What are Customer Landscape Preferences and What Drives Customers to Change Their Landscape?

2018 Market Analysis and Recommendations

AWE Nonmember Edition

Alliance for Water Efficiency

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LAND·SCAPE
LAN(D), SKĀP/

noun

all the visible features of an area of countryside or land, often considered in terms of their aesthetic appeal.

verb

make (a piece of land) more attractive by altering the existing design, adding ornamental features, and planting trees and shrubs.

TRANS·FOR·MA·TION
TRAN(T)SFəR 'MĀSH(ə)N/

noun

a thorough or dramatic change in form or appearance.

What is it About Lawns?

The sanctity of single-family home ownership is deeply seated in the image of green yards and lush lawns.

The reason for this ingrained landscape desirability can be traced back more than three centuries…

Lawns: A Brief History

Landscaping is a deeply embedded, Western cultural norm, dating back to 18th century England. The adoption of European landscaping trends became synonymous with lawn design becoming personal. Home lawns became physical extensions of a family's means, stature, and overall standard of beauty.

18th Century

At the beginning of the 18th century, Europeans looked to the design aesthetic of landscape paintings, with their expansive, verdant meadows. They desired to replicate the look and vast, sprawling lawns began to appear at the palaces and manor homes of the wealthy English and French.

Colonial Period

Colonialists also took note of this au courant landscape design trend. Impressed by its beauty, George Washington hired landscape designers from England to create a similar effect at Mount Vernon. A bowling green and deer park were created with lush green landscape. Soon others of means followed suit and thus began the popularity of sprawling, green lawns for wealthy Americans.

1800s– 1900s

Even in the late 1800s and early 1900s, lawns were a luxury reserved for the rich. Following the Second World War, with government-financed mortgages, developers built large-scale tract housing communities. Lawns were a selling feature, mimicking a design characteristic of wealthy properties.

Today, lawns are still viewed by most as a marker of success and economic status.

Understanding Landscape Transformation

MARKET TRANSFORMATION

Let's first take a look at a leading example of Market Transformation.

A market transformation occurs when a new technology or method emerges and is found to be superior, thus resulting in the original product and/or service becoming obsolete

We are all aware of the multi-stepped market transformation for audio technology. In the mid-sixties, consumers started with the shift from vinyl records to the more portable eight-track tapes. The market shift continued with the introduction of compact cassette tapes, then higher sound quality CDs, then iPods and finally to today's smartphones, and electronic devices.

Clearly, the market for audio devices has dramatically transformed over time and consumers have minimal desire to purchase earlier technologies.

LANDSCAPE TRANSFORMATION

Landscape Transformation is the act of transitioning customers and suppliers from a partiality for traditional high-water use landscape designs and products to a preference for a new watershed norm. Still in its early stage, Landscape Transformation is still evolving.

As a result of severe droughts and effective water agency initiatives, there is a slowly growing awareness of the beauty and sustainability of naturalized landscapes. Yard-by-yard, a shift is taking place, but at a rate that is far from desirable.

Water agencies struggle to "crack the code" and accelerate the market shift to a watershed standard of preference.

This report provides analysis and insight regarding the barriers to landscape transformation in the single-family market.

The Landscape Transformation Spectrum

Market transformation is a complex process. Agencies have to consider the incremental steps, emotional drivers, and individual pathways that influence a customer's decision to give up all or part of their lawn.

There is no one-size-fits all, or even a one-size fits most, incentive. Agency solutions must be as diverse as the demographics of the customers they represent for the reason that landscape transformation is a truly unique and personal path.

Landscape decisions are an extension of the customer's personal values; definition of beauty; and perception of benefits.

Customers have unique drivers and points of entry along the landscape transformation spectrum. Some customers may be driven simply by a desire to conserve water and are willing to remove their lawns with no incentive. Some customers may only want to take out a portion of their lawn. Still others may not want to remove any part of their lawn but can be coaxed to change out their controller. Market entry and exit points vary significantly.

The essential first step is to get the customer somewhere on the landscape transformation spectrum. As industry professionals recognize, the customer that installs a controller, for example, is more likely to initiate other measures down the road.

The trick is to 1) identify customers who are most likely to take action, and 2) provide them with an offer that motivates them to move forward. There are a multitude of psycho-social-demographic variables that influence a customer's decision. To accelerate the landscape transformation timetable, agencies need to delve deeper and better understand these complex variables.

The objective is to take each customer as far along the landscape transformation spectrum as is feasible for each property and each customer –with the overall desired outcome to significantly reduce irrigation requirements at all sites within an agency's territory.

While strides have been made to date, transformation has been slow and arduous. As a reference point, the Metropolitan Water District of Southern California has spent over $250M on lawn removal incentives that impacted only 2% of lawns.

Smart Irrigation	Some Lawn Conversion	Smart Irrigation & Lawn Conversion
Smart irrigation technology installed	*Partial reduction of irrigation needs*	*Greatly reduced irrigation/ No irrigation required*

We First Set Out to Understand People's Preferences

METHODOLOGY

We surveyed both nonparticipants and participants of landscape transformation programs from (or in, but not both) the following regions:

Austin, Texas
Fort Collins, Colorado
Guelph, Ontario, Canada
Marin, California
Peel Region, Ontario, Canada
Sacramento, California
San Diego, California
Seattle, Washington
Sonoma, California
Southern Nevada, Nevada

Sample of 3,390 respondents
1,460 American respondents
1,930 Canadian respondents

Results were gathered from April – October 2017
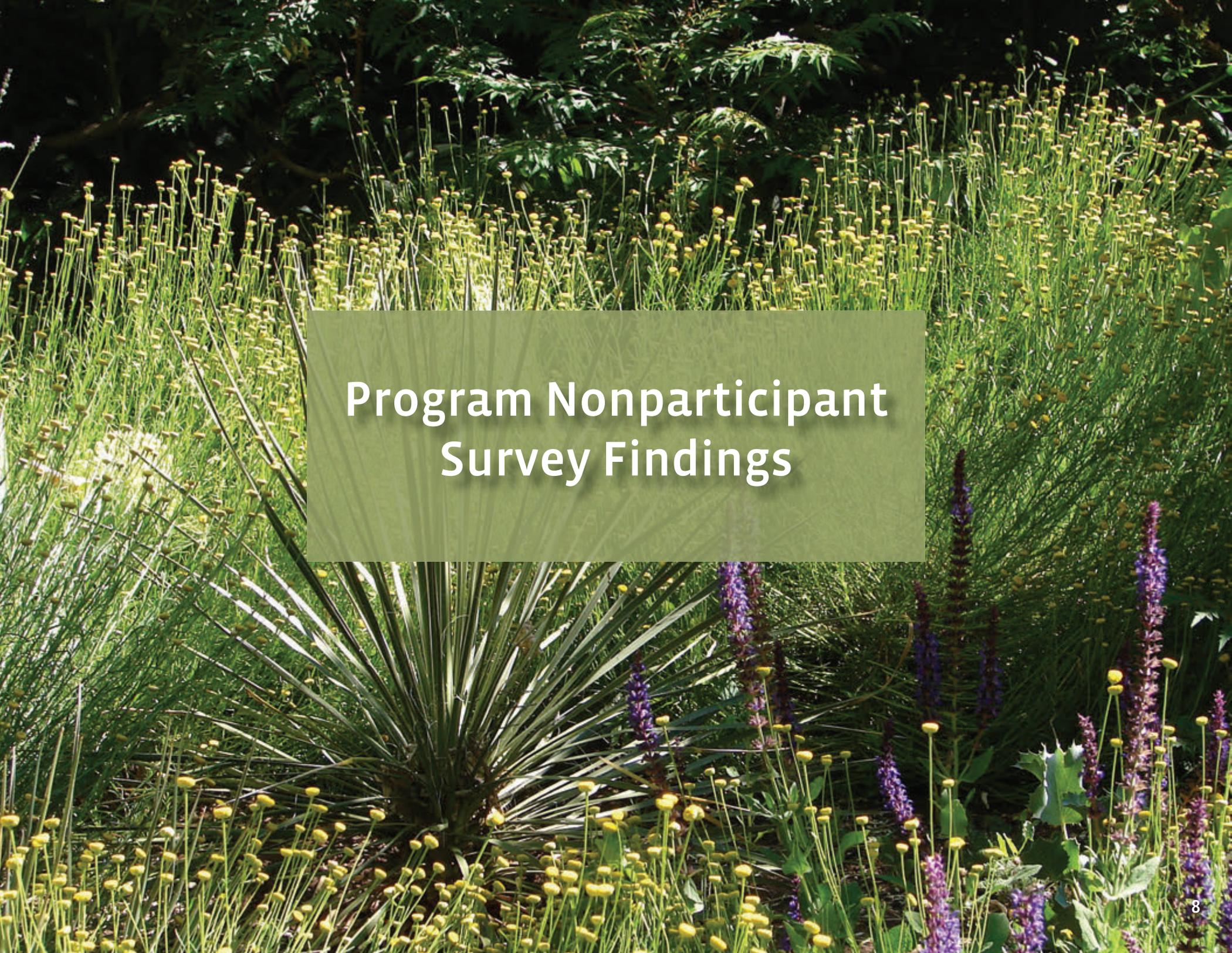
Program Nonparticipant Survey Findings

Customers Care About Beautiful, Functional Landscapes

Survey respondents were asked to identify the three most important aspects of their landscape.

55% selected beauty and appearance

48% selected easy care

42% selected low water use
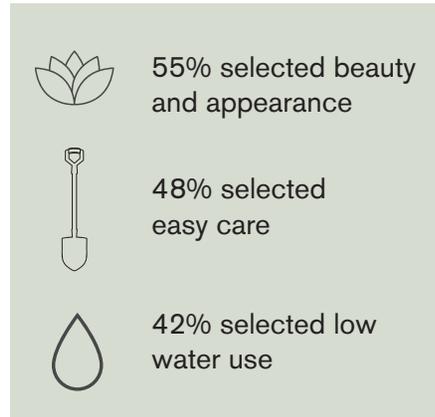
Most customers want beautiful landscaping.
Beautiful lawns can give a home, and the family who lives there, a feeling of well-being and contentment. When survey participants were asked to identify the top three most important aspects of their yard and landscape, an overwhelmingly number of respondents (55%) replied that beauty and appearance are one of the top three most essential elements.

Customers also desire easy care and low maintenance.
A significant number of customers (48%) stated that easy care of their landscaping was an important factor.

Customers are interested in water efficient landscapes. Forty-two percent of customers selected low water use as one of the top three most important aspects of their yard/landscape.

What would your ideal landscape have?
Surprisingly, lawns are not at the top of the list of customer requirements. When asked about their ideal landscape, more survey respondents selected trees and shrubs (87%), flowers (79%), and an entertaining space (73%), than lawn (69%).

Trees and shrubs: 87 percent of respondents

Flowers: 79 percent of respondents

Entertaining space: 73 percent of respondents

Lawn: 69 percent of respondents

Based upon customer responses, when promoting landscape conversions, the messaging should start with "beauty." It's what customers desire from their landscapes, and they've stated that beautiful landscapes are not necessarily tied to lawns.

Customers Are Aware Of Alternative Landscaping

There is an ever-increasing awareness of water efficient landscape options. Although awareness and action are two different notions, awareness is an important first step in the process of transformation.

Water efficient landscapes are still considered a somewhat "radical" option, yet they have become more prevalent and customers are gradually becoming more comfortable, and accepting, of this new aesthetic.

When customers see something they like, they will often take action on their own. A recent study done by Western MWD in Western Riverside California showed that for every lawn conversion project completed through their rebate program, another customer did it on their own without an incentive. This is the beginning stage of market transformation. The eventual goal is for customers to implement projects on their own without incentives.
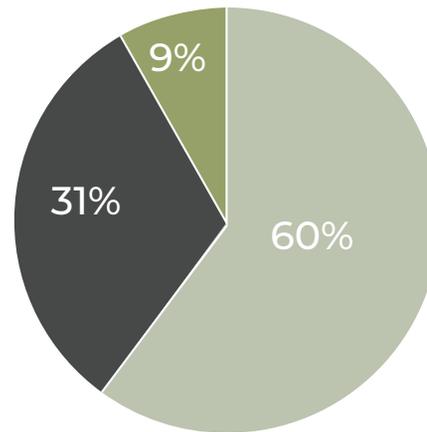
Do you know neighbors and friends that have replaced some or all of their lawn with alternative landscaping that uses less water?

60% of customers know a neighbor or a friend that has removed their lawn and 86% of them are either neutral or like the new landscaping.

9%

31%

60%

Yes   No   Not sure

What do you think of your neighbor's new landscape?

Dislike a lot

Dislike a little

Neither like nor dislike

Like a little

Like a lot

0% 5% 10% 15% 20% 25% 30% 35% 40%
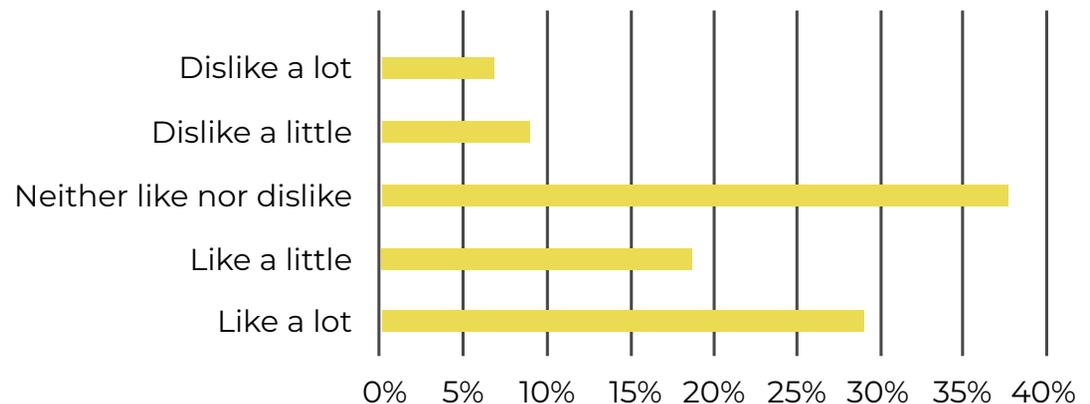
Customers Believe that Water Efficient Design Can Be Beautiful

Do you think your yard could look attractive with low water use landscaping?

Yes 69%   No 11%   Not sure 20%
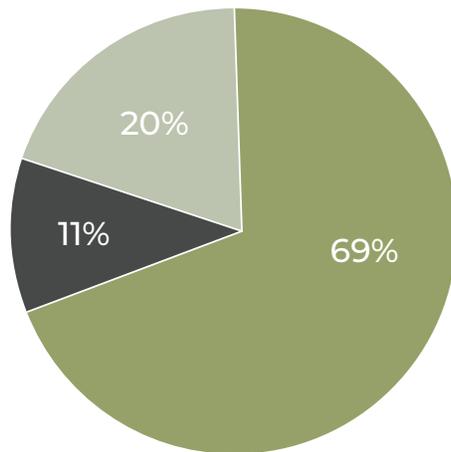
Most customers (69%) said that their yard could look attractive with low water use landscaping.

The majority believe that a water-efficient property can be beautiful; contain colorful plants; and provide quality entertainment and outdoor seating options.

This growing belief that water-efficient landscapes can be beautiful, demonstrates that, over the last couple of decades, there has been a shift in the beauty aesthetic. Lawns are no longer perceived as the only option for attractive landscaping.

Only 15% of respondents stated that low water use landscaping would look unattractive in their yard and landscapes must have cactus, gravel or artificial turf in order to have a water-efficient landscape.

74% "Can still be beautiful"
Austin, Fort Collins, Guelph, and San Diego

Customers Are Concerned About Cost

Customers identify cost as a major barrier to landscape transformation. When asked about concerns related to replacing their lawn, more than half (52%) of respondents selected cost as a concern. Survey respondents were also concerned about the final look (selected by 30%) and the difficulty of making changes (selected by 21%). Most turf removal programs require and investment of several thousand dollars; a significant budget line item for most households.

Agencies can increase cost coverage through higher incentives or they can convince customers that the outcome is worth the money.

Finding and capitalizing on landscape change motivations is the key to deeper market penetration. There must be compelling reasons for customers to spend this amount of money. For example, customers, who are not environmentalists, may have other reasons to make a change. An unhealthy lawn; a desire for a contemporary look; a desire for a bird-friendly yard – these desires can drive changes to a customer's landscape.

Homeowners have a varity of concerns about landscape transformation programs.

52% Cost of changing out some or all of their lawn

30% Final look of the landscape

21% Difficulty making changes

Most Customers are Not Fully Satisfied with Their Current Landscaping

Less than a quarter of customers stated that they were completely satisfied with the state of their current landscape. A balance of those surveyed, to a varying degree, believed that their lawn had deficiencies.

21% Very Satisfied

54% Somewhat Satisfied

19% Somewhat Dissatisfied

5% Very Dissatisfied
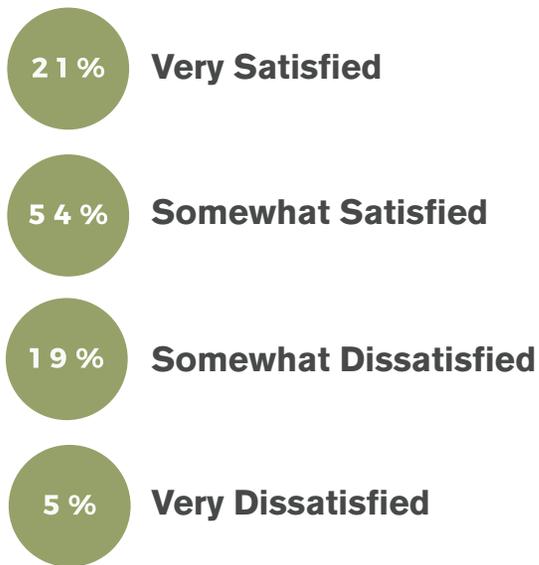
The response shows there is an opportunity with 79% of customers who are less than very satisfied.

Knowing that most customers aren't fully satisfied with their lawns, water agencies have an opportunity to market alternative water-efficient options.

More than half of customers state their lawns are unhealthy or only partially healthy.

Customers identified two main issues with their landscapes. They stated that weeds (24%) were a concern and their landscaping requires too much water (23%).
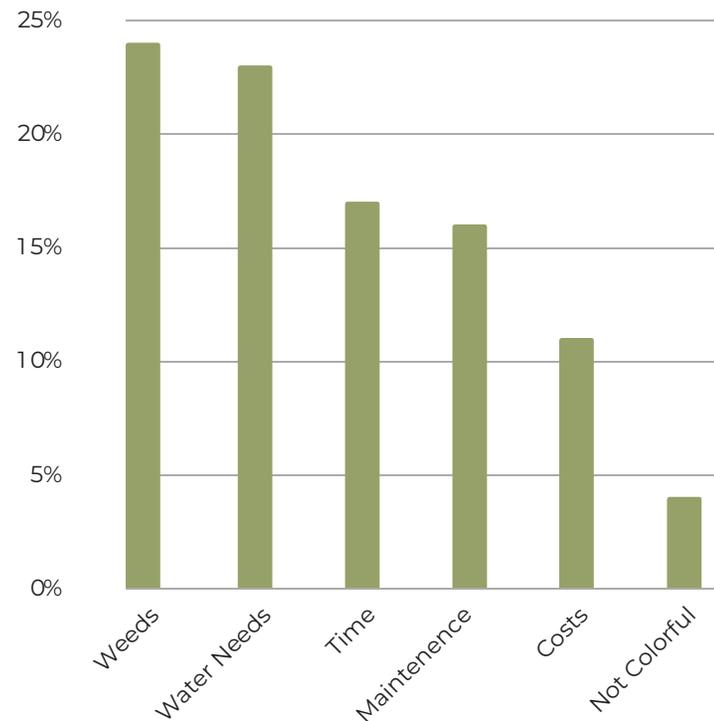
Customers Have Considered Taking Out Their Lawns

69% Have considered replacing some or all of their lawn

31% Never considered it

Which of the following do you prefer?

Replace part of my yard	**39%**
More efficient sprinkler system	**17%**
Replace all of my lawn	**17%**
Make no changes	**15%**

These statistics show the market is shifting.

Not only have customers stated that they're aware of water efficient landscape designs, most customers have considered, at one time or another, removing their lawn. This indicates a shift in attitude away from turf as the only option for landscape design.

It's logical that customers are most comfortable taking out a portion of their lawns. Market transformation is a gradual process and this illustrates the customers' desire to find a practical balance between the old and the new.

Water Savings

Are these the actual motivations?

The preponderance of customers cited water savings as the main reason to remove their lawn.

For this same question, customers gave *aesthetics* a fifth-place ranking. This response conflicts with responses from other survey questions, where aesthetics is listed as the number one motivation.

The overall lack of clear-sightedness regarding *customer motivation* needs a closer look.

Relevant insight about customer motivation can be found in the McKinsey study: *Using a consumer segmentation approach to make energy efficiency gains in the residential market.* The study identifies five segments of customers, roughly equal in size, each with unique motivations for initiating efficiency measures. Savings, as the primary motivational driver, pertains to a subset of customers.

The minimal savings of most efficiency projects are typically not worth the effort, based upon savings alone. It appears that resource savings is likely not the predominant driver for implementation for most customers. Only a few stand-alone improvements (toilets) actually pay back the investment in a reasonable time.

Often the factors that motivate a customer come from specific hidden personal values. Behavioral psychologists state that people often don't truly understand what motivates them to act. (www. insightsquared.com/2014/07/why-buyers-buy-the-psychology-of-purchase-decisions) People make purchase decisions rooted as much in emotional impulses as logical facts.
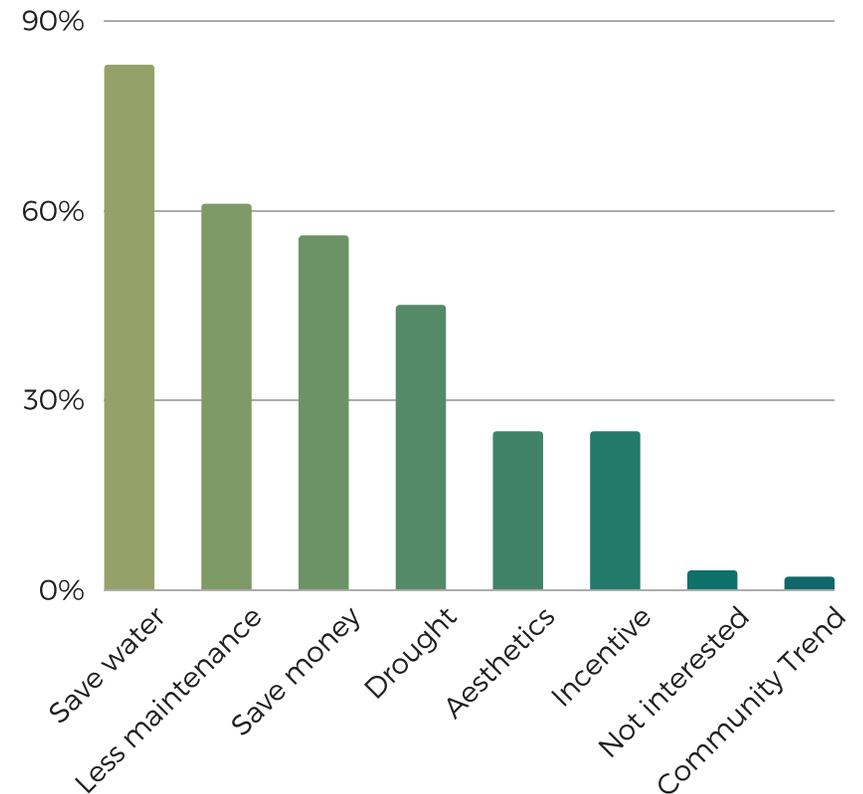
For the Landscape Transformation Survey, customers likely answered what they thought was a pragmatic and factual response. They want to think that their decision is based upon pragmatism when, in actuality, decision making processes are much more complex and segmented.

Over Half of Customers Believe They Use Much More Water Indoors, Than Outdoors

The majority of customers (53%) believe that they use seventy to ninety percent of their property's water indoors.

For decades there's been a singular focus on indoor water usage.

Among customers, there's a surprising belief that indoor water consumption is greater than outdoor consumption. This customer misperception impacts their view about the importance of outdoor water savings measures and, most certainly, diminishes the value of landscape transformation.

While indoor water conservation has been ingrained in customers, the importance of outdoor water conservation remains a foreign concept to many. The commitment to indoor water conservation practices stems from childhood lessons to turn off the water while teeth brushing and taking short showers. Additionally, indoor water usage is tactile—you turn the faucet at the sink and push the buttons on your dishwasher and clothes washer. We interact with it regularly. Outdoor water use, on the other hand, is something more distant. Lawn watering happens, automatically, twice a week. Residents only fleetingly think about landscape water use.

On the upside, 56% of those surveyed felt they could do more to reduce their outdoor water use.

With this customer misconception comes an opportunity to educate customers about the magnitude of water used outdoors.

Customers Think They Have Efficient Equipment, Sales Show This Is Not True

Customers believe that they have water-efficient sprinklers and controllers.

Most do not.

It appears that customers have a misperception about the efficiency level of their existing irrigation equipment. When customers were asked if they were interested in installing water-efficient sprinklers, forty-one percent (41%) answered that they already have them. There is, most likely, customer confusion about this because industry sales show that less than 20% of equipment sales are for efficient models.

The positive message is that forty-two percent (42%) state that they have an interest in water-efficient sprinklers for their properties.

There is a similar trend with Smart controllers. Fifty six percent (56%) of customers believe they already have them installed – this also does not align with industry sales. Thirty-one percent (31%) are interested in getting a Smart controller.

These misperceptions about the efficiency of customers' irrigation systems is keeping motivated customers from participating in programs.

Customers State that They Change Their Watering Schedule Regularly and Check for Breaks and Leaks...is this True?

Looking at lawn watering and sprinkler systems, ninety-two percent (92%) of customers state they have a timer on their system.

A quarter of survey respondents say they stop watering during the winter and decrease the amount in the fall. About a quarter of people say they increase or decrease watering depending on the month and turn-off the system when it rains.

People also say they seasonally or randomly check their sprinklers system for breaks and leaks.

More than likely customer responses are optimistic in nature. They want to do the right thing so they state it as fact. These false customer perceptions block them from participating in programs.

Customers State They Want Financial Incentives – and at Significant Levels

What can your water agency do to persuade you to replace your lawn?
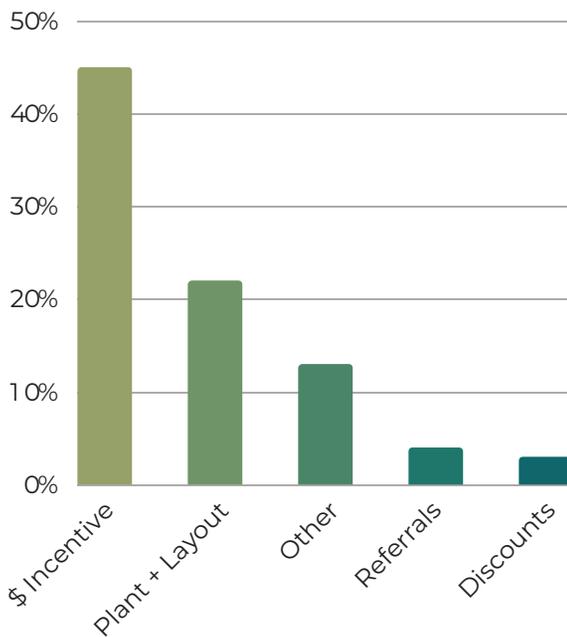
When customers were asked how their water agency could persuade them to replace their lawn, most people answered they could provide a monetary incentive (45%). A number of customers wanted help with plant selection and layout support (22%).

Fourteen percent (14%) were obstinate and said that nothing would make them take their lawn out.

How much financial incentive would motivate you to replace your lawn?

25% project costs
11% of respondents

50% project costs
32% of respondents

75% project costs
14% of respondents

100% project costs
23% of respondents

Would not replace.
Even with incentives.
14% of respondents
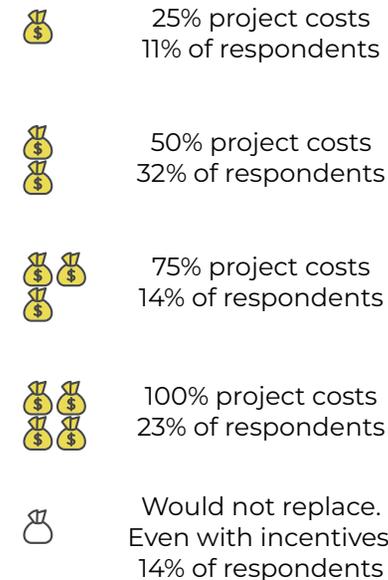
Customers were asked how much of a financial incentive it would take to motivate them to replace their lawn. The separation of responses is noteworthy. Forty-three percent of customers wanted incentives that covered 50% or less of the project costs, while nearly 40% required 75-100% of project cost covered.

There are two takeaways: nearly all customers believe they need an incentive and a fairly hefty one, *and* the incentive range is so broad it's almost impossible for water agencies to hit an incentive level that motivates all.

19

Only 20 Percent of Customers Believe They Can Complete a Lawn Conversion Project on Their Own
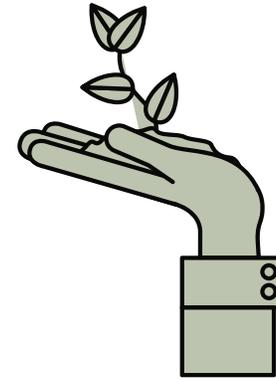
If you were to take out your lawn, how would you rate your ability to get it done?

42%
Need help with design and implementation

20%
Confident we could complete the task

17%
Haven't thought about it

15%
Need help with design

6%
Even with help, not confident could complete

Asked to rate their ability to undertake the steps required to remove their lawn, twenty percent (20%) believe that they can handle all requirements on their own. Fifteen percent (15%) need help only with the design. Forty-two percent (42%) state that they must have both design and implementation support.

Customers Need Help with Design and Installation

If you were to change your landscape, what level of assistance would you need?

40%	
30%	
20%	
10%	
0%	

None · Moderate · Substantial · Full · Unknown
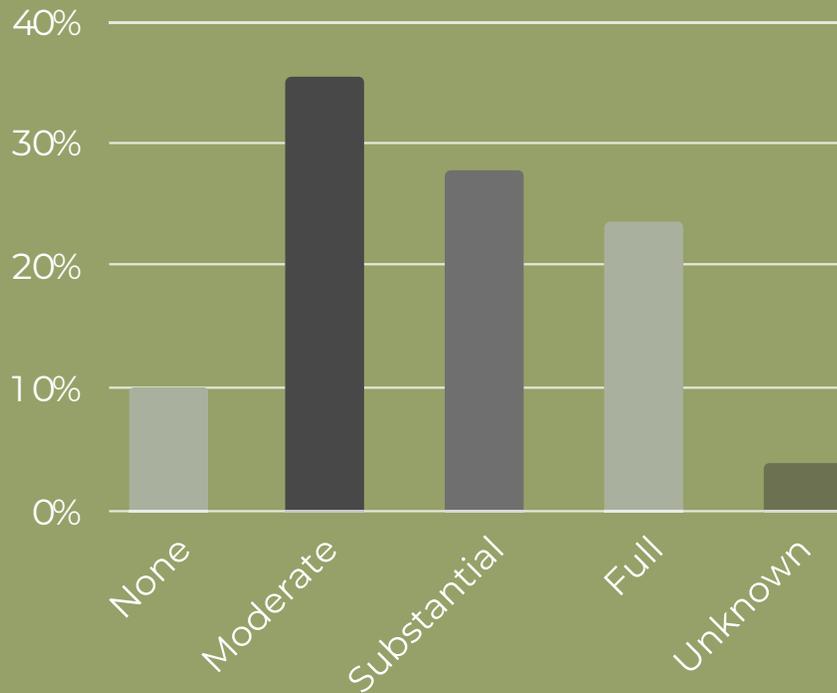
What Area Could You Use the Most Assistance With?

39%
Design

10%
Installing irrigation

24%
Replacing the lawn

4%
Finding Plants

7%
Finding a contractor

4%
Installing Plants

Eighty-five percent of survey respondents believe they would need moderate to full assistance to change out their landscape. They predominately need help with landscape design (39%), followed by actual installation (10% installing irrigation + 24% removing the lawn).

Customers Go Online or to Their Water Agency for Information

Chart data points:
- ONLINE SEARCH: 22%
- WATER AGENCY: 19%
- FRIENDS & FAMILY: 14%
- GARDEN SHOP OR NURSERY: 14%
- LANDSCAPE PROS: 11%
- PAMPHLETS &GUIDES: 7%
- MY GARDENER: 5%
- OTHER: 5%
- BIG BOX STORES: 4%
- ADVERTISERS: 1%
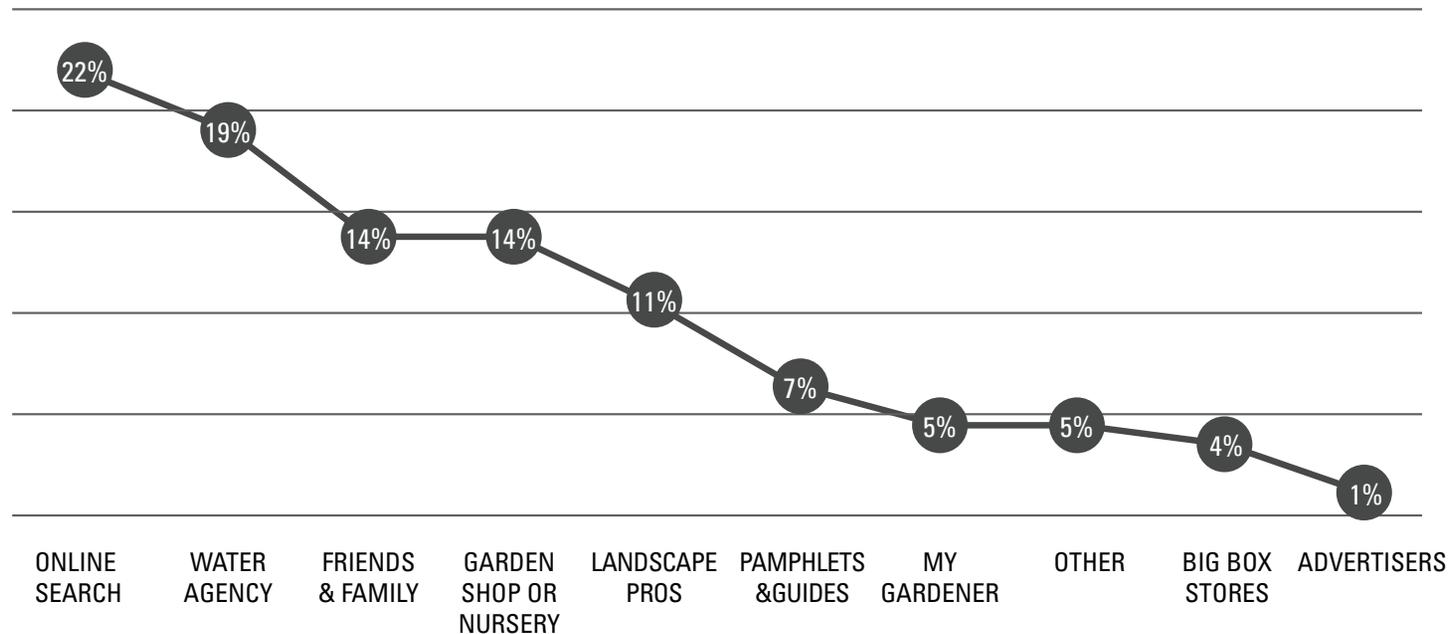
When asked what sources customers utilize for information on landscape maintenance and watering, 22% cited *online*. Nineteen percent stated from their *water agency*. Fourteen percent stated *friends, neighbors, and family* equal to 14% for *garden shop or nursery*.

Although we knew that customers accessed agency websites and went online for water-efficiency information, it was interesting to see that friends, family, and neighbors play a significant role as information resources as well. All four are potential resources for program outreach.

Customers Buy Plants from Local Nurseries and Equipment from Big-Box Retailers

Where do you buy your plants?

(Bar chart with y-axis from 0% to 80%)
- Local nursery: ~73%
- 'Big Box' store: ~15%
- Don't buy: ~7%
- Landscaper: ~3%

Where do you buy your sprinkler equipment?

(Bar chart with y-axis from 00% to 40%)
- 'Big Box' store: ~33%
- Local store: ~19%
- Contractor: ~16%
- Don't buy: ~15%
- Wholesale: ~9%
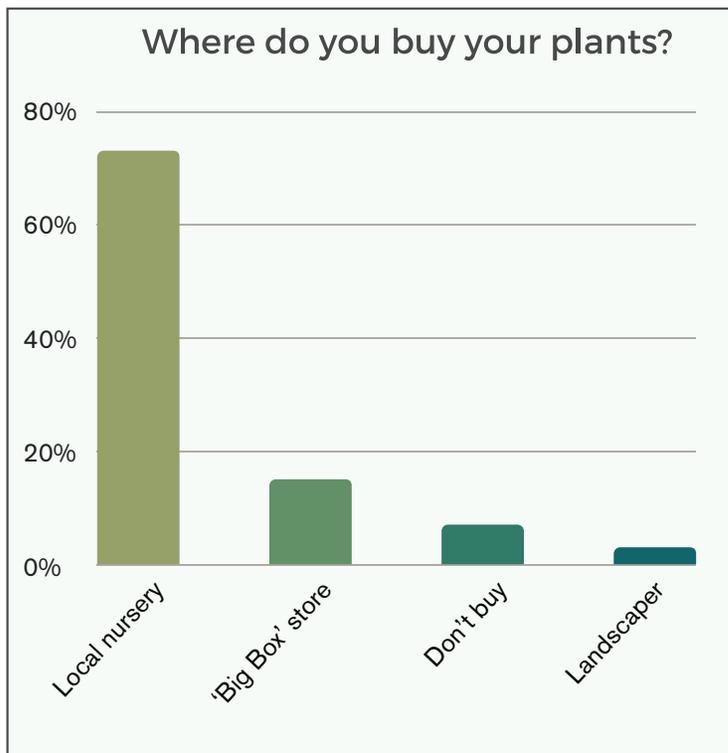
Survey respondents confirmed that nearly ¾ of them purchase their plants at the local nursery or garden supply shops in their neighborhood. They don't rely on landscapers or contractors to provide plants.
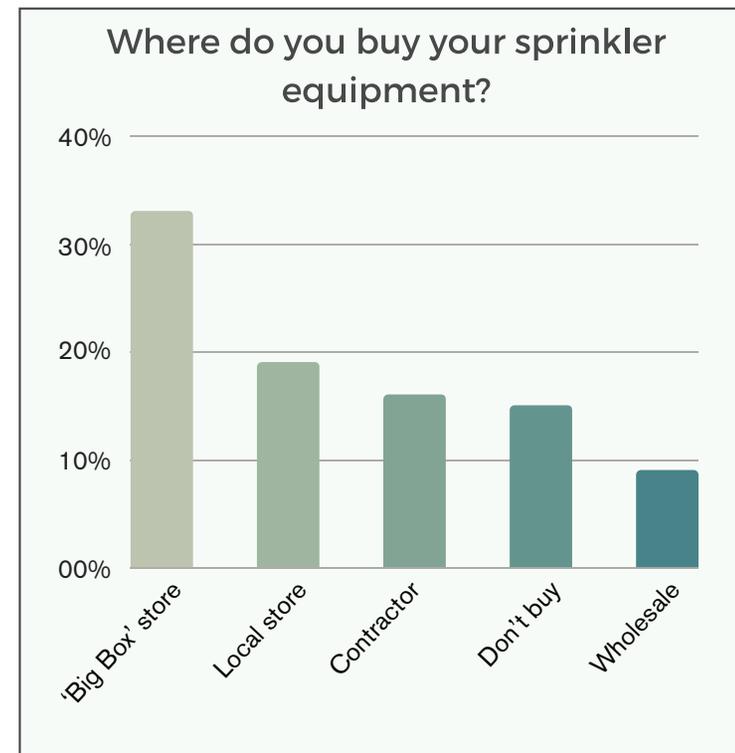
On the other hand, sprinkler equipment is purchased predominantly at Big Box stores and, to a lesser extent, at local hardware stores. A smaller percent rely on their contractor for sprinkler products.

Key Customer Survey Takeaways

- Customers believe that low water use landscapes can be beautiful.

- Customers desire to have a beautiful landscape. Each customer has a different vision of what comprises beauty.

- Most customers have considered converting their lawn, but they need help to accomplish this.

- Most customers only want to replace part of their lawn.

- Customers confirmed that design support is the most important need.

- Incentives are necessary to pull the trigger on converting their lawn.

- There are a number of misperceptions that disconnect the customer from their actual water usage. They believe most water is used indoors; that they already have efficient equipment; and saving money is the main driver.

Program Overviews

As a portion of this report, fourteen water agency programs were submitted for review, with water agencies looking for suggestions and feedback on design effectiveness.

The programs fall into four categories:

1) Per Square Foot Incentives for Lawn Removal

2) Irrigation Equipment Incentives

3) Site Consultations (Audits)

4) Free Sheet Mulching Materials

The fourteen water agencies span from the low rainfall and drought areas of California, Nevada, and Texas, to the moderately high rainfall regions of the City of Guelph and Region of Peel, to the temperate marine weather of Seattle.

The program designs range as well, with varying levels of incentives, customer support, and rules/requirements.

Due to these factors the programs are not statistically comparable. For the purposes of this study, we have identified general barriers and opportunities that crossed the boundaries of most programs.

The following pages are basic overviews of the fourteen programs to provide the reader with key program elements.

Program Overviews

Utility	Program Name
Austin Water	Waterwise Rainscape Rebate Program
California American Water Company	Turf Removal Rebate Program
Fort Collins Utilities	Xeriscape Incentive Program
City of Guelph	Healthy Landscape Assessment Program
Metropolitan Water District*	SoCal WaterSmart
North Marin Water District	Cash for Grass
Region of Peel	Fusion Landscaping
City of Petaluma	Mulch Madness
City of Sacramento	River Friendly Landscape Program
City of San Diego	Irrigation Hardware Giveaway and Cash for Plants 2010-2015
San Diego County Water Authority	Sustainable Landscapes Program
City of Santa Rosa	Green Exchange Program Cash for Grass Rebate
Seatlle Public Utilities	Irrigation Equipment Rebate Program
Southern Nevada Water Authority	Water Smart Landscapes Rebate

*LADWP represents 37% of all MWD activity.

Program Takeaways

- There are numerous strategies to achieve landscape transformation – consultations, free materials, incentives for equipment, incentives for lawn removal, and more.

- There is no *one size fits all* optimal program design. Every agency has different drivers – water supply issues and costs, political considerations, customer social attitudes and trends, and other influencers.

- Generous lawn removal incentives + strict requirements + substantial customer support services = highest water savings.

- Although the ideal program would combine significant incentives, strict requirements and generous customer support services, in reality, most water agencies cannot afford the budget for this design. The key is therefore to find the optimal balance of these program elements.

- It's important to educate the customer up front, so there is an understanding of the time, money, and resources commitments, as well as program requirements.

- Most agency programs have had only modest customer activity.

- Drought significantly drove activity levels for programs in affected regions.

- *Beauty* is an effective sales message.

Participant Survey Findings

What's Important and Why Customers Make Changes

What are the most important aspects of your landscape?

44% **Aesthetics**
Beauty & Appearance 24%
Clean & Neat 13%
Color 4%
Green Healthy Lawn 3%

20% **Easy Care**

19% **Low Water Use**

10% **Usable Space**

7% **Longevity**

The program participants were asked to rank the most important elements of their landscape. As with nonparticipants, the responses were similar with aesthetics ranking number one. The only variation was that participants ranked low water use higher and usable space lower as desirable elements. This makes sense because these were the people that actually took action.

What's the main reason you changed your landscape?
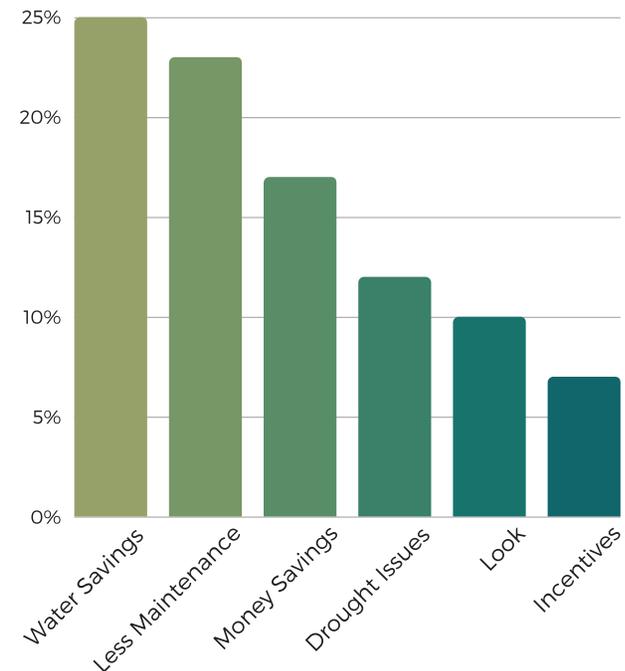
Interestingly, although participants stated aesthetics as their number one desirable design element, only 10% stated "the new look" was the reason that they converted their landscape. This somewhat makes sense since early adoptors historically are people who are environmentally focused and "doing the right thing" drove their participation.

Where do Customers Get Information?

Agencies are still the trusted advisor for customers when it come to water issues. When asked "Where are you most likely to get information about water issues?", customers state *the bill* is their number one source.

The bill is still a tried and true communication method, but only for a segment of customers. Non-participants ranked *online* as the number one way they obtain information with *water agency* following second along with *friends, neighbors, and family*.

① Bill
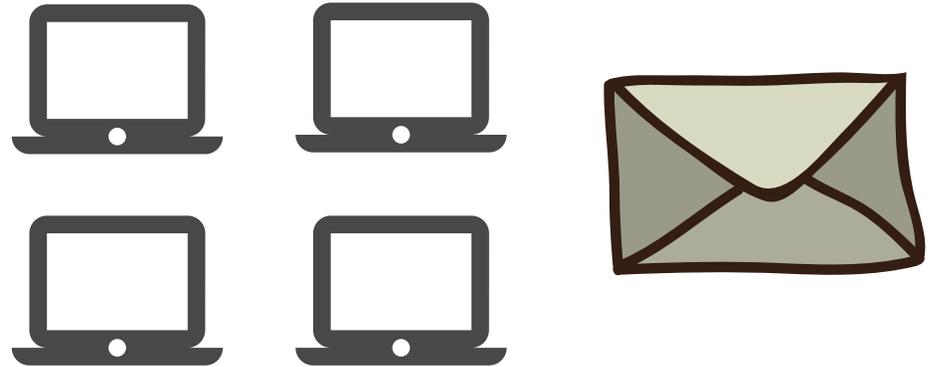
② Word of Mouth

③ Agency Website

Four times as many customers applied for their respective program online versus through the mail. This parallels the broader world where people have transitioned to doing everything online.

Water agencies that rely upon mail transactions are behind the times and most likely are losing customer participation.

What Part of the Process Did Customers Do on Their Own?

Customers responding are split into two categories: the Do It Yourselfers who handle all tasks on their own and those customers who require help with the two major project components: design and installation.

Forty-six percent of customers stated they designed their new landscape on their own. While another 46% received help with the design from a contractor, designer, or gardener.

Looking at installation, over half of customers surveyed utilized a gardener or contractor to install the new landscaping.

Interestingly, 71% of customers maintain the new landscape themselves.

This makes sense because the landscape conversion projects are laborious and time consuming.   These numbers track closely to the feedback from customers who did not participate in a program.

Who designed changes to your landscape?

Me or another family member..........................45%
Landscape designer...22%
Gardener...7%
Landscape contracting company...................17%
No changes to landscape.................................6%
Other..3%

Who installed the new landscape?

Me or another family member..........................37%
Gardener..14%
Landscape contracting company...................41%
No changes to landscape.................................5%
Other..3%

Who maintains your landscapes?

Me or another family member..........................71%
Gardener..19%
Landscape contracting company.....................7%
Other..3%

How Customers Feel About the Investment

Thirty-three percent of customers spent $2,000 or less on their new landscapes. Another 35% spent between $2,000 - $6,000. The remaining 23% spent over $6,000. This shows there is a wide array of investment for new landscaping.

The majority of customers (60%) stated the new landscape cost about the same or less than what they initially expected.

Of major interest is that 85% of customers thought the landscape conversion was worth the investment.

Because the monetary payback on most projects is so lengthy, converting landscapes needs to be sold on the long term investment and other benefits.

How much did you spend on the new landscape?

$2,000 or less 33%
$2,001 - $4,000 .... 24%
$4,001 - $6,000 .... 11%
$6,001 - $10,000 .... 10%
Over $10,000 .... 13%
Not sure/decline to answer 9%

Was the new landscape worth the investment?

No 2%
Yes 85%
Maybe 7%
Not sure 6%

Did the new landscape cost more, less, or about what you expected?

Less 7%
About the same 52%
More 34%
Don't know 7%

What Percent of Lawns Did Customers Take Out?

The majority of participants (69%) took out all of their lawn. The 30% that kept a portion of their lawn kept it as a place to play/entertain (34%) or for their pets (28%).

The number of customers that took out their entire lawn seems high but may be an impact of early adopters. Early adopters tend to be environmentalists or people "wanting to do the right thing" and those individuals are probably more likely and committed to doing it in its entirety.

It's still noteworthy that 30% of customers kept a portion of their lawn for play, entertaining or their pets. When looking at the nonparticipants it's even higher at 39% that prefer to replace part of their lawn and only 17% stated they would prefer to take out all of their lawn.

This preference needs to be considered as water agencies move to the next wave of customers. Programs need to support the partial replacement. Knowing that in time customers may be able to be brought along to full landscape transformation.

How much of your lawn did you remove?
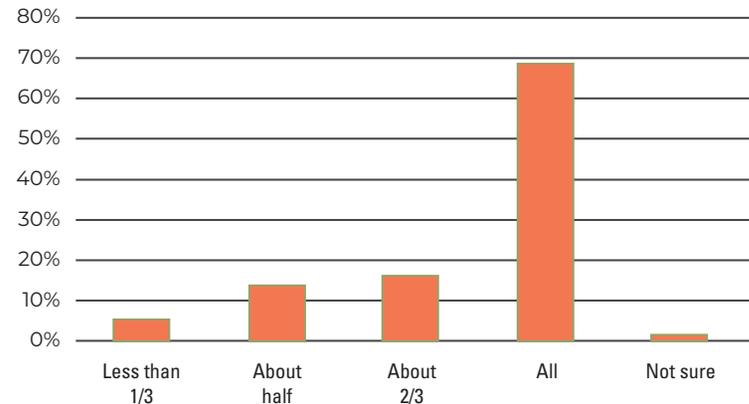
If you did not remove all of your lawn, why did you keep some of the lawn?
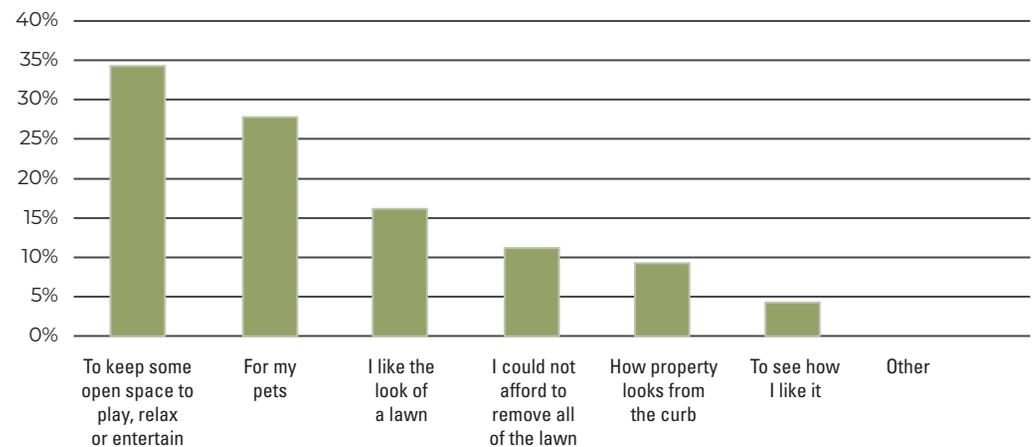
The Program Experience

The preponderance of customers (90%) are *satisfied* or *very satisfied* with the program. Most would not do anything differently.

This is positive news that customers are amenable to the work they had to do, the money they had to spend, and the overall outcome of their landscape conversion.

Such positive attitudes bodes well for the future of landscape transformation. Customers that chose to do these projects are ultimately pleased they did so.

How satisfied or dissatisfied are you with the program experience overall?
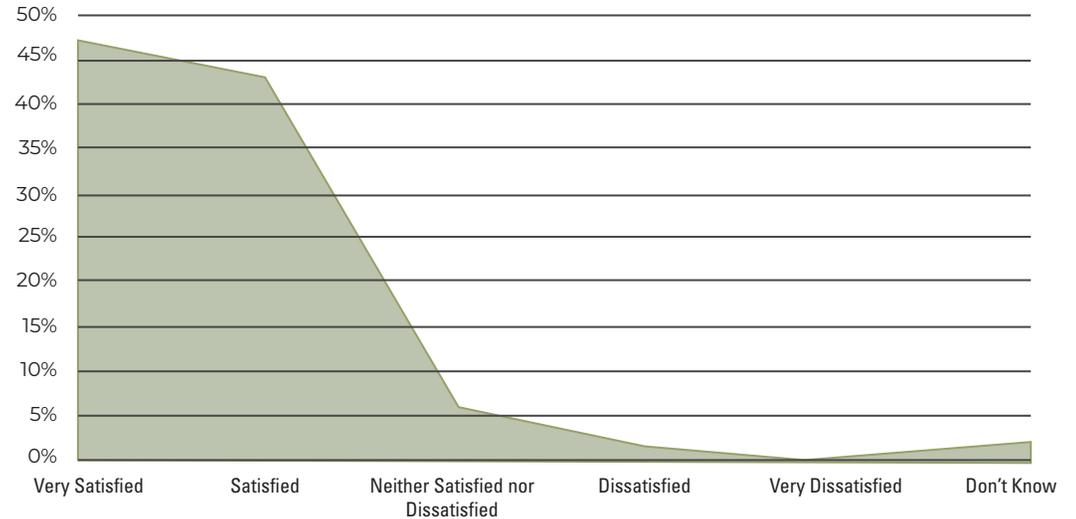
If you had a chance to do it again, would you do anything differently?

- Yes
- No
- Not Sure

22%
63%
15%
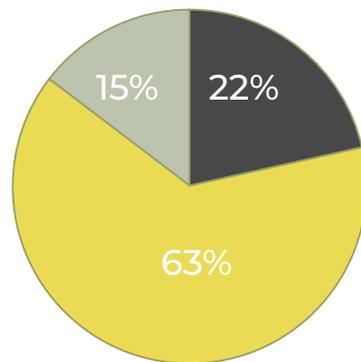
Participant Key Takeaways

- As with nonparticipants, customers value aesthetics as the most important aspect of their landscape.

- Participants still rely upon their water bill as the number one source for water use information.

- Half of customers designed the landscape plan themselves and half utilized outside sources for design help.

- Over half of the participants utilized outside help for implementation.

- Nearly all customers said that their new landscape is worth the investment.

- Two thirds of program participants took out their entire lawn.

- One third kept a portion of their lawn for entertaining or pets.

- Nearly all customers were *satisfied* or *very satisfied* with their program experience.

Market
Barriers

Landscape Transformation Barriers

Market transformation will happen when countermeasures to the major barriers are successfully employed.

The process to achieve landscape transformation is laborious so the motivation to undertake this must be compelling and the barriers need to be removed.

After reviewing the programs and customer surveys, responses, four major categories of barriers were identified:

- Customer Barriers
- Program Barriers
- Supply Chain Barriers
- Contractors Barriers

Landscape Transformation Barriers

Customer Barriers:

As is typical with all programs, most customers identified cost as an issue. With landscape transformation, this is obviously a critical issue due to the hefty up-front expenses and nominal monetary payback. But cost is more than likely not the real issue holding customers back.

Unlike most appliance or device programs, there's a complex emotional component tied to landscape transformation. Turf removal programs have the potential to change the whole look of their property but people aren't sure it's worth the risk. Those who consider participation usually don't have the skill set or available time to "go it alone."

There's also the problem that people, who don't have water efficient equipment, are under the misassumption that they have water efficient technologies already installed. Landscape programs carry the burden of significantly more barriers than indoor programs.

- High cost of lawn conversion projects
- Lack of knowledge regarding landscape and irrigation
- Misperceptions of the magnitude of outdoor water use
- Ease of lawn maintenance
- Like the look of a lawn
- Worries about new landscape aesthetic
- Minimal ability to execute conversions
- Indifference to the offer

Landscape Transformation Barriers

Program Barriers:

As is well understood by all, agencies set customer requirements for every program in order to know that customers are performing the work correctly and, therefore, saving the expected volume of water. To ensure this, programs are often designed with rigid requirements and complex processes.

Furthermore, due to cost-effectiveness concerns, customer incentive levels are sometimes kept low. These factors, in combination, result in lower participation. While the water industry knows that these issues are major obstacles to transformation, solutions have been difficult to come by.

- Rigid requirements
- Complex process
- Low incentives as compared to project cost

© Abbie Flanagan. First place winner of 2010 Inland Empire Landscape Contest.

Landscape Transformation Barriers

Supply Chain Barriers:

 (manufacturer/distributor/retailer)

With so much focus on program design and customer issues, it's easy to minimize the role of the supply chain in the success formula. At present, there's a "disconnect" between the manufacturers/ distributors /retailers and the water industry.

Unlike the days of toilet retrofits and clothes washer programs, there are few collaborative efforts to drive market entry and participation rates.

Smart controllers, drip irrigation, and high-efficiency nozzles are somewhat complicated to properly install and require more maintenance than past programs with toilets and clothes washer measures.

Water efficient products are rarely "showcased" in stores and, instead, are buried on shelves among the old high water use products. Unlike past toilet programs with a stringent certification protocol, there is limited certification for landscape products, beyond controllers.

Also, there are no large-scale industry promotional initiatives being offered for landscape products.

Lastly, customers complain that they can't find an adequate supply of low water use plants. The supply chain has the power to be a market driver but there is much to do.

- Plant availability
- High-efficiency products hard to identify at stores
- Limited testing, certifications, labeling, which impacts quality and customer acceptance
- No large-scale industry promotions

55

Landscape Transformation Barriers

Contractor Barriers:

As customers responded in the survey, landscape transformation requires a specific knowledge base that requires numerous labor hours. Many customers expressed that they need help to complete the required program steps. To date, half of program respondents are comfortable with a DIY approach while customers with less capability and time do not, or cannot, participate.

Contractor support is the solution but not as the situation currently exists. The standard 1000 square foot jobs are too small for contractors to consider. There's presently no business case motivating contractors to service this market. With the low customer response to landscape transformation, it's unlikely that contractors will see an opportunity due to the small profit margins. There are small contractor businesses and gardeners out there, but due to the required knowledge level for landscape transformation, these contractors don't possess the depth of knowledge to properly complete the job.

A direct installation program would remedy the customers' concerns about their own ability to execute design and implementation. Unfortunately, the cost of a direct installation program of this magnitude is extreme, making cost per AF un-doable.

- Gardener not skilled at conversion projects
- Contractors not serving the single family market (1000 sf or less)
- Contractor business case unclear

The Path Forward

Need for Big Data and Analytics

We all understand that the landscape market is a tough market to crack. There are no cookie-cutter solutions. Customers know little to nothing about outdoor water usage and technologies and, if that isn't enough, each yard offers up a unique mix of issues.

In order to transform landscape and irrigation markets, it's critical we understand customers likes and dislikes, patterns of behavior, how they think, and what entices them to take action.

While customers know little to none about their own landscape and irrigation, agencies know little to none about their customers.

Due to mostly hand read meter reads and bimonthly billing, there are limited interactions between water agencies and customers. Up until now, it hasn't been all that important to possess a deep understanding of customer preferences and their decision-making influencers.

The promotion of water-efficient indoor measures was fairly straight forward and people understood the products being offered. Not so with irrigation and landscape. This market is altogether unique.

In order to drive transformation we need to drive the customer. In order to drive the customer we need to understand customers at a more intimate level so we can:

- Target strong-potential customers with a higher degree of success

- Match them with the appropriate level of program(s) and support

- Deliver measurable water savings

Instead of casting a wide net and hoping for response and water savings, we need to micro-target not only the outreach, but the offer, the incentive, and the required support.

How do we tease out customer patterns and micro-target? We do what the most successful businesses are doing. We use big data, analytics, customer segmentation, and personalization.

Start with Big Data – Move to Predictive Analytics

Big data is a term used for a collection of large data sets that are integrated typically from both internal and external sources. The data sets are brought together and analyzed to discern patterns, trends, and associations, especially relating to human behavior and interactions.
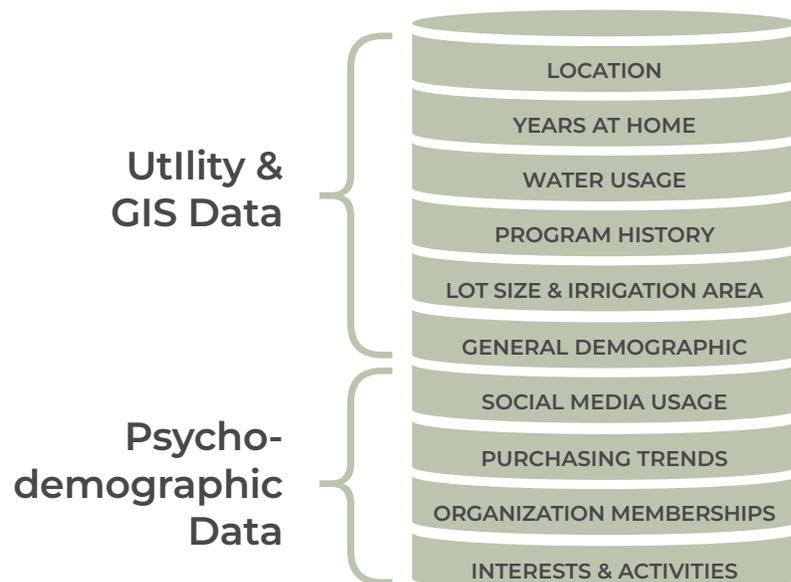
Agencies should be looking to pull together such data sources to understand customers on a deeper level, create a profile and predict and influence how customers make landscape choices.

Example of Big Data Contract

Utility & GIS Data
- LOCATION
- YEARS AT HOME
- WATER USAGE
- PROGRAM HISTORY
- LOT SIZE & IRRIGATION AREA
- GENERAL DEMOGRAPHIC

Psycho-demographic Data
- SOCIAL MEDIA USAGE
- PURCHASING TRENDS
- ORGANIZATION MEMBERSHIPS
- INTERESTS & ACTIVITIES

Water agencies have information on property location, customer billing, usage, program history, and other transactions. An agency's databases can be cross-referenced with external information sources. Agencies can draw from social networks, government and GIS databases, usage patterns on mobile devices, and numerous specialized information sources. These multiple sources can be overlaid to build a robust customer profile with the goal to move the homeowner from a landscape aesthetic involving excessive irrigation to one that requires little or no supplemental irrigation.

Big data is valuable but only with insight. Data Analytics provides information to help make educated choices as opposed to hypotheticals. Predictive Analytics applies statistical models for predictive forecasting or classification. Using this methodology, an agency can determine which customers are most likely to respond to an offer, what support they need, what water saving measures they might be interested in and how much they would be willing to spend.

Data analytics can help agencies understand customers and their water use better—knowledge that can be used to micro-target program offers as well as design new or better products and services.

Customer Segmentation

As seen in the surveys, customers are broadly aware of water efficiency and turf removal, nonetheless, only a small percentage of customers have taken out their lawns.

It's clear that reaching a heightened level of participation will require an improved understanding of customers' behaviors and better ways to engage them.

One way to learn about your customers is to build from the knowledge of comparable industries. Much research has been done by the energy efficiency industry and their findings are highly applicable to the water efficiency industry.

Of note is the McKinsey and Company study for the energy industry titled; *Using a Customer Segmentation Approach to Make Energy Efficiency Gains in the Residential Market*. The study's authors elected to view residential utility users in the same way as consumer-facing industries. The goal was to gain a unique perspective and build a more effective approach in marketing to their customers.

McKinsey found that consumer-facing industries utilize an approach that focuses on a combination of attitudinal, behavioral, and demographic indicators. Consumer industries heavily utilize information technology in order to gather consumer data with minimal effort on the part of the consumer. They state that this allows them to better tailor their messages and provide value propositions that deliver greater impact.

Based on their consumer research, the McKinsey & Company identified five consumer segments, all roughly equal in size.

- Green advocates
- Traditionalist cost-focused energy savers
- Home-focused selective energy savers
- Non-green selective energy savers
- Disengaged energy wasters

About 20 percent of the population consists of "green advocates," who care about energy-saving behavior as a goal in its own right. This is the only segment that is motivated by perceived environmental benefits from more efficient use of energy. The segment profile is not solely green-focused; it also includes an interest in using new technologies.

At the other extreme are the "disengaged energy wasters". This is a group (also about 20 percent of the population) that cares neither about saving energy nor saving money. They are not interested in new technologies or the environment.

The rest of the population, broken into three groups, is motivated predominantly by saving money, however each carries other traits, as well. Cost savings entirely motivates the "traditionalist cost-focused energy savers" group. The "home-focused selective energy

Customer Segmentation

savers" group primarily seeks home improvement, which can include a technological and cost-saving dimension; both of these can clearly link to more efficient use of energy. Members of the third segment, "non-green selective energy savers," are happy to save energy as long as they don't have to think about it (in other words, capturing savings through "set and forget" actions).

McKinsey concluded that consumer messaging needs to be in a manner that includes an emotional appeal to the priorities of each of the five segments. This is a key success factor for increasing the adoption of energy-efficiency programs.

Drawing from the conclusions of the McKinsey & Company study, water agency customers, as well, can be classified into broad categories based on a blend of demographic and psycho/social graphic characteristics.

With the absence of Big Data and Analytics in this study, the categories are illustrative in nature, but nonetheless a feasible segmentation of customers.

• Early adapter environmentalist
• Cost-sensitive
• Home-improver
• Selective
• Tech-resistor

"Early adapter environmentalists" are the most likely to remove 100% of their lawn, requiring only limited support and incentives. They sign up for a landscape transformation program because it's the right thing to do for their community and the planet. Most likely, the customers that have already participated in turf removal program are from this category.

The "cost-sensitive customer": is generally willing to participate in a program but will require an incentive to do so. Once an incentive is offered, this customer will move to complete requirements so he/she can collect their rebate.

Taking pride in their home and yard, "home-improvers" will look for new technologies that offer a better way to manage their property.

The "selective" customer reacts slower to market changes. These individuals will adopt newer technologies once they've been proven to be reliable and easy-to-use. Selective customers are not particularly cost-sensitive.

Lastly are the "tech-resistors". These individuals have no interest in new technology and do not like change. Tech-resistors will upgrade their landscape efficiency only went force to do so through an ordinance or legal policy change.

The agency challenge is to motivate and entice each of these uniquely motivated customers along the path to a higher level of site sustainability.

Personalization

Customers are saying that they want personalized experiences from companies.

According to Accenture (2016 How to create Exceptional Personalized Experiences), 75% of consumers are more likely to buy from a retailer that recognizes them by name; recommends options based on customer interests; and knows their purchase history. Consumers are willing to shop more with these retailers and are increasingly frustrated when companies attempt to engage them with irrelevant offers.

As with today's leading consumer companies, water agencies can better understand their customers and create a personalized and engaging dialog about landscape transformation through use of Big Data and predictive analytics.

A simplified example of personalization can be demonstrated using hypothetical water agency customer Joe Sample. Using Big Data and predictive analytics, Joe's profile is compared and contrasted against the data of all past participants of the agency's landscape programs.

Joe Sample's customer profile indicates that there's a 45% likelihood that Joe would be willing to change his irrigation controller; a 33% chance he'd consider partial turf removal; and a 17% chance he'd remove all the turf on his property.

Furthermore, the algorithms determined that the marketing messages with the highest opportunity for success are *beauty, eliminate chemicals, new technologies,* and *a fresh new look*. The best outreach methods for Joe are via his E-bill, through *FaceBook*, or *NextDoor*.

Included with his E-bill, Joe received a promotional ad for landscape removal. The landscape photo emphasized Joe's target messages. The ad text was customized, thanking Joe for participating in other water-efficiency programs and telling him more about the value of landscape transformation.

He also noticed multiple video clips on Facebook (FB) about smart controllers and landscape transformation. He clicked on the video about smart controllers but did not sign up.

Over time, agency data systems tracked his responses and non-responses. Outreach offered multiple variants of marketing messages and outreach vehicles, and refined them as Joe's preferences unfolded.

After nine months, Joe once again clicked on an FB video and then enrolled in the smart controller program. After completing all program requirements, he received a personalized customer survey, asking for his feedback. He filled out the on-line survey and gave mostly positive feedback.

The water agency now has valuable and useful information about Joe Sample. They confirm that the marketing messages resonated with Joe and he seemed to be most responsive to FB videos.

Looking to the future, the water agency hopes to motivate Joe to remove all or part of the turf at his home. Communications will be personalized and tailored outreach according to Joe's personal preferences.

Joe eventually responded to the agency's program offer because the water agency had insight regarding his personality, preferences, and motivations, and tailored interactions in a manner that was engaging. The interactions resonated with Joe and they were relevant. *Personalization is all about relevance.*

If agencies can increase the relevance of the value proposition to customers by speaking with a compelling message, matching their expectations, and addressing their unique needs and desires, agencies will see an increase in participation.

Sample Customer

Multiple Data Sources
- Psycho-Demographics
- Social Media
- Agency Data
- Purchasing Trends

Program Participation Data
- Smart Controller and Other Device Rebates
- Site Consultations
- Free Device or Materials
- Turf Removal

Customer Profile is Continually Updated and Refined

Customer Enrolls in Smart Controller Incentive Program

Customer Profile

Apply Predictive Analytics

Recommended Outreach
- E-Bill Promotion
- Facebook Program Link
- NextDoor

Customer Predictions

45% — Likely to change controller
33% — Likely to remove partial turf
17% — Chance to remove all turf

Best Messaging
1. Beauty
2. Eliminate Chemicals
3. Desire for New Technology
4. Fresh, New Look
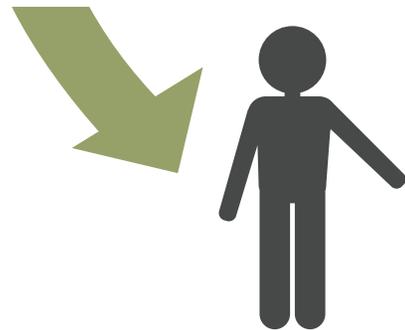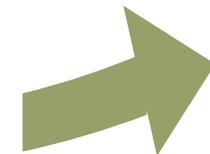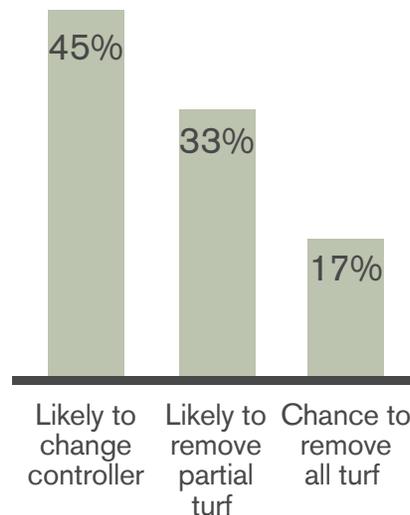
Address Emotions & Correct Misperceptions

"When dealing with people, let us remember we are not dealing with creatures of logic. We are dealing with creatures of emotion, creatures bristling with prejudices and motivated by pride and vanity."

Dale Carnegie, How to Win Friends and Influence People

For decades water agencies have been promoting marketing messages grounded in logic–Save Money; Save Water. These tag lines have brought results and a percentage of customers continue to respond to this inducement. The question is why do these customers respond to the Save Money/Save Water message?

Is it because the messages are logical and people respond to commonsense offers OR is it that monetary savings and water savings resonates <u>emotionally</u> with a particular subset of the customer base?

As stated, we know that Saving Water and Saving Money appeals to the emotions of some customers. We also know that the vast majority of customers don't have this reaction and don't respond to the program offers.

How do water agencies boost program response and reach the balance of their customer base? What strikes an emotional chord with them?

Landscape transformation comes with a hefty price tag and most customers are hesitant to make the necessary investment. To further complicate the equation, the majority of customers don't see a reason to make changes because they don't see value in it.

Let's look at a theoretical sales transaction for another big ticket item, a car:

Why on Thursday does Frank say that he can't justify buying a new car, but come Saturday, he's rolling down the driveway in a shiny new convertible?
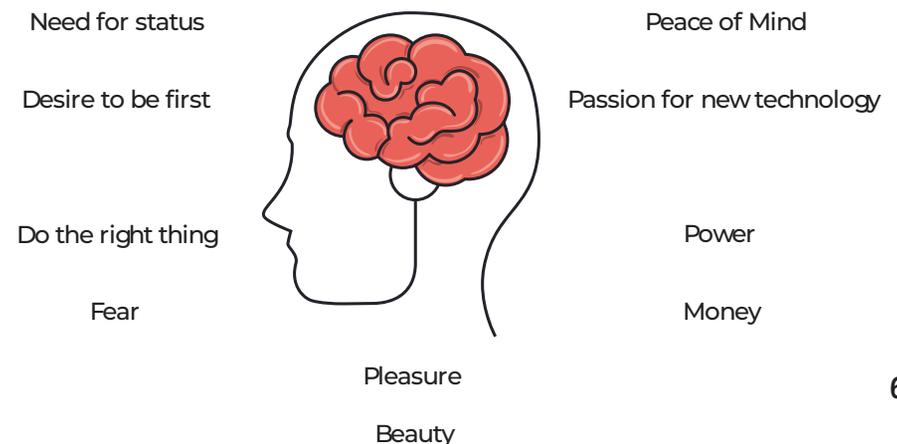
Logically, Frank knew it was more cost-effective to keep his old car, but on Saturday his emotions were swayed. The dealer made a sales pitch that appealed more strongly to Frank than did logic. He recognized Frank's desire for status. The dealer sold to Frank's emotions.

Frank's brother Joe, on the other hand, keeps his cars until they fall apart. He disagrees with his brother's new car purchase and scoffs at Frank's prideful vanity. The two brothers have a different set of values and emotional incentives.

The role of emotion, as a sales driver, seems like a soft topic but it's actually foundational and powerful. When organizations effectively connect with customers' emotions, the payoff can be huge.

While an investment in landscape transformation is not identical to making a car purchase, the decision-making process is the same. The customer must first have a desire for the product. In other words, the product must appeal to a strong emotion and it needs to be strong enough that it drives the individual to spend the necessary money for the item.

Need for status

Desire to be first

Do the right thing

Fear

Peace of Mind

Passion for new technology

Power

Money

Pleasure

Beauty

Emotional Drivers

The water industry has yet to tap deeply into messaging that inspires emotional connection and response. There are hundreds of emotional motivators that drive purchasing/participation choices. A customer's decision to "buy" is most likely the result of several motivating factors in combination. While agencies have had success with a slim percentage of their customer base, there is great potential for more connectivity.

In their responses to the questionnaires, customers provide us with some insight regarding their emotional drivers. Overwhelmingly, customers state that beauty is a predominant factor when assessing landscape choices. Some water agencies are recognizing this and are already creating messaging that positions beauty as the principal theme, instead of defaulting to the usual water and monetary savings theme.

Other emotional drivers emerged as well. A majority of customers endorse the belief that lush lawns equate to status and success. They don't feel the same about water-efficient landscapes. At present, customers don't think of status when they look at them. Instead, customers believe that water agencies are asking them to "give up" their lawns; strictly speaking, to be deprived of something they value.

Knowing this, landscape transformation program messaging should be cautious about asking customers to remove their source of pride. For agencies where landscape transformation programs are desirable, and turf is not climate appropriate, campaigns still need to recognize the human desire for status. In these regions, agencies can accomplish this by crafting imagery that water-efficient landscapes are "in" and watershed landscaping is today's status symbol of success and beauty.

The "turf is out" message is not universally appropriate, considering there are many areas of North America where turf grows naturally and requires little watering. In these areas, turf removal could result in undesired environmental impacts due to turf's beneficial role. For all climate regions, it is important to ensure that landscape have adequate plant material and proper design to aid in capturing carbon, cool the air, and reduce erosion and runoff.

In targeted turf removal regions, transitional messaging, from turf to water-efficient designs, can be presented in a sensitive manner so as not to insult those with lawns. Savvy marketeers know how to craft campaigns that shift attitudes and customer demand. The fashion industry, as an example, re-creates "the desirable" and consumers respond to these cyclical shifts in trend. While not completely analogous, the point is that people's image of beauty and status is malleable and changeable.

The positive news is that customers think water-efficient landscapes can be beautiful. These customers are beginning to shift towards an association between beauty and water-efficient landscape designs.

Some customers expressed fear about making the transition. They worried that the new landscape design would look bad and they would end up with unattractive landscaping. Fear is a destructive emotion, and if not subjugated, will keep a percentage of the customer base from taking part in a LT program.

Among the customer population, there are those who are excited about new gadgets and technologies. They care less about beauty and more about functionality and solutions to problems. These customers are more likely to be enticed by Smart irrigation packages rather than turf removal.

There are innumerable emotional drivers that can lead to a customer's decision to participate in LT programs: money, pleasure, a passion for new technologies, a desire to do the right thing, and many others. Each of these human desires appeal to various subsets of customers to differing degrees and the decision to participate is based on a number of emotional drivers, in combination.

The questionnaires have unearthed a number of these drivers but identifying and measuring emotional motivators is complex due to the fact that customers, themselves, are often not aware of them.

Marketing messages that elicit a positive emotional effect increase the likelihood of program participation. To increase market saturation, agencies must better diagnose and align themselves with the emotions that drive their customers' behaviors.

It would be highly advantageous for the water industry to work with a consultant that specializes in the science of customer drivers and sales response. The water industry can look to, and learn from, companies that specialize in the analysis of emotional connections as a decision-making indicator.

H-E-L-P

They say it loud and clear. A significant percentage of surveyed customers want help with the **design** and **implementation** portions of their lawn conversion project. They understand that designing and installing a landscape is complicated and backbreaking. The trick is to provide effective support without driving up program costs.

Design Support

Design support varies from agency to agency with some offering one or two free hours with a design professional. Unfortunately, this is expensive and labor intensive. Other agencies provide templates as a guide—less expensive, but also less customized to the customer's property. Videos can help; however, they are more of a tutorial and are not tailored to each site. Agencies need to understand the cost and value for these services and, more importantly, whether they drive down program abandonment.

There's been a huge shift to online technology as the number one resource when looking for solutions. With the emergence of quality apps, it's time to consider the development of a software application that guides the customer through the steps to create the design plan.

The design app would ask the customer questions upfront about design aesthetic and functionality and provide step-by-step prompts to walk the customer through the steps. The app would help the user to create the property layout and key features; identify and fix issues with slope, runoff, pressure regulation, etc.; design the irrigation plan; select plants by scrolling through an online easy reference guide, and other key steps. A well-designed app will help the customer identify issues with sun, shade, wind, and soil quality. The software can even include the names, location, and mapping to suppliers that provide water-efficient plants and equipment. Through the application, customers complete all the steps, save the plan, and come back and make changes, if needed.

H-E-L-P

Implementation

The physical tasks and knowledge required to remove turf is too much for most customers to undertake. Of the program participants surveyed, 42% said they needed help. The difficulty lies in finding help because there's a service void for these customers. Knowledgeable contractors are interested in large jobs, beyond the size and scope of these programs. Mom and pop lawn care businesses don't have an understanding of water-efficient landscaping and irrigation, while large companies cannot build a business case for the average 1000 square foot turf removal project.

With such a high percentage of customers requiring implementation support, agencies should look to develop a solution for this gap in service or else accept a much slower rate of market transformation. One possible solution is for **agencies to work collaboratively to build the contractor workforce**. These contractors would need to be incentivized until the market took hold and incentives were no longer necessary.

A **business case, with healthy incentives**, could be developed to attract progressive contractors. To develop trust with customers and ensure a sufficient knowledge base, agencies would leverage one **training and certification** program for contractors. Agencies help advertise and promote the certified contractors as a customer resource.

For both the design and implementation portion of the programs, agencies might consider offering an *Ask the Expert* blog as an additional source of help for customers. With major projects, people often get stuck along the way because of an easily solvable issue.

Summary - Moving Forward

The landscape market transformation process has challenged the water industry far beyond that of indoor residential efficiency. Landscape programs are typically costly, complicated, and labor-intensive. Site completion comes about by way of a long, drawn out process for both the customer and water agency personnel.

That said, it's a remarkable feat that the industry has seen a modest level of success over the years with outdoor efficiency programs. The industry's market penetration is the direct outcome of herculean efforts and toil by water agency staff, ignited by years of drought conditions.

Much has been accomplished to drive down per capita water use, but there remains the imperative to dig deeper and do more.

Program Recommendations

The current programs work effectively to varying degrees. With modifications, there's the potential to squeeze out more savings. We know that the comprehensive customer support programs, with extensive handholding, save more than just audits. Looking forwards, what should water agencies consider when designing a landscape transformation program?

First, Correct Customer Misperceptions about Water Usage.

Over half of the customers surveyed believe that they use more water indoors, than outdoors. This misperception directly affects their judgment on the value of irrigation efficiency and turf removal. Before launching a program, consider implementing an educational program so customers understand their outdoor water usage.

Educate the Customer, Right from the Start.

Customers need to enter into landscape transformation projects with their eyes wide open. It's important that they understand the expense and hard work ahead of them. Introductory meetings or workshops, such as the events held by Fort Collins, help potential participants know what's ahead, so they can stick with the project.

Throughout the project, customers need educational support resources. They struggle with plant and design choice as well as irrigation design. Water providers have put significant effort into the development of knowledgeable and trained staff; informative customer workshops; online resources; and on-site assistance. Program managers, in their interviews, stated that they're glad that they did so because it heightened the effectiveness of their program.

Program Recommendations

Find the Optimal Design Balance.

Agencies struggle to find equilibrium between incentive levels, services and requirement stringency. Several factors have to been weighed and there is no one-size-fits-all answer. Every agency territory is unique -- climate profiles, customer environmental attitudes, water supply and wastewater issues, and more. These are just a few characteristics that affect the design of a program and the level of incentives and services provided. During the design and planning phase for a future program, an agency needs to launch the program, knowing that the early days are intended to test design elements. Nothing should be unchangeable and locked in long term.

Agencies understand that when there's an urgent requirement for water savings; incentives and customer support needs to be at their highest, while stringency of requirements must remain on the low side. If timing isn't the driving issue then incentives can be lower and more requirements can be in place.

Balance Program Requirements.

Strict requirements ensure water savings and quality standards but lowers participation. When an agency is flexible and gives customers the right amount of "wiggle room," everyone wins. Landscape programs are difficult to complete and customers make mistakes. When program personnel work with customers to find an acceptable solution, those customers will move closer to project completion, instead of abandoning the project, and the agency will see a boost in positive PR.

Program Recommendations

Expand Program Messaging and Tailor to Each Customer.
Over the past decade, drought drove response for most agencies. Now what?

Moving forwards, drought-impacted agencies need to find new customer response stimuli. Without a motivational impetus to spur customer participation, the speed to reach market penetration will be slow going.

One remedy is to expand customer messaging. The fatigued Save Money, Save Water message has yielded results over the years, but in a limited manner. The message appeals to only a small subset of customers; individuals with a strong desire to save money and/or those who passionately care about saving water because it's the right thing to do. Unfortunately, for most agencies, this is a small sliver of the customer base.

Most customers care about saving money and water… to a certain degree, but they don't care enough about it to take action. Monetary savings and water savings are down the list of program "drivers" for most people. If agencies focus exclusively on the money/water savings message, the biggest slice of customers will never be enticed to participate in the program.

The City of Guelph and the Region of Peel use beauty as the motivating theme. The City of Sacramento ties their program into the River Friendly theme and focuses on residents' strong emotional desires to protect the area's rivers. These three agencies have moved away from traditional messaging, with the goal to better reach an emotional response from their customers.

Program Recommendations

Customer questionnaire results showed that customers care more about beauty than water usage or easy care. They also stated that water-efficient landscapes could be beautiful. Agencies need to craft messaging that appeals to customers' desired attributes for their landscape.

Survey results showed that most customers are not fully satisfied with their current landscaping. Sixty-nine percent say they've considered removing all or part of their lawn. This is an opportunity to sell turf removal as an upgrade to a customer's existing landscape.

Customer motivations run the gamut. While customer John Smith cares passionately about the environment, his neighbor cares about having the best looking yard in the neighborhood. Landscape transformation programs can appeal to both of these customers, *if the messaging resonates*. Programs must have multiple messages in order to reach a broader range of customers.

Supply Chain Recommendations

The supply chain needs to be invigorated and better connected with the water-efficiency industry that it serves. With so much focus on program design and customer needs, the importance of the supply chain is often overlooked.

In the days of active toilet and high-efficiency washer programs, the manufacturers and distributors worked collaboratively with water industry professionals. Together manufacturing issues were identified and fixed, product testing and certification standards were created, and product promotions were initiated. The collaborative team worked to achieve a market transformation for both products.

With the landscape supply chain, there is a "disconnect" between manufacturers, distributors, retailers, and water agencies. Quality issues with drip irrigation and high-efficiency nozzles remain unaddressed. There is limited testing and certification standards for these products beyond smart controllers. Additionally, plant availability at 'Big Box' and nurseries is often sub-standard, negatively impacting landscape conversion programs.

The water industry should consider reinvigorating their relationship with supplier chain players. Through a commitment to regular and more open dialog, major issues can be discussed and plans for resolution can be reached.

Industry Recommendations

It's Time to Lead with Technology.

As the water industry shepherds its programs into the future, there are critical choices to make:

1) Should water agencies follow along the same arduous path, making minor modifications to better tweak response? OR

2) Is it time to innovate, work towards data-driven insight, and better engage with customers?

The long-term and ultimately most cost-effective solutions can be found with software apps, big data, analytics, and personalization. Once implemented, it will lead to better customer support, higher program response rates and water savings, and happier customers.

Consider Industry Initiative to Produce On-line Landscape Design Software Tool.

Customers want and need design support. Without it, they'll make errors in the design of their irrigation equipment; create run off; place plants in incorrect locations and more.

An interactive landscape design application would be an information resource and design tool for customers. With this tool, agencies may be able to cut back on the use of expensive landscape consultants and reduce program staff time required for site visits and follow-up calls.

In today's world, web-based customer applications and information retrieval is, not only desired, but also expected, by customers.

Industry Recommendations

## Make the Shift to Big Data and Predictive Analytics.

Big Data and Predictive Analytics is no longer an experimental endeavor; it's a practical pursuit within organizations. With today's information-rich world, most large consumer companies already possess, or are in the process of developing, software and services to better understand their customers now and into the future.

Now is the time for the water industry to initiate a collective stratagem for the adoption of Big Data and Analytics for landscape transformation.

Big Data is a collection of structured and unstructured data from multiple sources, both internal and external to the organization. Once data is cleaned and compiled, it can be mined for information and insights.

Water agencies can next utilize descriptive analytics, which provides a "summary view" to better understand customers. *Descriptive analytics* uses two primary techniques: data aggregation and data mining. The goal is to present past data taken from Big Data and present it in an easy to understand format.

Going a step further, agencies can next apply predictive analytics which extracts information, uses modeling and algorithms, and identifies the likelihood of future outcomes. *Predictive analytics* would be used to identify those customers most likely to participate in target programs, determine their probable emotional drivers, and response platforms.
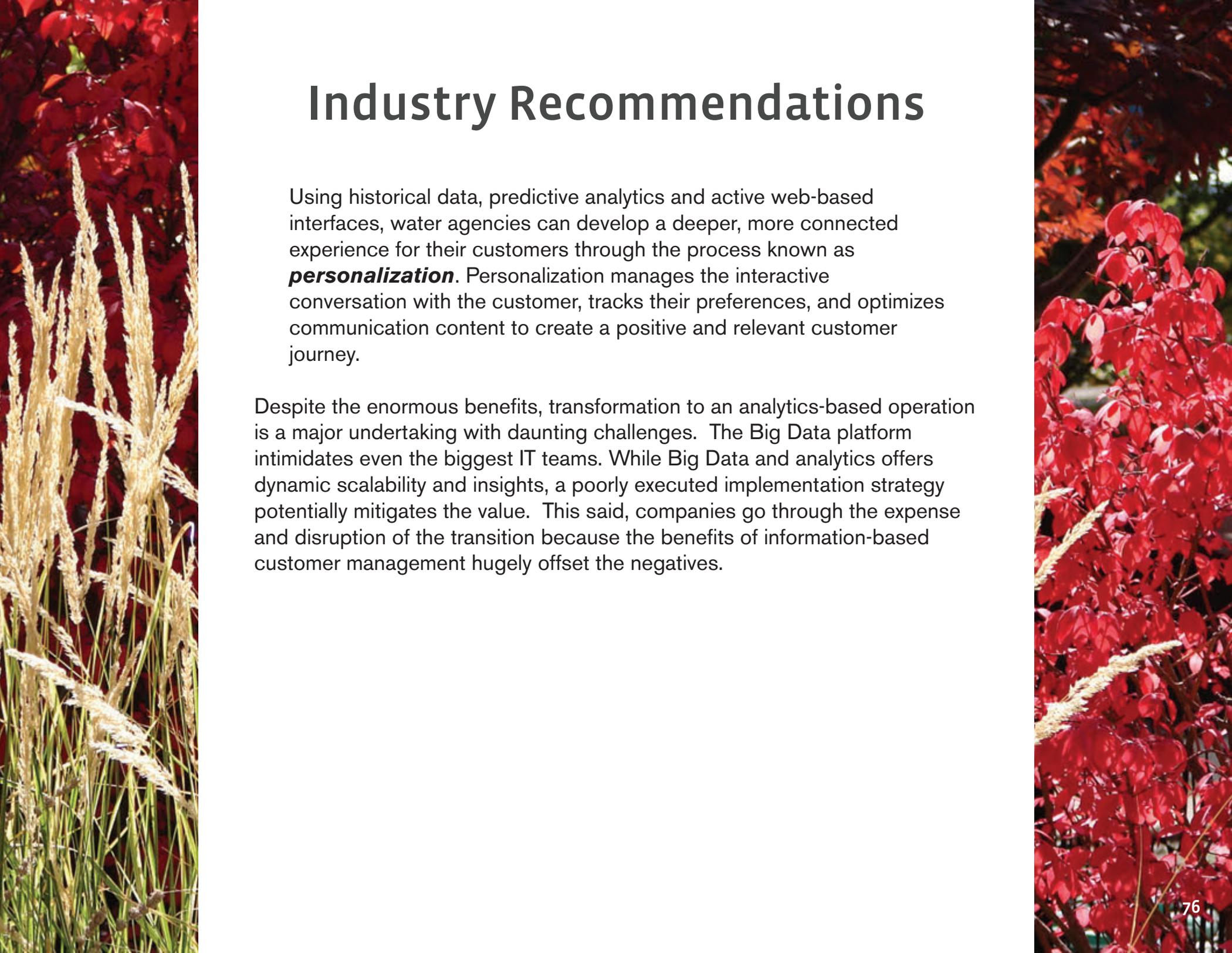
Industry Recommendations

Using historical data, predictive analytics and active web-based interfaces, water agencies can develop a deeper, more connected experience for their customers through the process known as **personalization**. Personalization manages the interactive conversation with the customer, tracks their preferences, and optimizes communication content to create a positive and relevant customer journey.

Despite the enormous benefits, transformation to an analytics-based operation is a major undertaking with daunting challenges. The Big Data platform intimidates even the biggest IT teams. While Big Data and analytics offers dynamic scalability and insights, a poorly executed implementation strategy potentially mitigates the value. This said, companies go through the expense and disruption of the transition because the benefits of information-based customer management hugely offset the negatives.

Industry Recommendations

The water industry can, and should, start small and take a methodical step-by-step approach.

- Create a team – include a cross section of disciplines and water agency service areas.
- Articulate specific industry/agency desired goals and outcomes of Predictive Analytics for Landscape Transformation Programs.
- Identify agency/agencies with interest in pilot program. Select agencies with clean customer data and willingness to utilize said data.
- Implement a data aggregation pipeline that merges and transforms (clean, enforce structure) existing data sources (CIS, site information, vendor data) so it could be easily queryable.
- Identify 3rd party data sources that would be useful and relevant to the analysis and integrate it into the aggregation pipeline.
- Build an analytics platform that supports various analytical methods such as combinatorial statistics, clustering techniques, regression testing, data modeling etc. and automate processing on a periodic job schedule.
- Implement a testing framework that will evaluate new data against models generated from historic data as a preliminary predictive analytics pilot.
- Expose both the raw data, data models and analysis as a sensible API that can be used with user-friendly and familiar business intelligence tools such a Periscope or Excel for data visualization, further analysis and report generation.
- Generate customer segments/profiles and predictions on likely to participate in target programs, determine probable emotional drivers, and response platforms.

Interactive, long-term customer relationships are vital to the goal of full landscape transformation and robust lifetime savings.

It may take years for a customer to retrofit, in full, all irrigation equipment and turf areas. In order to increase participation, minimize abandonment, and encourage customers to take the next step, water agencies must become adept at maintaining customer engagement.