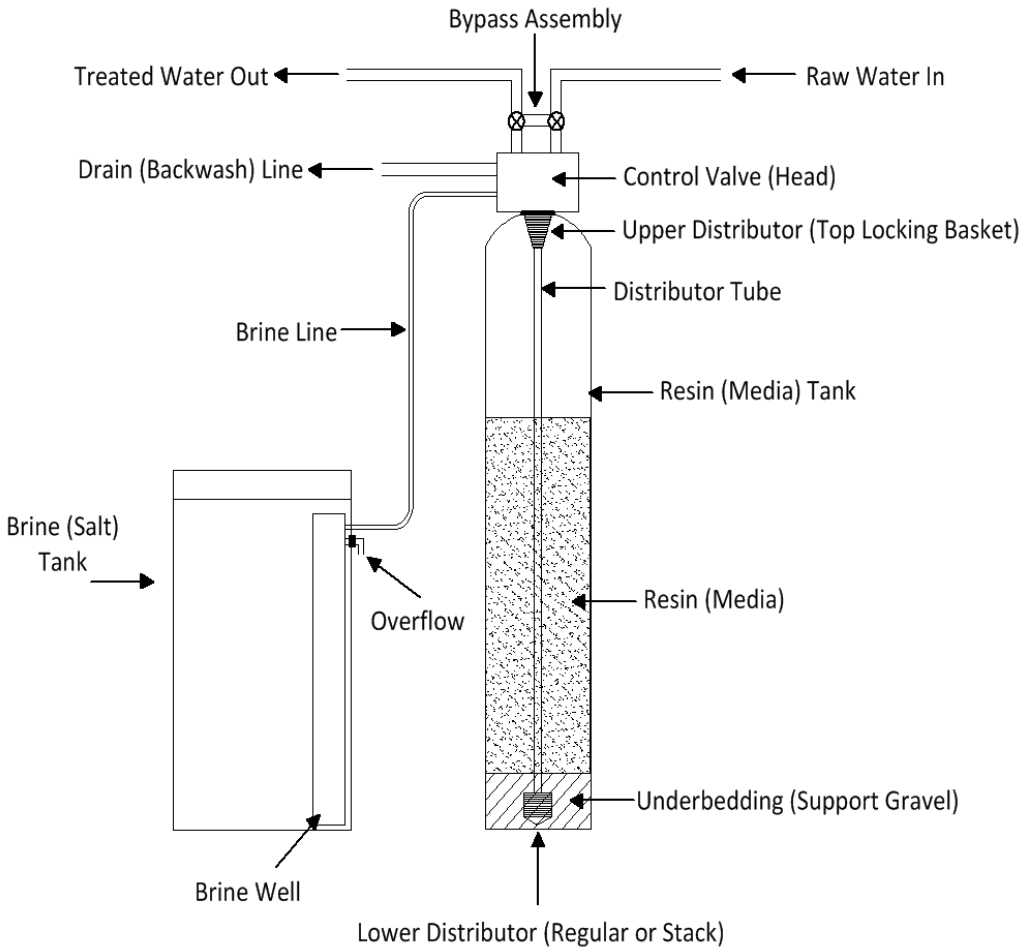
1. The forces leading to innovative treatment systems

2. The technologies innovative treatments are using

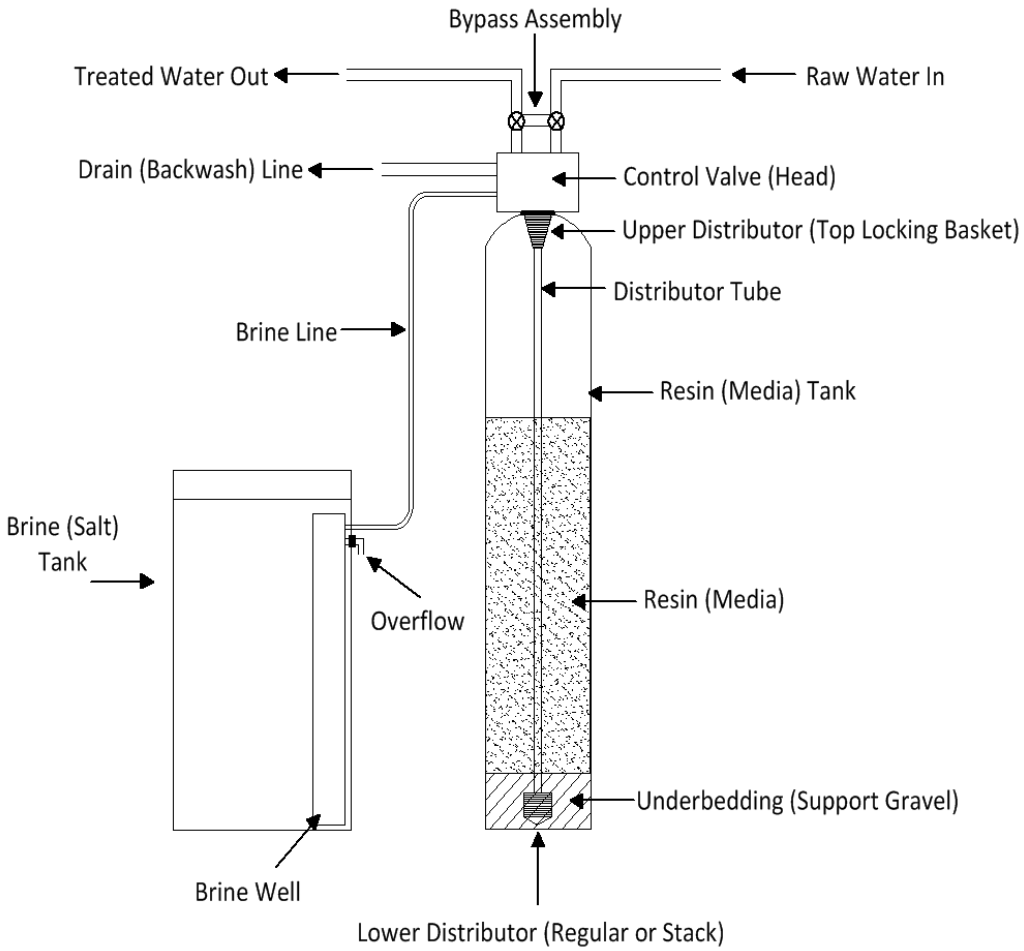
3. The differences in the technologies

4. Why these new technologies are good for business

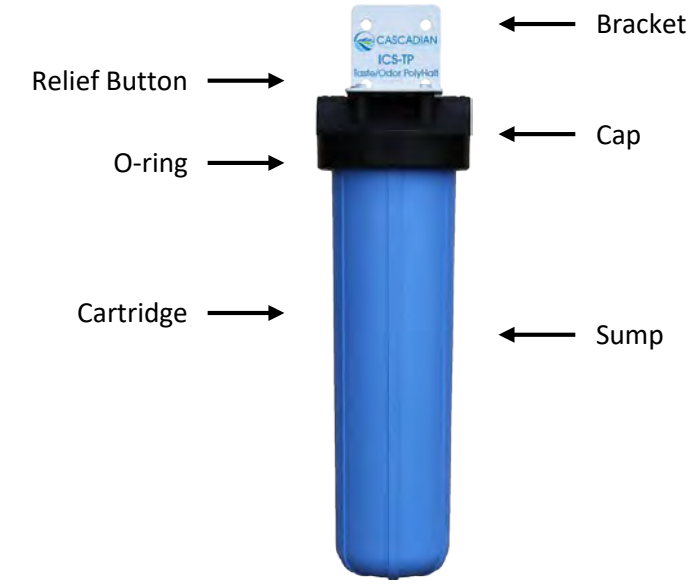
Salt Softener



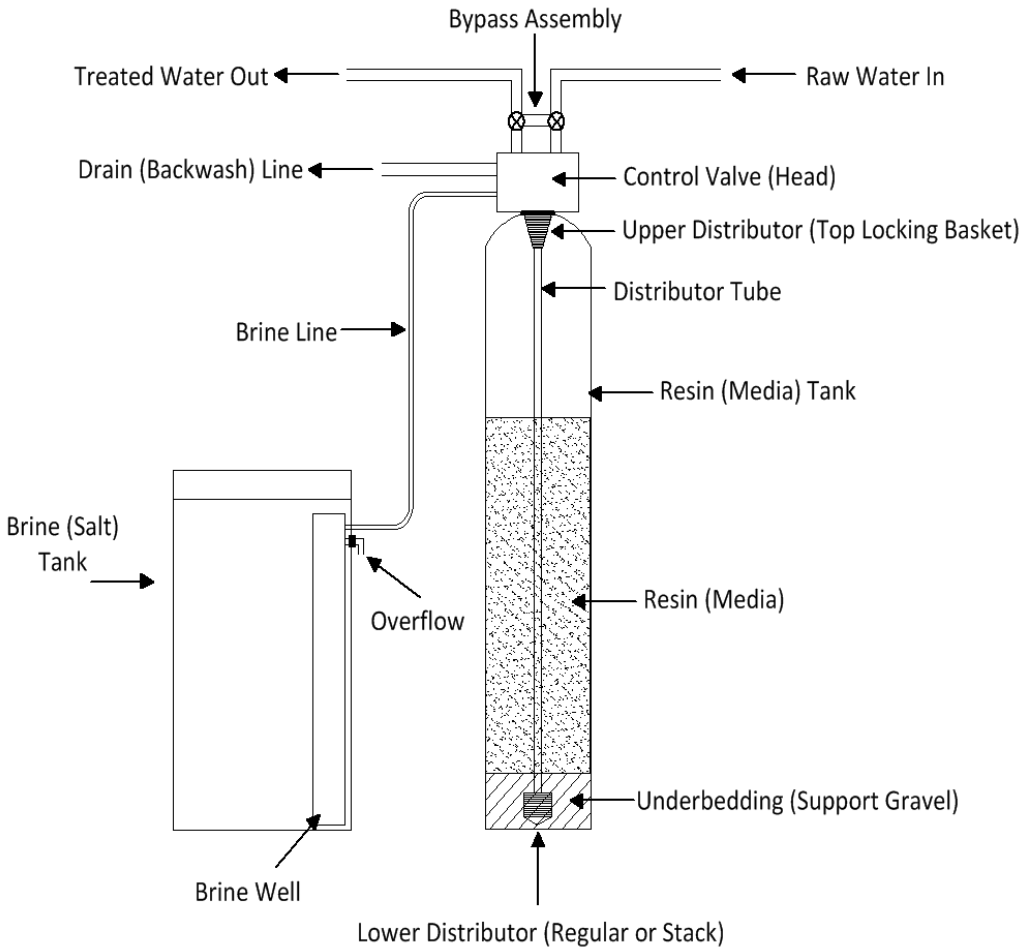
Salt Softener



Saltless Softener



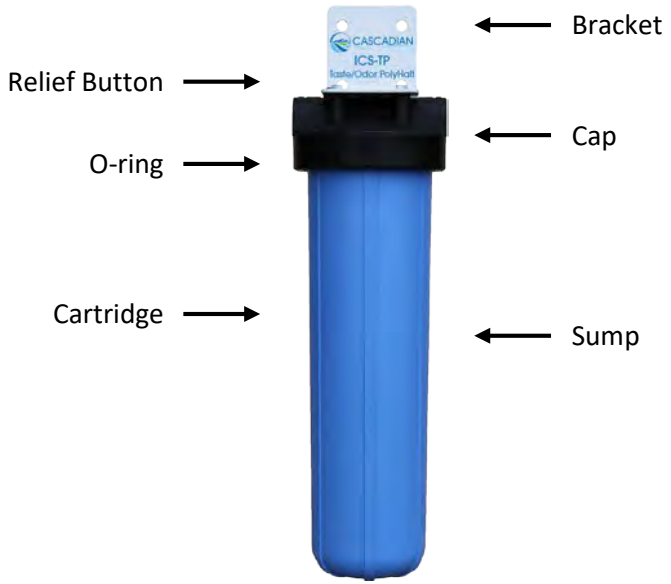
Salt Softener



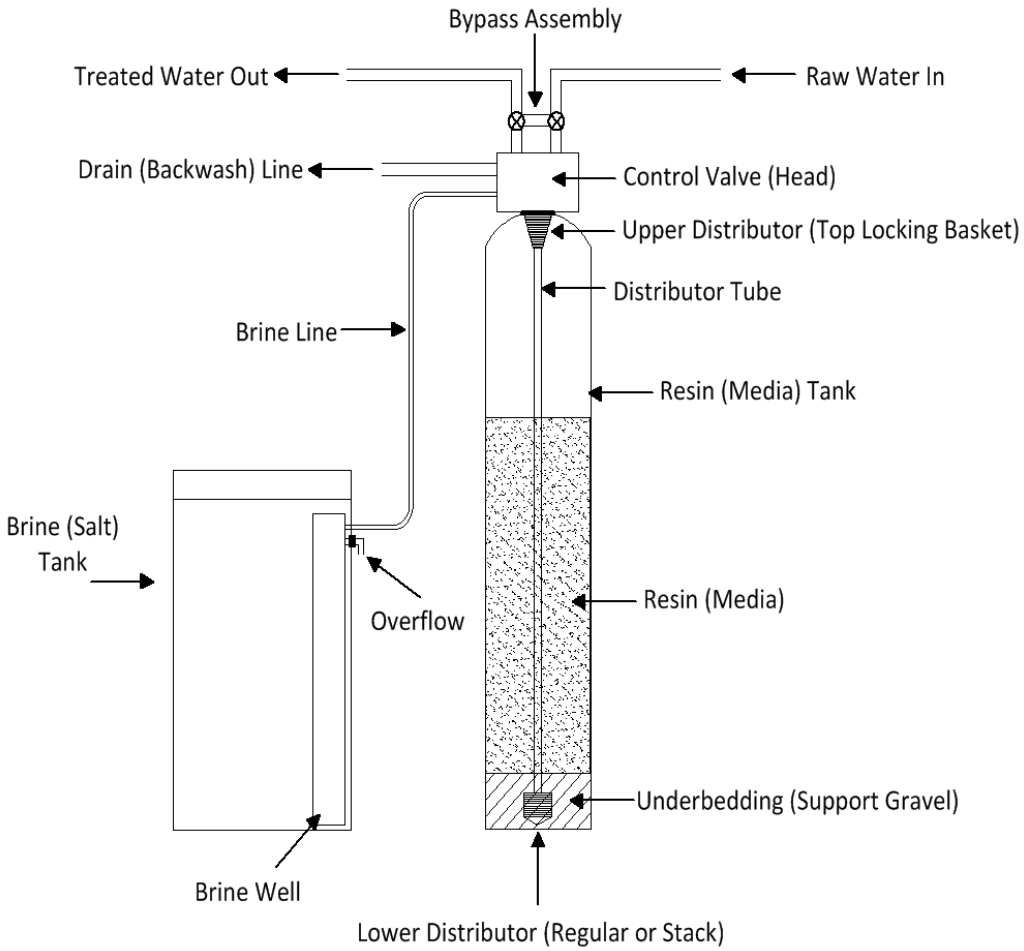
- Complicated
  - Requires Specialized Knowledge to Install, Service and Maintain
  - Dozens of parts
- More Expensive
  - To buy, install and maintain
- Not Eco-friendly
  - Uses salt, produces waste water, and requires power
- Larger and sits on the floor

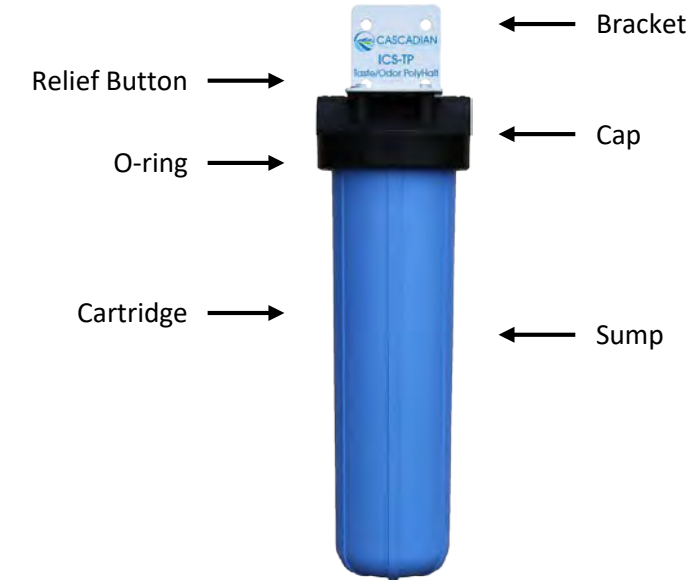
Saltless Softener

- Simple
  - No Specialized Knowledge to Install, Service and Maintain
- Lower Cost
  - To buy, install and maintain
- Eco-friendly
  - No salt, waste water or power
- Smaller and hangs on the wall



Traditional vs. Next Generation Water Treatment





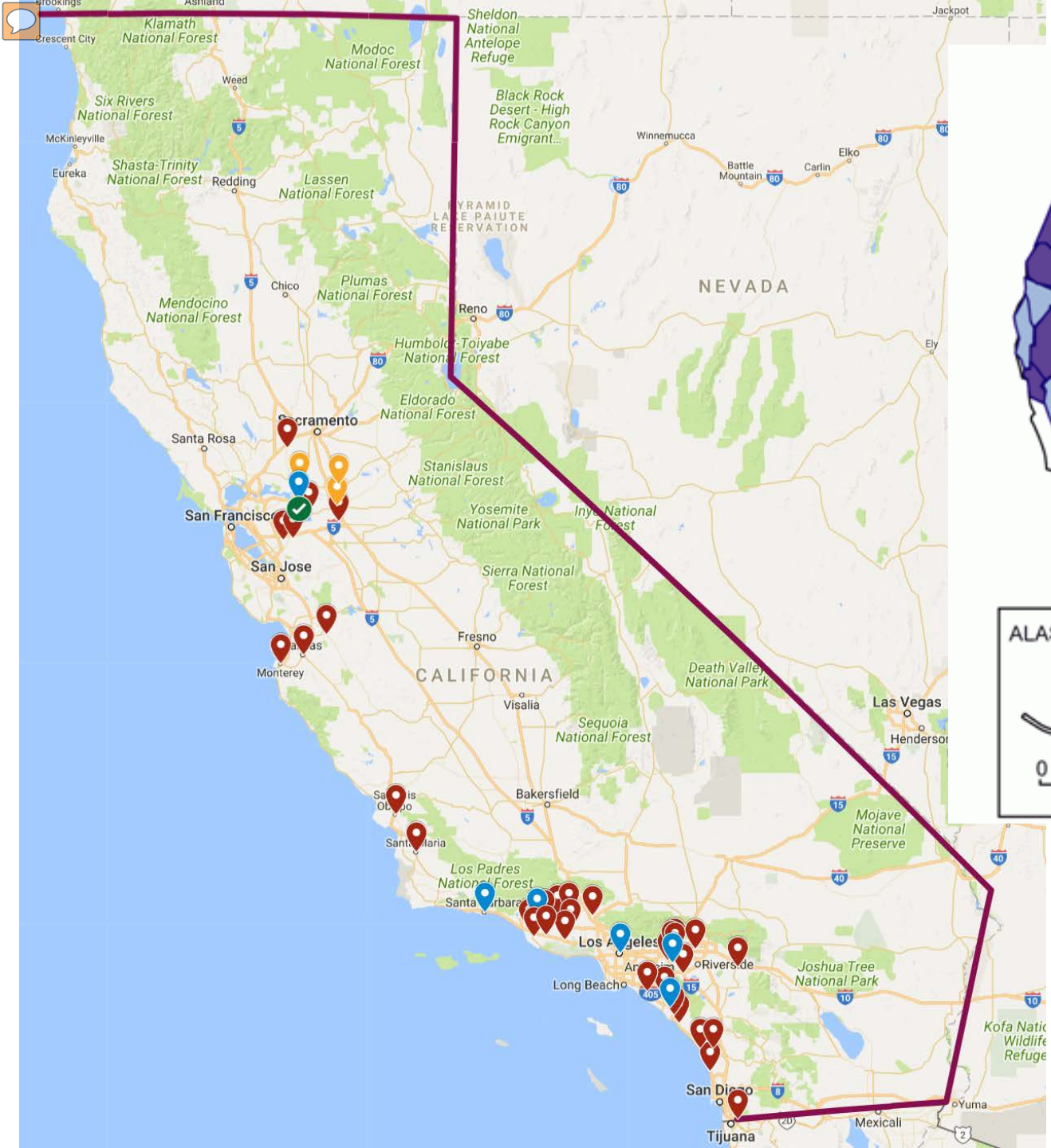
Why Water Treatment?

- Consumers
  - Solves problems for customers
  - Better quality of life

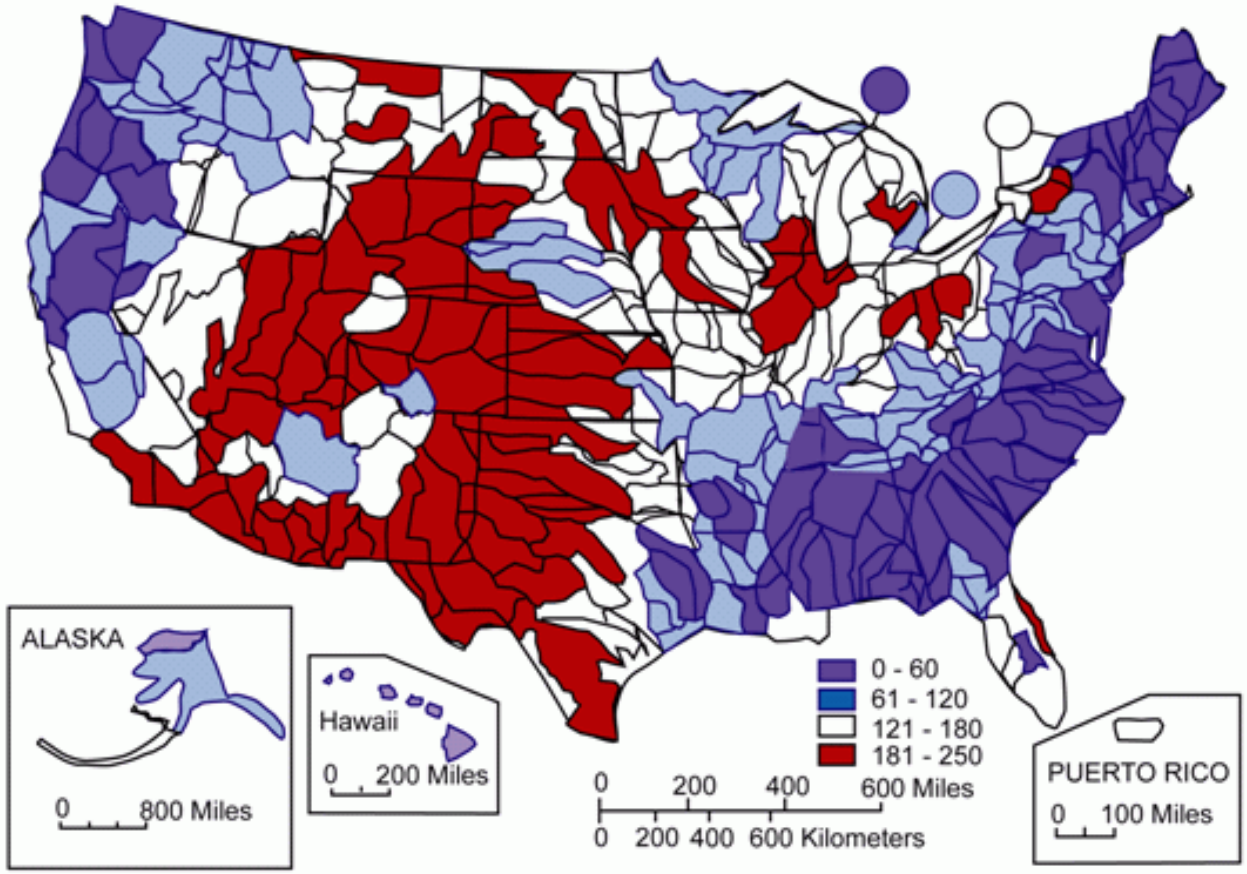
- Installers and Distributors
  - Grow or Expand Business
    - Services
    - Customer Base
    - Revenue

Why Alternatives to Salt Based Softeners?

- Government Regulations
  - Environmental Issues and salt based softener bans and discharge restrictions



CONCENTRATION OF HARDNESS AS CALCIUM CARBONATE, IN MILLIGRAMS PER LITER



Why Alternatives to Salt Based Softeners?

- Government Regulations
  - Environmental Issues and salt based softener bans and discharge restrictions
- High Costs
  - Purchase, installation and operation
  - Environmental
  - Maintenance – time and money
  - Space Requirements
- Changing Consumer Attitudes
  - Low cost high quality water that are smaller and quieter
  - Environmental concerns
  - Simple low maintenance
  - No slippery feeling

Technologies Available
(Focusing on Softening Alternatives)

- Physical Category
  - Electro Deionization
  - Nano Membrane Filtration
  - Coil Around Pipe
  - Magnet Around Pipe
  - Nucleation Assisted Crystallization (NAC)

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- Physical Category
  - Electro Deionization
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  - Nucleation Assisted Crystallization (NAC)

- Chemical Category
  - PolyHalt® Polyphosphate Sequestration

What is Hard Water?

(Source = WQA Web Site)

Hard Water ACTS Hard – Soft Water ACTS Soft

Let's break it down: Hard Water -

- Is hard to wash in, referring to the soap wasting properties of hard water.
- Prevents soap from lathering.
- Causes a curdy precipitate (soap scum).
- Typically causes the buildup of hardness scale (such as seen in cooking pans).
- Is responsible for most scaling in pipes and water heaters and causes numerous problems in laundry, kitchen, and bath.

If you eliminate these problems is the water still hard?

What is Hard Water?

(Source = WQA Web Site)

Industry definition:

- Hardness is usually expressed in grains per gallon (or ppm) as calcium carbonate equivalent.

Note:

Grains per gallon measurement –

Does tell you the concentration of hardness minerals

Does NOT tell you how the Water ACTS

Hard Water ACTS Hard – Soft Water ACTS Soft

What is Soft Water?

(NO Characteristics of Hard Water)

Let's take a look: Hard Water - **Soft Water,**

- Is hard to wash in, referring to the soap wasting properties of hard water.
- **Is easy to wash in, use less soap and clean faster and easier.**
- Prevents soap from lathering.
- **Allows soaps to make more lather.**
- Causes a curdy precipitate (soap scum).
- **Doesn't form a curdy precipitate.**
- Typically causes the buildup of hardness scale (such as seen in cooking pans).
- **Doesn't cause the buildup of hardness scale.**
- Is responsible for most scaling in pipes and water heaters and causes numerous problems in laundry, kitchen, and bath.
- **Doesn't cause scaling and these other problems**

The Best Next Generation Water Treatment Is -

Simple
Effective
Eco-Friendly
Legal
Good for Business
+
Economical
Marketable

Compare Hard Water Treatments

Treatment	Saltless	Removes Hardness Minerals	No Waste Water	No Power Required	Low Operation & Maintenance	Smaller Size	Lower Cost	No Specialized Knowledge Required
Salt Softener		●						
Electro Deionization	●	○						
Nano Membrane Filter	●	○						
Coil Around Pipe	●		●		●	●	●	●
Magnet Around Pipe	●		●	●	●	●	●	●
Nucleation Assisted Crystallization	●		●	●	●	●	●	●
PolyHalt® Sequestration	●		●	●	●	●	●	●

Legend: Blank = False ● = Yes ○ = Partially

Compare Saltless Softeners					
Treatment	Simple	Eco-Friendly (no salt, power or waste water)	Legal where Salt Softeners are Banned or Restricted	Doesn't Make Water Feel Slippery	3rd Party Certified
Electro Deionization		○ Power & Waste	○ Waste	●	
Nano Membrane Filter		○ Power & Waste	○ Waste	●	
Coil Around Pipe	●	○ Power	●	●	
Magnet Around Pipe	●	●	●	●	
Nucleation Assisted Crystallization	●	●	●	●	○
PolyHalt® Polyphosphate Sequestration	●	●	●	●	●

Legend: Blank = False ● = Yes ○ = Partially

Compare Top Saltless Softeners							
Treatment	Simple	Eco-Friendly	Legal where Salt Softeners are Banned or Restricted	3rd Party Certified	Low Operation & Maintenance Costs	Smaller Size	Lower Cost
Nucleation Assisted Crystallization	●	●	●	○	●	●	●
PolyHalt® Polyphosphate Sequestration	●	●	●	●	●	●	●

These technologies do not remove the hardness so how do they soften the water?

They change the potential for the hardness minerals to behave:

Treated minerals do not;

- Make water hard to wash in / with
- Cause a curdy precipitate
- Prevent soap from lathering
- Cause the buildup of hardness scale
- Cause scaling in pipes and water heaters and cause numerous problems in laundry, kitchen, and bath

Compare Top Saltless Softeners						
Treatment	Max. Hardness	Also Treats Iron, Manganese, Low pH & Silica	1 System Multiple Treatments?	System Maint.	Install Location	When Developed
Nucleation Assisted Crystallization	75 gpg			Media 1-3 years	Floor	2000's
PolyHalt® Polyphosphate Sequestration	100 gpg	●	●	Filter 1 Year	Wall	1920's & 2000's

Legend:
Blank = False ● = Yes

Nucleation Assisted Crystallization Softener

PolyHalt® Sequestration Softener

Which Alternative Should You Use?

- All technologies have their pros and cons including:
  - Conditions for operating / water quality parameters
  - Complexity of treatment
- Consider
  - Customer needs / preferences
  - The manufacturer
  - Independent 3rd party certification
- Test the water
- Use the most suitable product

Other Innovations Changing Water Treatment

Whole home or business Cartridge Based treatment for:

- Arsenic
- Bacteria
- Hydrogen Sulfide (rotten egg odor)
- Iron Bacteria
- Low pH and
- Silica

Why Next Generation Water Treatment is Good for Consumers

- It is simple to understand – no special knowledge required
- It is quiet
- It is low Maintenance
- It is smaller and costs less to buy, ship and install
- It is Eco-Friendly
- It is legal where salt based treatment is not
- Their home is easier to clean and maintain
- They save Time and Money
- It solves their water quality problems and –
- It doesn't make the water feel slippery

Why Next Generation Water Treatment is Good for Business

- It is simple
  - To understand – No special knowledge required
  - To Install
  - To Explain to customers
- It is smaller and costs less to buy, ship and install
- It is legal where salt based treatment is not
- It creates a Recurring Revenue Stream

What did we learn today?

1. Name different technologies challenging traditional treatment systems

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2. Name benefits and differences between Next Generation and traditional treatment systems

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3. What well water problems are treatable with cartridge based treatment systems?

What did we learn today?

1. Name different technologies challenging traditional treatment systems
2. Name benefits and differences between Next Generation and traditional treatment systems
3. What well water problems are treatable with cartridge based treatment systems?
4. Reasons to add drinking water treatment services to your business?

What did we learn today?

5. How do you pick the best treatment?

Summary

Water Treatment is Changing
Simpler and Easier
Eco-Friendly
Legal Everywhere
Good for Business
+
Economical
Marketable

Limited Time Offers from Cascadian Water

Through December 2017

To get a copy of this presentation at
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