

evolve™  
TECHNOLOGIES

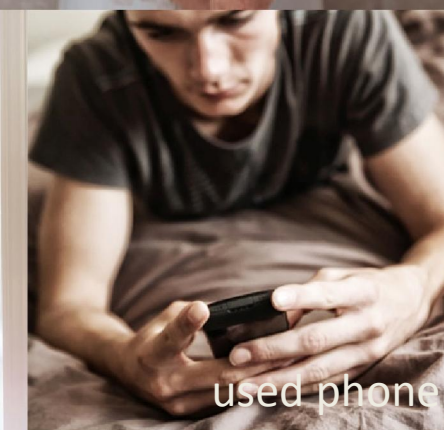
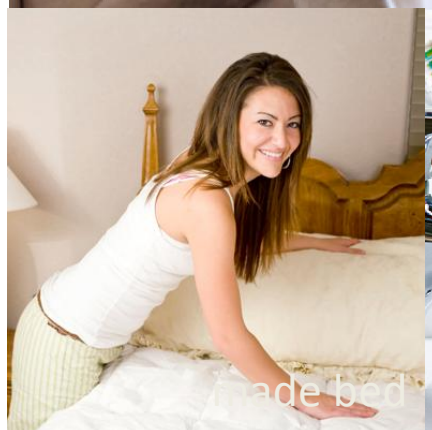
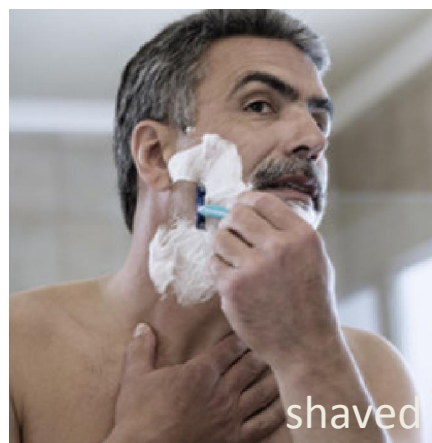
Eliminating  
Behavioral Waste  
Without Requiring  
Behavior Change



Consider how  
**hard it is to change yourself**  
and you'll understand what  
**little chance**  
you have in trying to  
**change others.**

~ Benjamin Franklin

## Have You Or A Family Member Ever \_\_\_\_\_ While Waiting For The Shower To Get Warm?



## Our Behavior Greatly Impacts The Amount Of Water & Energy We Use For Showering



71%

**Leave Shower**

And Perform Other Tasks

Evolve Technologies Shower Survey 2008

Lawrence Berkeley National Lab: Lutz 2011 "Water And Energy Wasted During Residential Shower Events"

## Our Behavior Greatly Impacts The Amount Of Water & Energy We Use For Showering



71%

**Leave Shower**  
And Perform Other Tasks



52%

**Perform Multiple Tasks**  
As Part Of Their Warm-Up Routine



Evolve Technologies Shower Survey 2008

Lawrence Berkeley National Lab: Lutz 2011 "Water And Energy Wasted During Residential Shower Events"



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**60%**

**Tasks Dictate Time Away**  
Away From Shower

Evolve Technologies Shower Survey 2008  
Lawrence Berkeley National Lab: Lutz 2011 "Water And Energy Wasted During Residential Shower Events"

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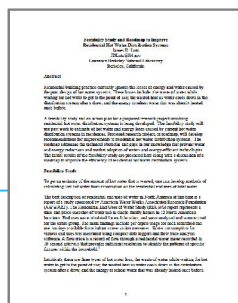
**60%**

**Tasks Dictate Time Away**  
Away From Shower

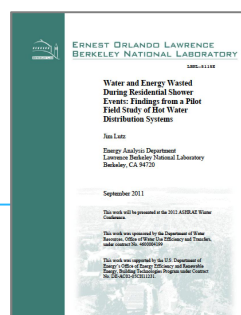
**20% - 30% Of A Shower Is Wasted  
Before Bathing Begins**

Evolve Technologies Shower Survey 2008 Lawrence Berkeley National Lab: Lutz 2011 "Water And Energy Wasted During Residential Shower Events"

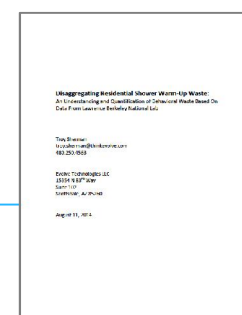
# Lawrence Berkley National Lab Paper & Data Analysis



**2004**  
**Feasibility Study To Improve Hot Water Distribution**



**2011**  
**Water & Energy Wasted During Residential Shower Events**

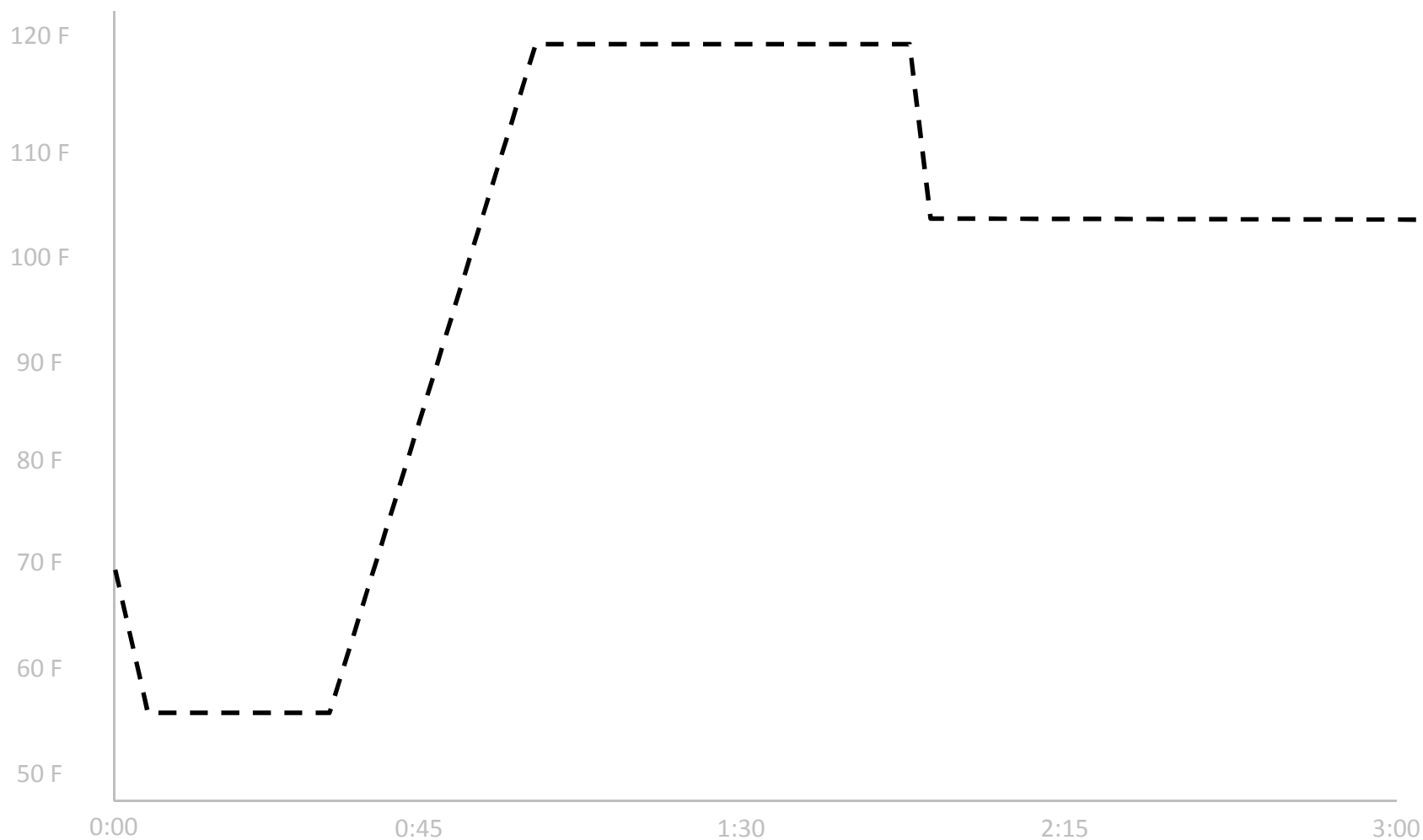


**2014**  
**Disaggregating Residential Shower Warm-Up Waste**



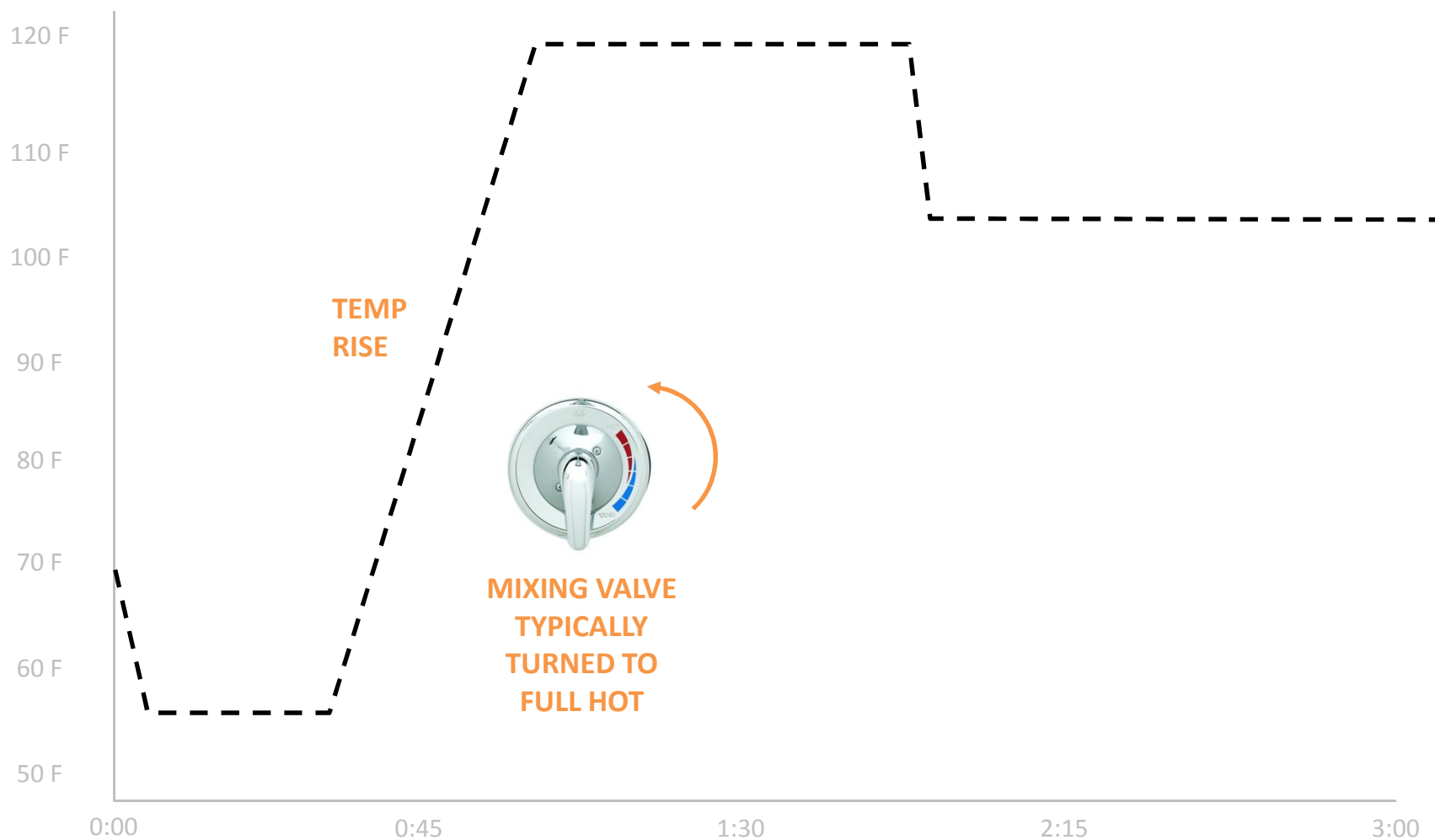
## Anatomy Of A Shower Warm-Up – Lawrence Berkley National Lab Data Analysis

SOURCE: 2014 Disaggregating Residential Shower Warm-Up Waste – An Understanding and Quantification of Behavioral Waste Based On Data From Lawrence Berkeley National Lab



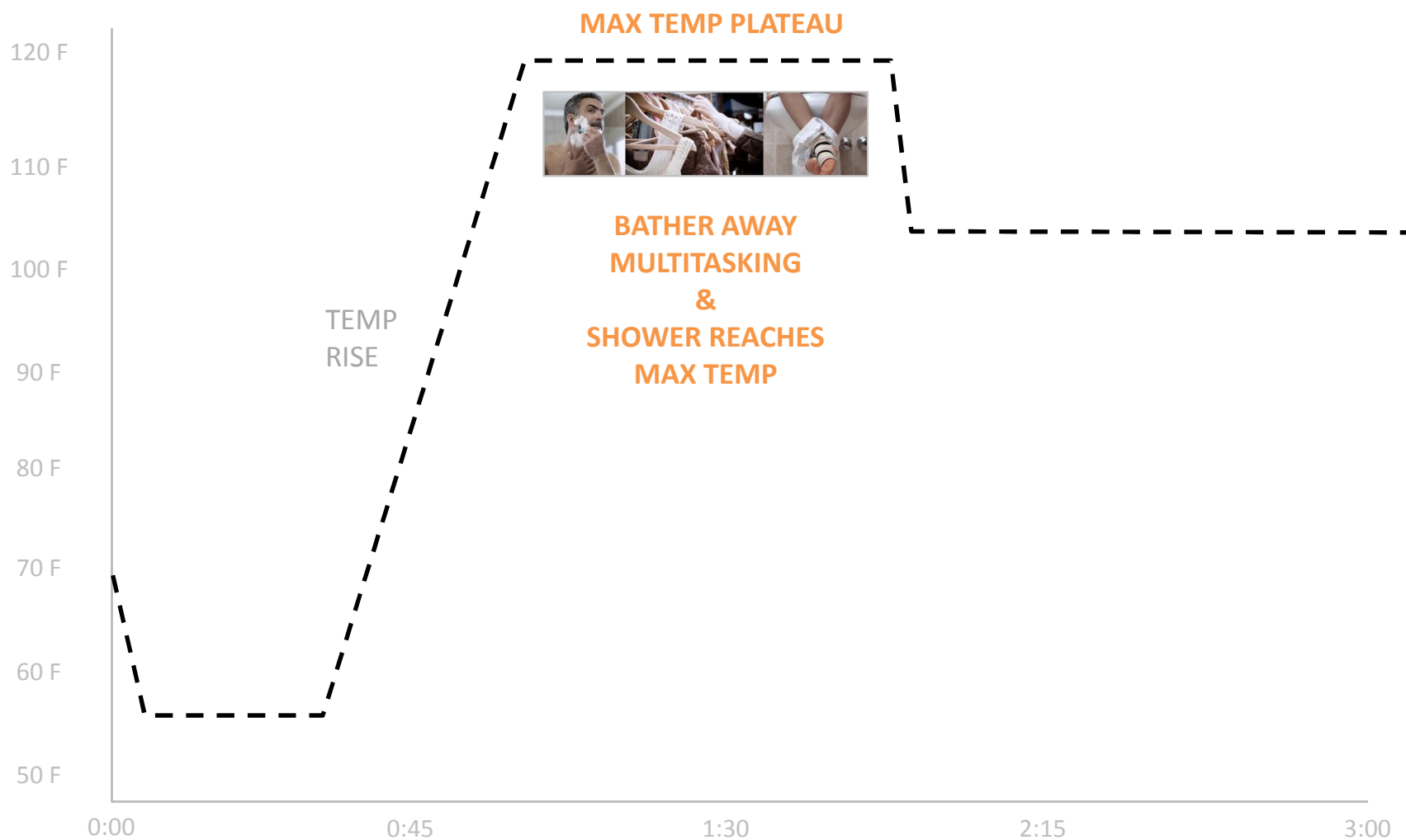
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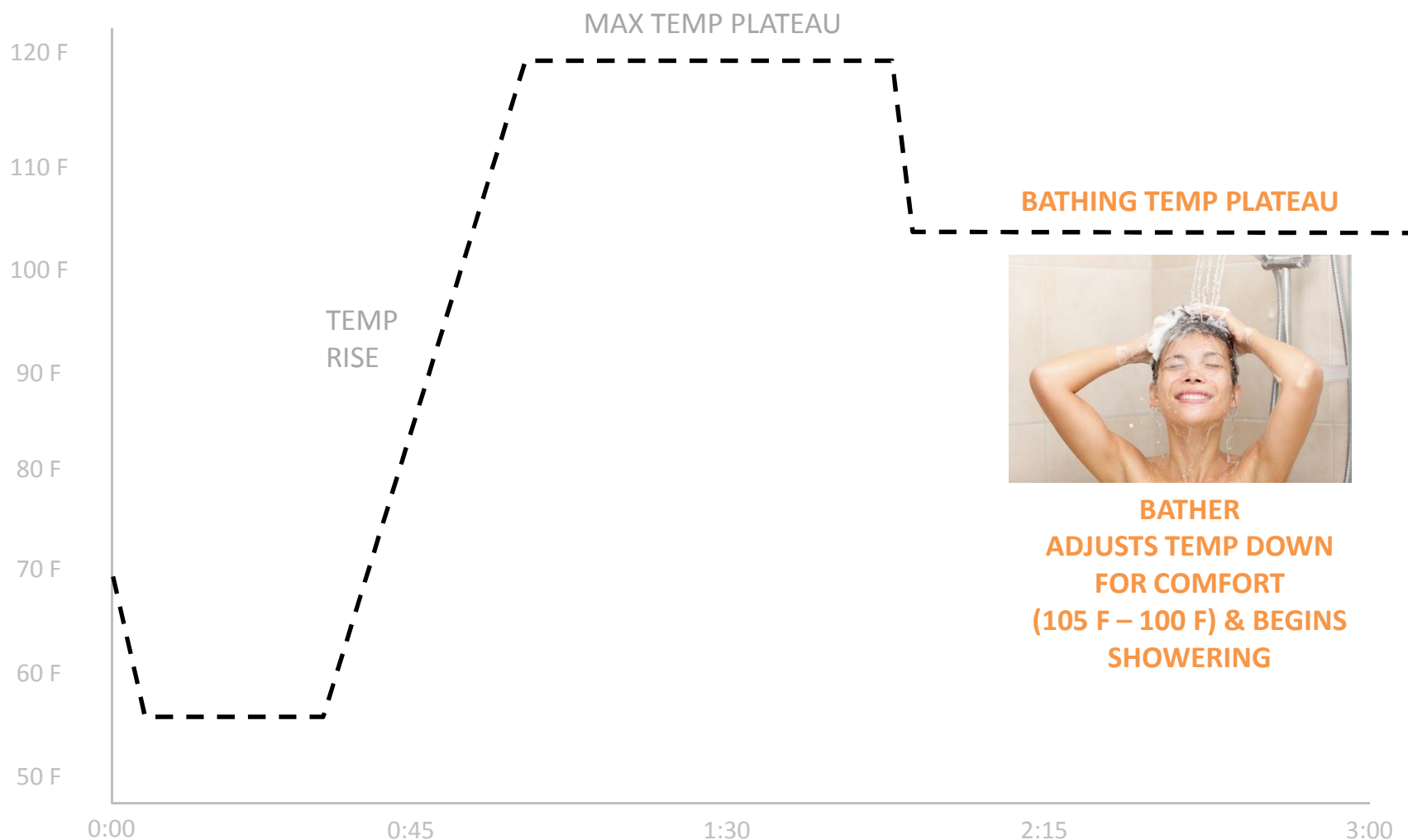
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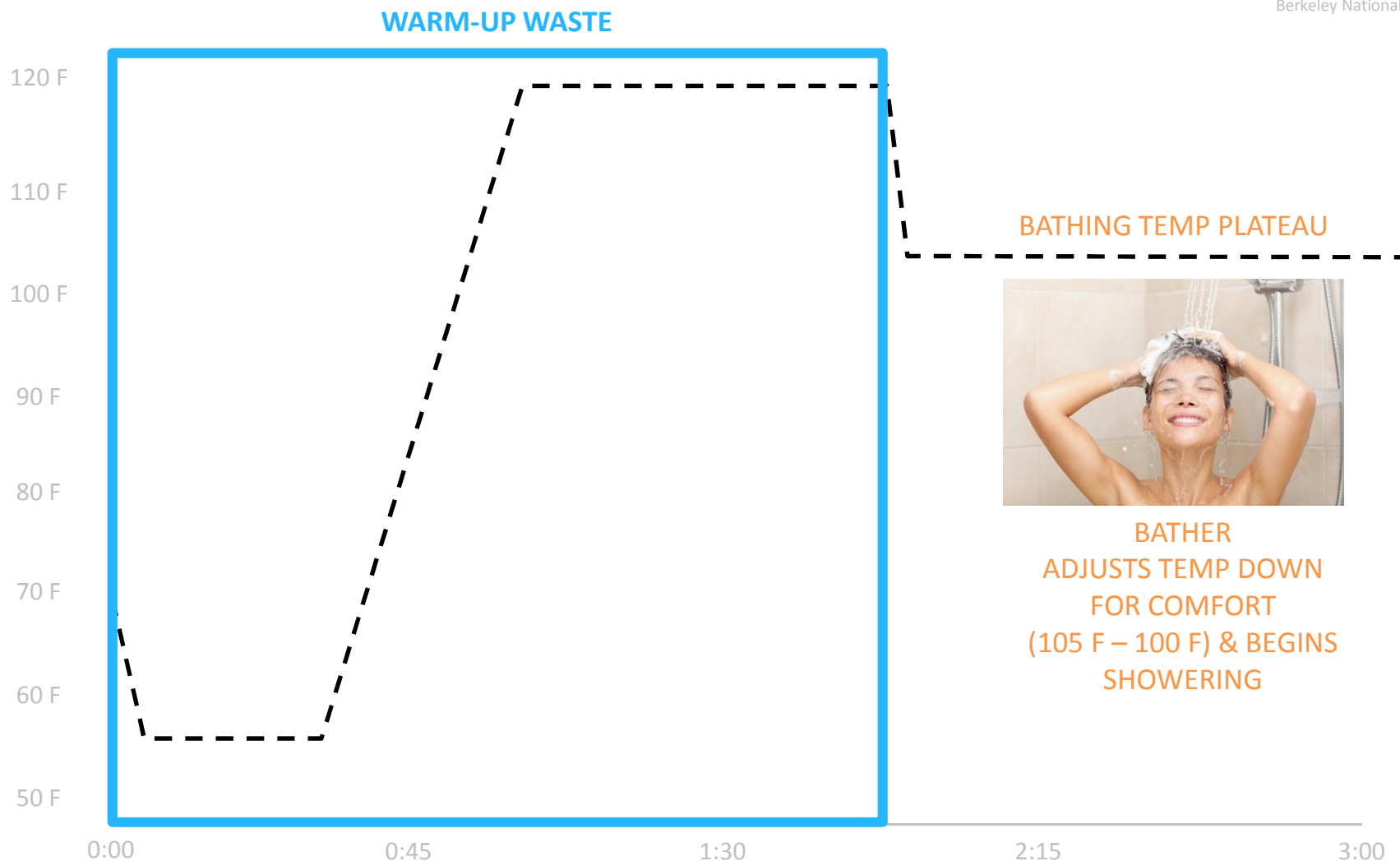
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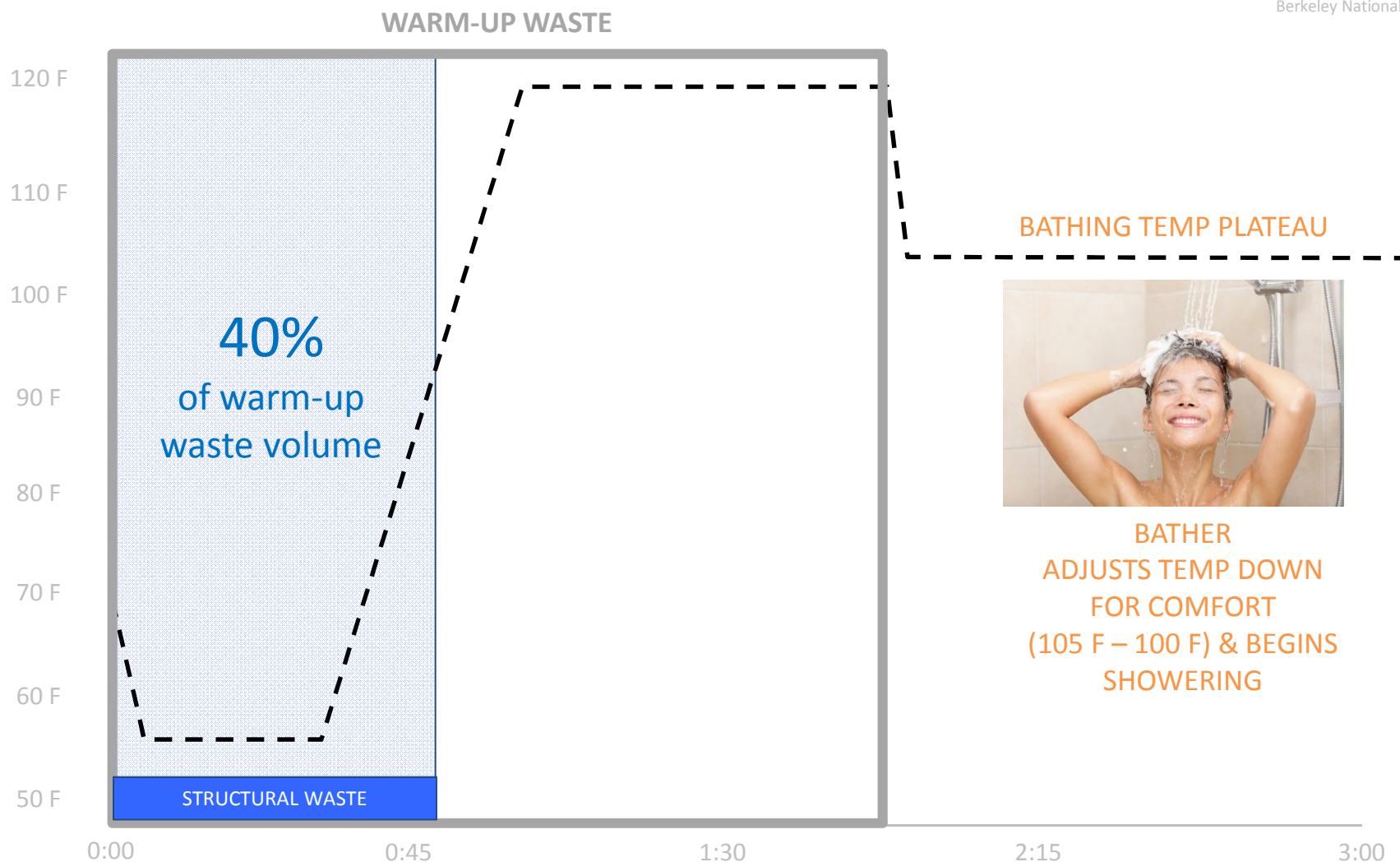
SOURCE: 2014 Disaggregating Residential Shower Warm-Up Waste – An Understanding and Quantification of Behavioral Waste Based On Data From Lawrence Berkeley National Lab





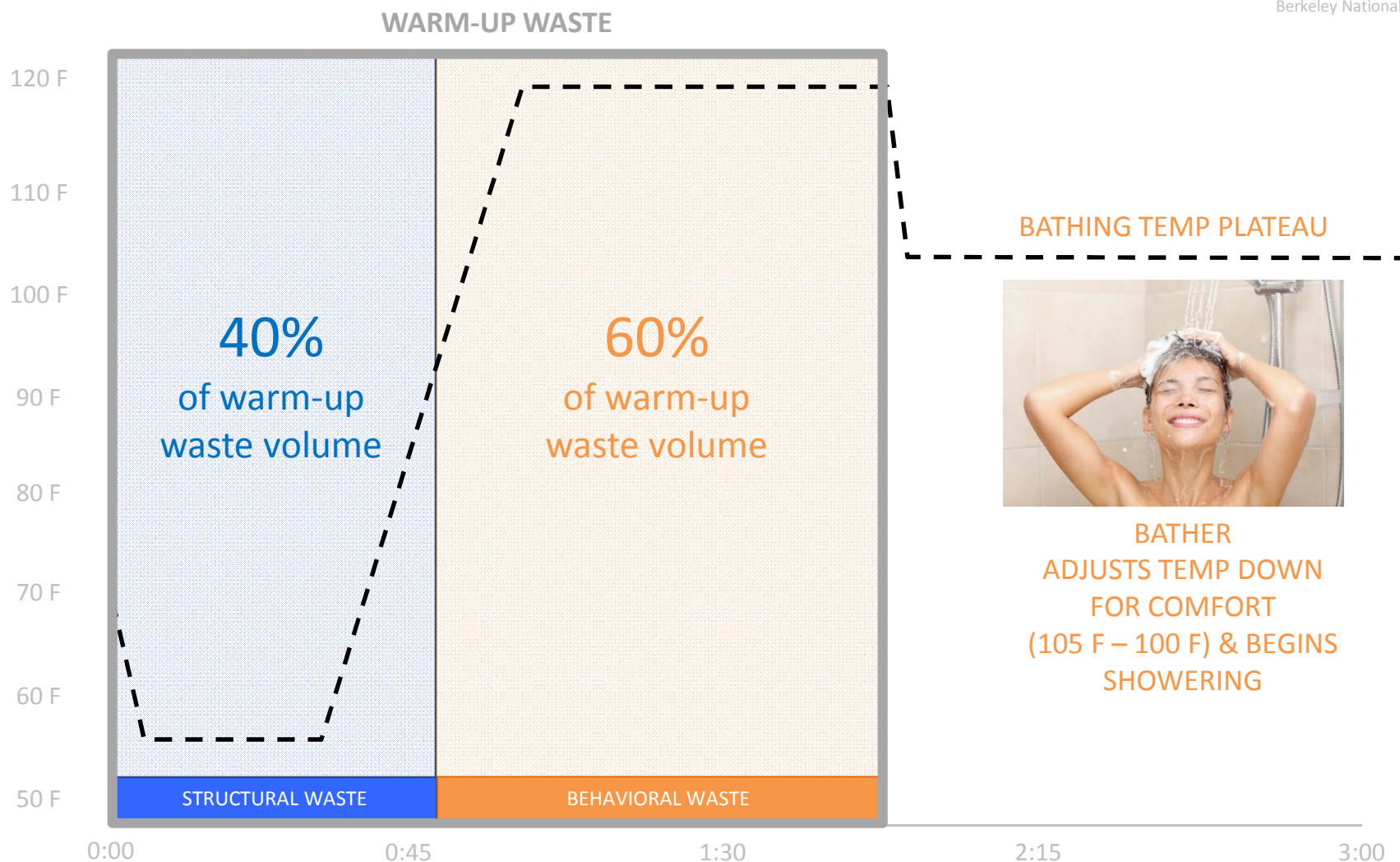
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# About A Minute Of Behavioral Waste (Hot Water) Occurs With Every Shower



38

seconds

2013 Field Study



BEHAVIORAL WASTE RANGE



56

seconds

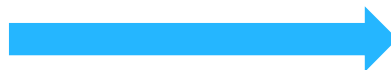
95 sec of total waste from Lutz 2004 x 59% Behavioral Waste from 2013 field study



# What If Californians Could Eliminate Behavioral Waste ...

## Without Changing Behavior or Making Sacrifices?

26 Billion  
Gallons Water/Year  
in California

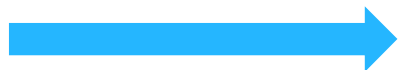


11.5 years  
of drinking water for  
everyone in CA  
(58 gallons person/year)





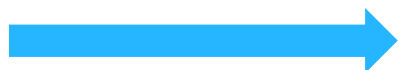
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Gallons Water/Year  
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11.5 years  
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+

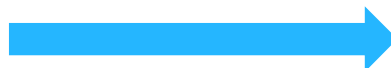
100 Million  
Therms/Year  
in California



185k cars  
gasoline fueled  
for a year  
(13K miles per year)

or

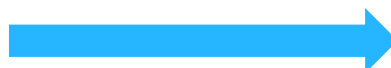
**26 Billion**  
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(58 gallons person/year)

+

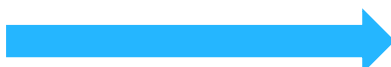
**100 Million**  
Therms/Year  
in California



**185k cars**  
gasoline fueled  
for a year  
(13K miles per year)

or

**3 Billion**  
kWh/Year  
in California



**260K homes**  
electricity consumption  
for a year  
(11,320 kWh home/year)

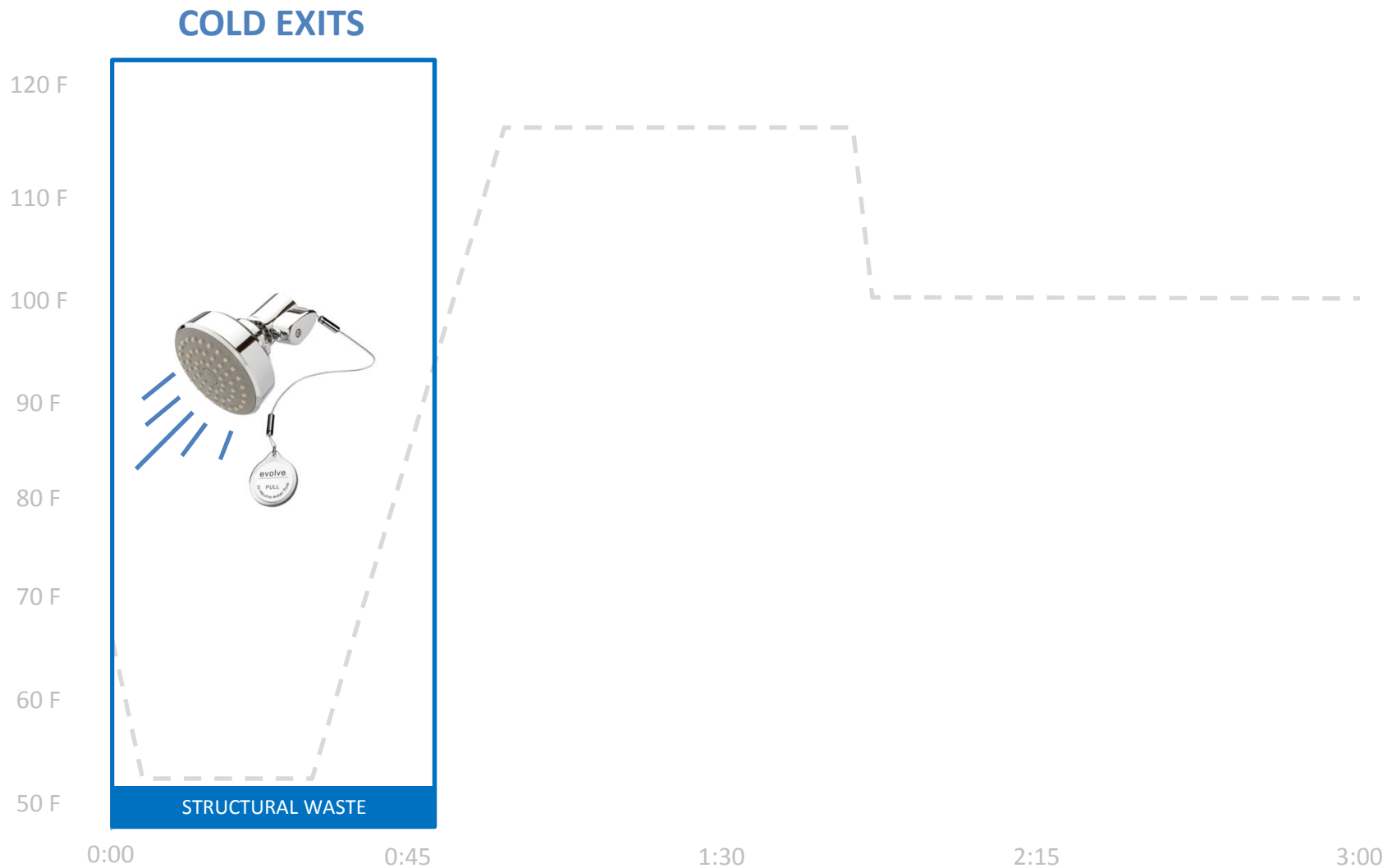
## The Thermostatic Shut-Off Valve (TSV) Solution

### Keep Your Routine – Save Your Hot Water

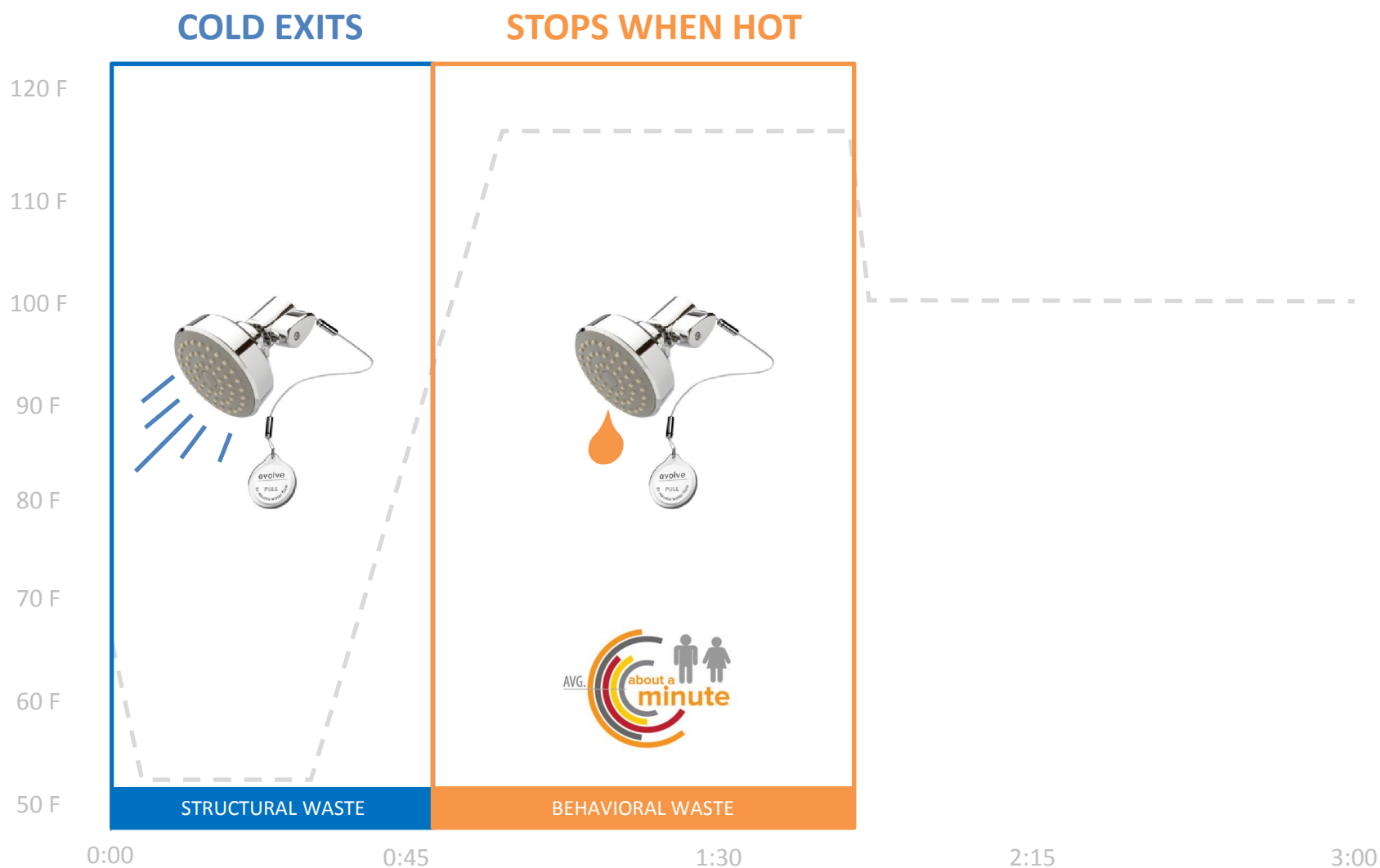


- Eliminates Behavioral Waste –  
Saves the water and energy most bathers don't even realize they're wasting.
- Savings occur without changing shower flow, feel or even your morning routine.

## How A TSV Works

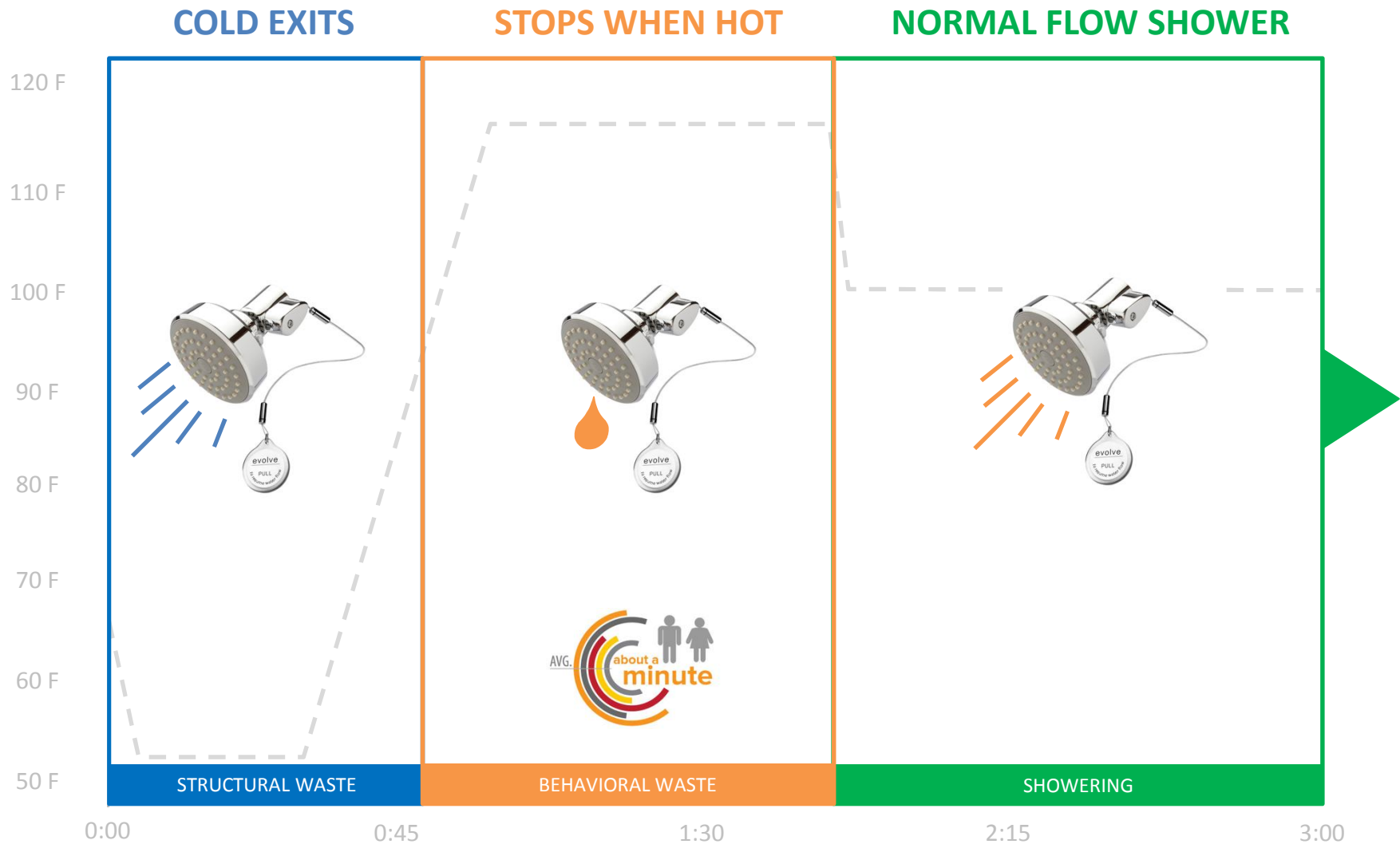


## How A TSV Works

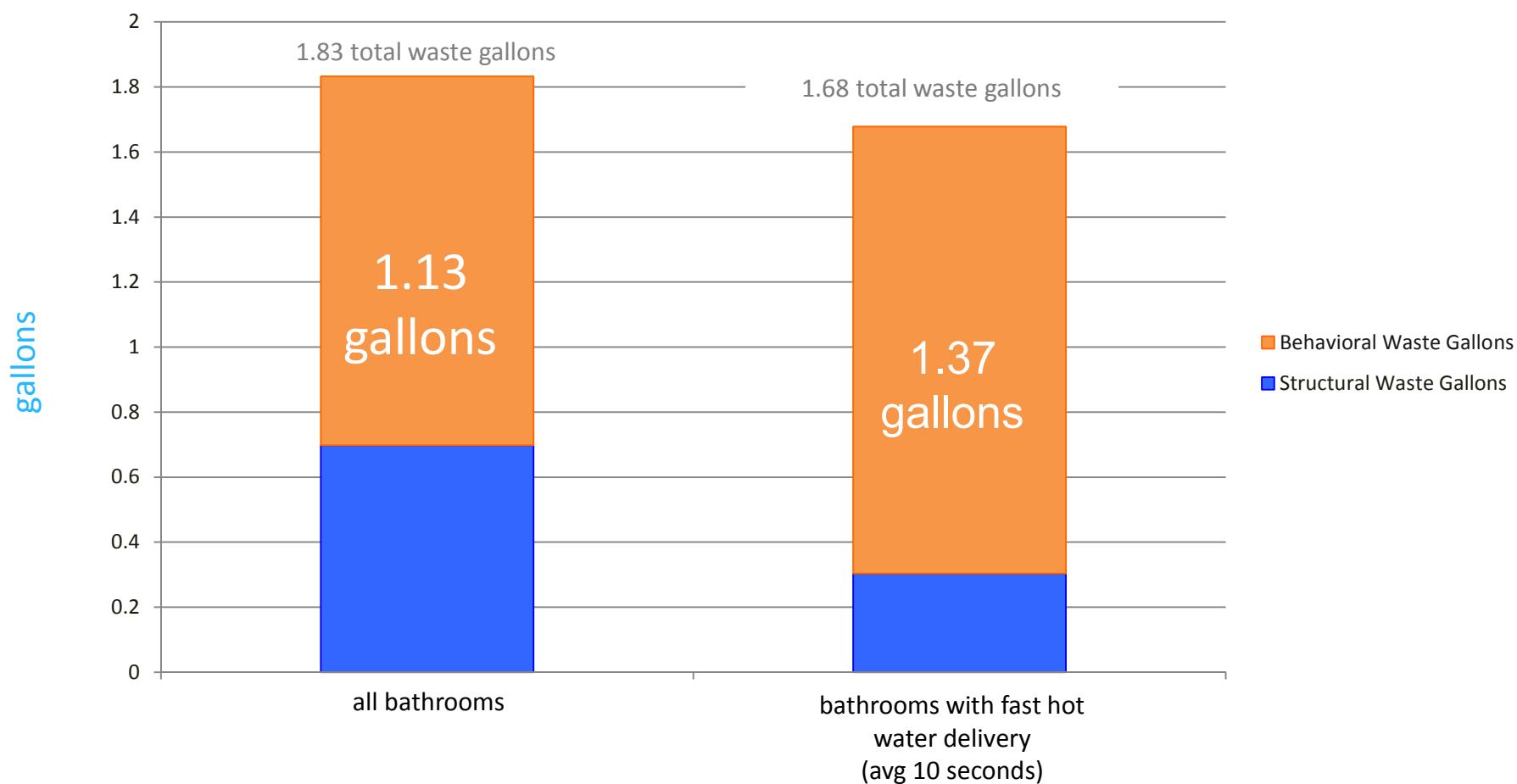




## How A TSV Works



## Behavior Is Persistent - Fast Hot Water Delivery Increases The Volume Of Behavioral Waste By 21%



SOURCE: 2014 Disaggregating Residential Shower Warm-Up Waste – An Understanding and Quantification of Behavioral Waste Based On Data From Lawrence Berkeley National Lab

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Thank You



Troy Sherman – Evolve Technologies  
480.250.4563  
[troy.sherman@thinkevolve.com](mailto:troy.sherman@thinkevolve.com)