

This presentation premiered at WaterSmart Innovations

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Targeted Site Visit Research Study

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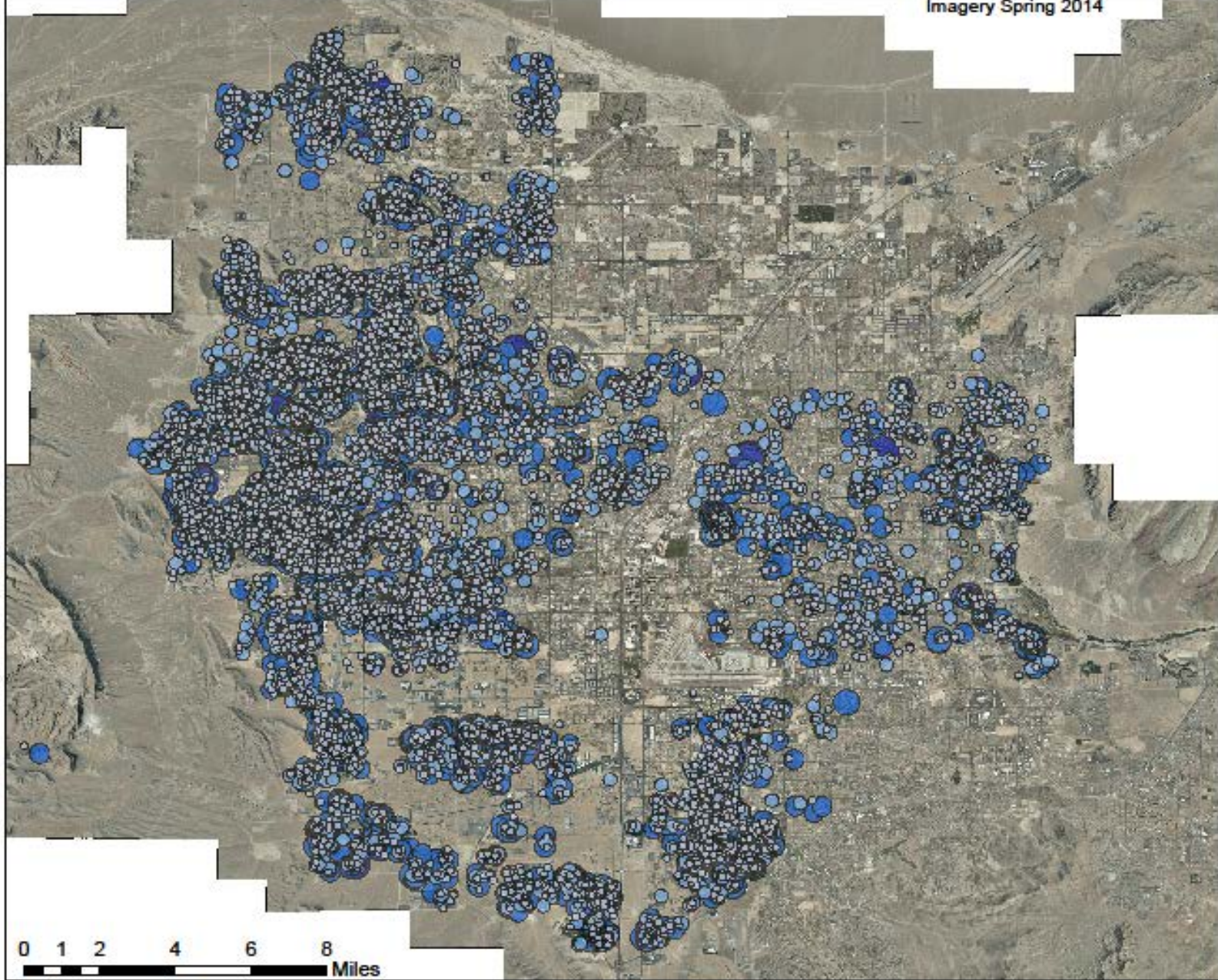
Objectives

- Purpose of the Study
- Background
- Methodology
- Initial Use Analysis
- Follow-up Analysis
- Pilot Project

Purpose

- Can site visits and customized messaging targeted towards high water usage single-family residential (SFR) households be an effective tool to educate residents and reduce water consumption in the Las Vegas Valley?

- We are looking at the top 5% of water users based on water use per square footage of lot size (2010-2014)
 - 15,508 parcels
 - Average of approximately 311,000 gallons used annually
 - The overall average LVVWD wide is about 143,000 gallons per year
 - Just a 5 to 10 percent reduction could save 15 to 30 thousand gallons per property annually



- Legend**
Usage by Sq/Ft
- 42.96 - 49.20
 - 49.21 - 57.80
 - 57.81 - 71.50
 - 71.51 - 100.99
 - 101.00 - 194.76

0 1 2 4 6 8 Miles

History

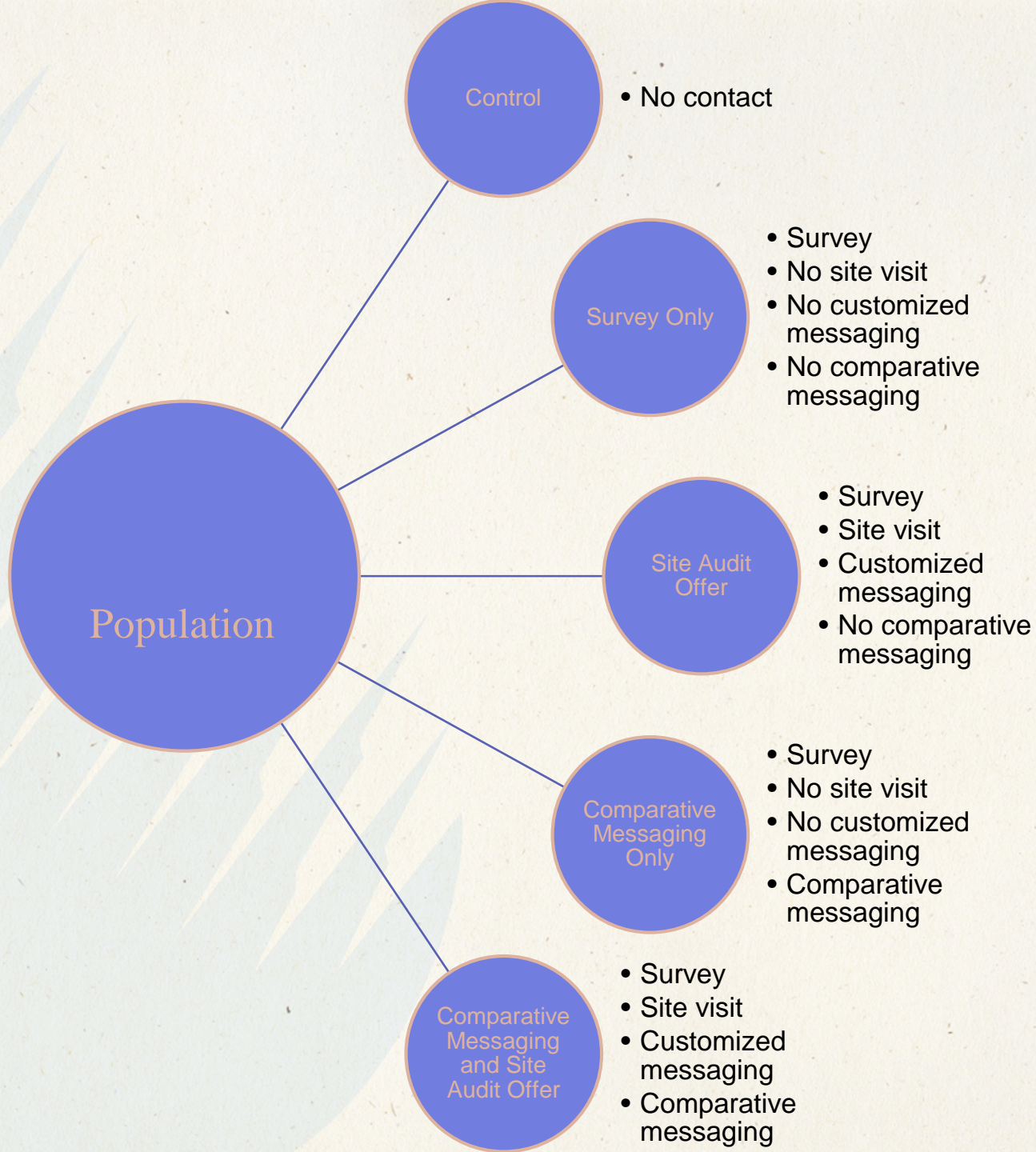
- Evaluation of past SNWA site visits found no significant reduction in water usage (2001)
- Site visits targeted towards higher water using SFR properties have had some success in other municipalities (San Antonio, Valencia)
- Targeted “marketing” towards high water using properties has proven success in reducing demand in other areas (EBMUD)
- Interest in resuming site visits found in Conservation Knowledge and Support team brainstorming session among employees and stakeholders

Research

- Background research on behavioral theory, conservation, site audits, etc...
- Site audit program interviews completed
 - SDCWA
 - Valencia Water
 - SmartUse
 - EBMUD
 - SAWS
 - Denver Water
- Site audit observation trips completed
 - SmartUse (Albuquerque, NM)
 - Valencia Water Company (CA)

Methodology

- Split study population into five groups for different treatments
 - Distribute mailings and wait for responses from homeowners
- A target of ≈ 200 properties to receive site audits by the conclusion of the study.
- Monitor water usage for two years
- If successful, may become a pilot project for SFR sector

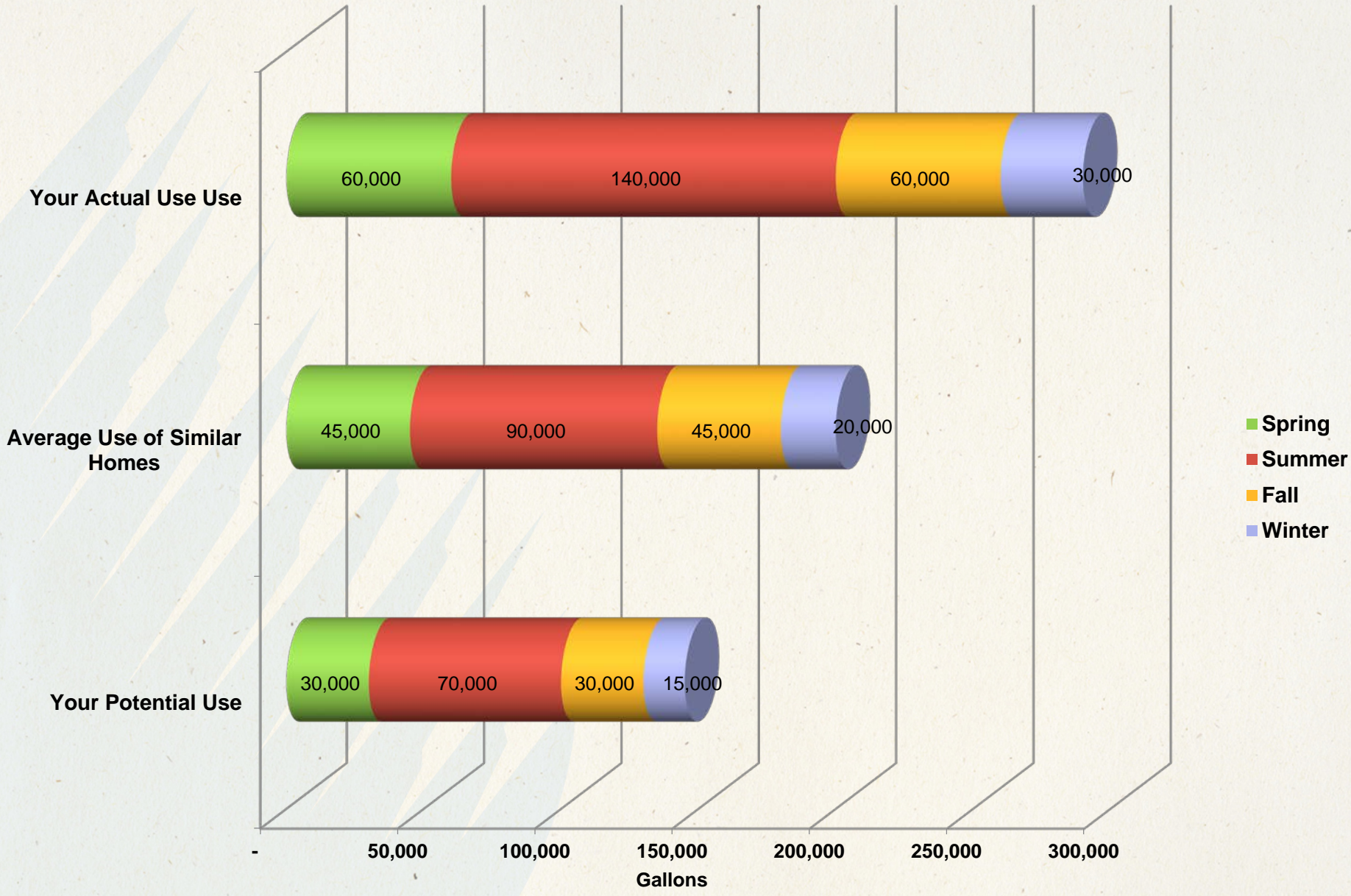


Site Visits

- Perform inventory of indoor fixtures and appliances
- Test as far as possible for leaks
- Catalog outdoor landscaping
- Inspect irrigation system
 - Timers, irrigation components
 - Record flow rates by station and clock settings
- Give recommendations to reduce usage
 - Reduce irrigation run times
 - Convert non-functional turf
 - Replace inefficient fixtures
 - Fix leaks

Comparative Messaging

- Give their usage vs. comparable properties
 - Similar sized
 - Within their neighborhood
 - Idealized “efficient” usage
- Compared their current usage with their previously lower usage
- Show how much can be saved by changing behaviors or making modifications (info on rebate and incentive programs)



2015 Initial Results Summary



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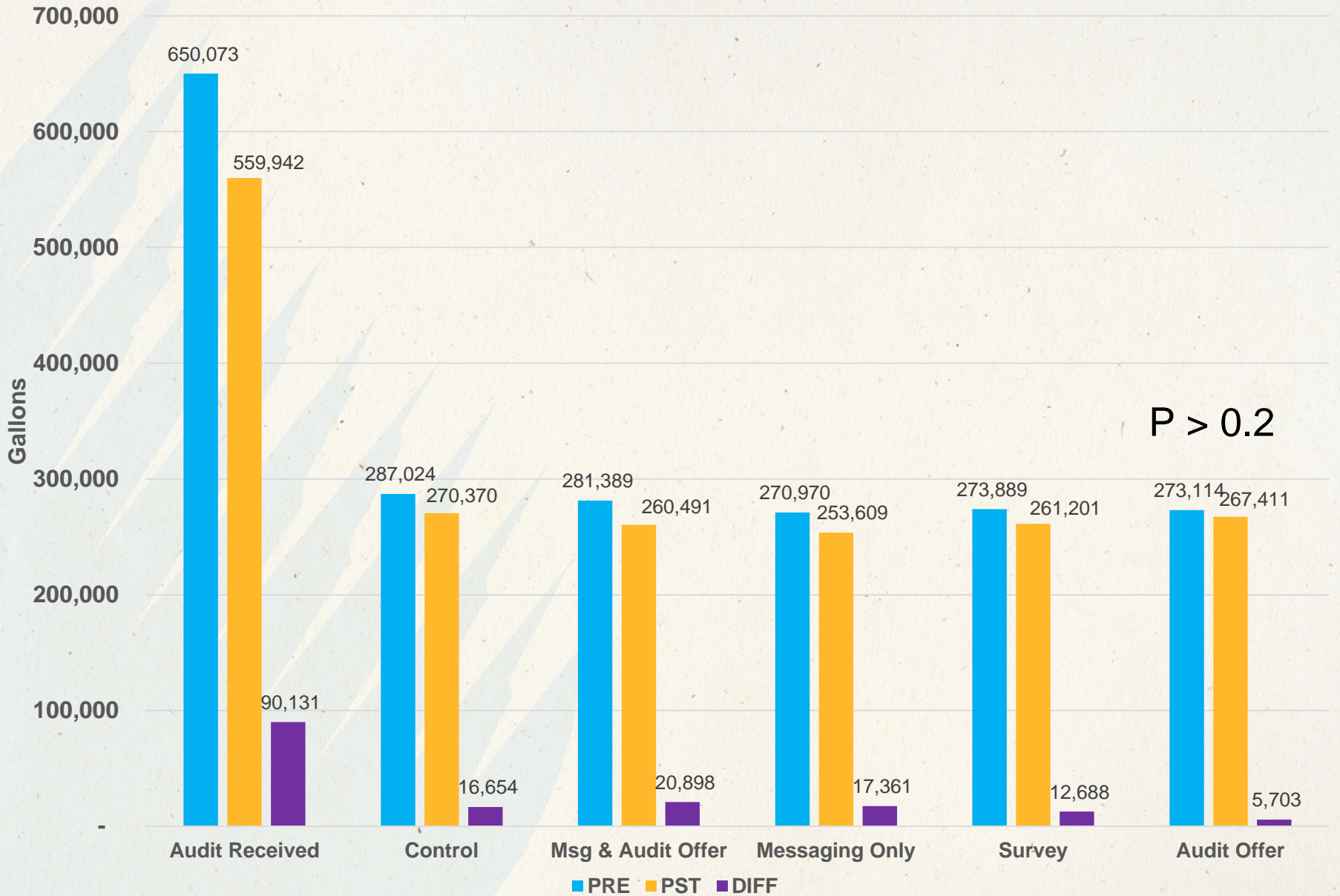
Usage Analysis Method

- Wanted to compare similar timeframes as much as possible
 - Complete 12 months pre/post usage
 - Looked at properties that were mailed letters between late Jun 2015 and Aug 2015
 - PRE Usage = Sep 2014 - Aug 2015
 - PST Usage = Sep 2015 - Aug 2016
- Discarded all properties that enrolled in WSL during timeframe
- Discarded properties with months of zero usage within timeframe
- Simple t-tests for significance

Comparison Groups

- Control - No contact, N = 2,765
- Survey - Only received a survey, N = 183
- Messaging - Only received comparative messaging, N = 185
- Message & Audit Offer – Received audit offer with comparative messaging, but did not participate N = 365
- Audit Offer – Audit offered but did not participate, N = 369
- Audit Received – Indoor / outdoor audit actually performed, N = 11

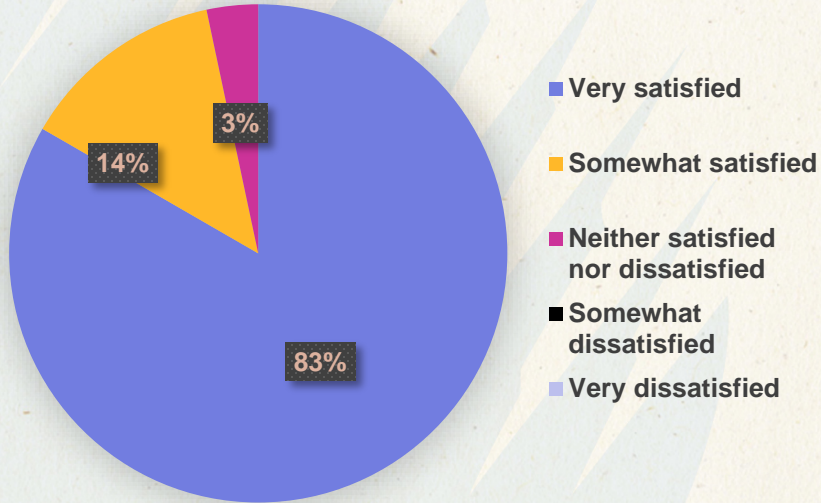
Average Pre / Post Usage



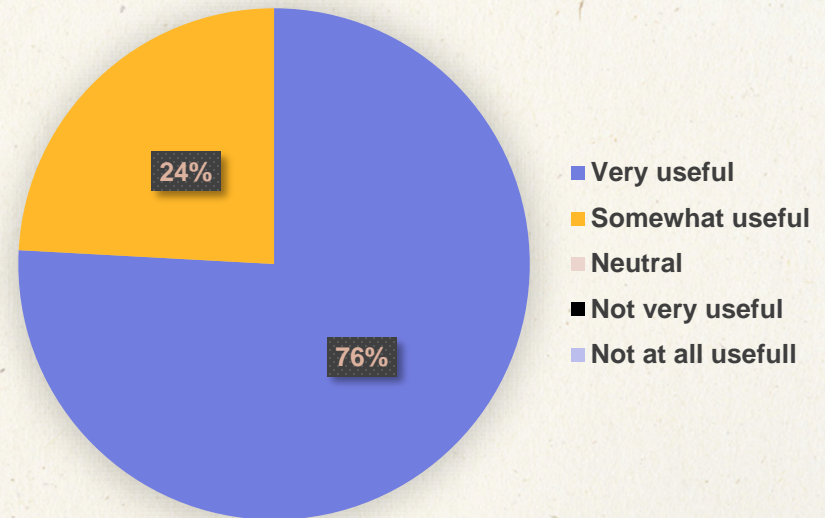
Satisfaction Survey

Sent out 105, received 30 back – 28.6 % response rate

Overall, how satisfied or dissatisfied are you with the site audit experience?



How useful did you find the summary report we emailed you after the audit?



Leaks

- 68 properties had some form of leak
 - 52%
 - 24 toilet related
 - 15 irrigation related
 - 8 service line
 - 2 water softener
 - 3 RO system
 - 6 multiple issues

- Over 90% had less than 1 gpm leak

- Over 50% had less than 0.1 gpm leak

2017 Update



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2017 Analysis

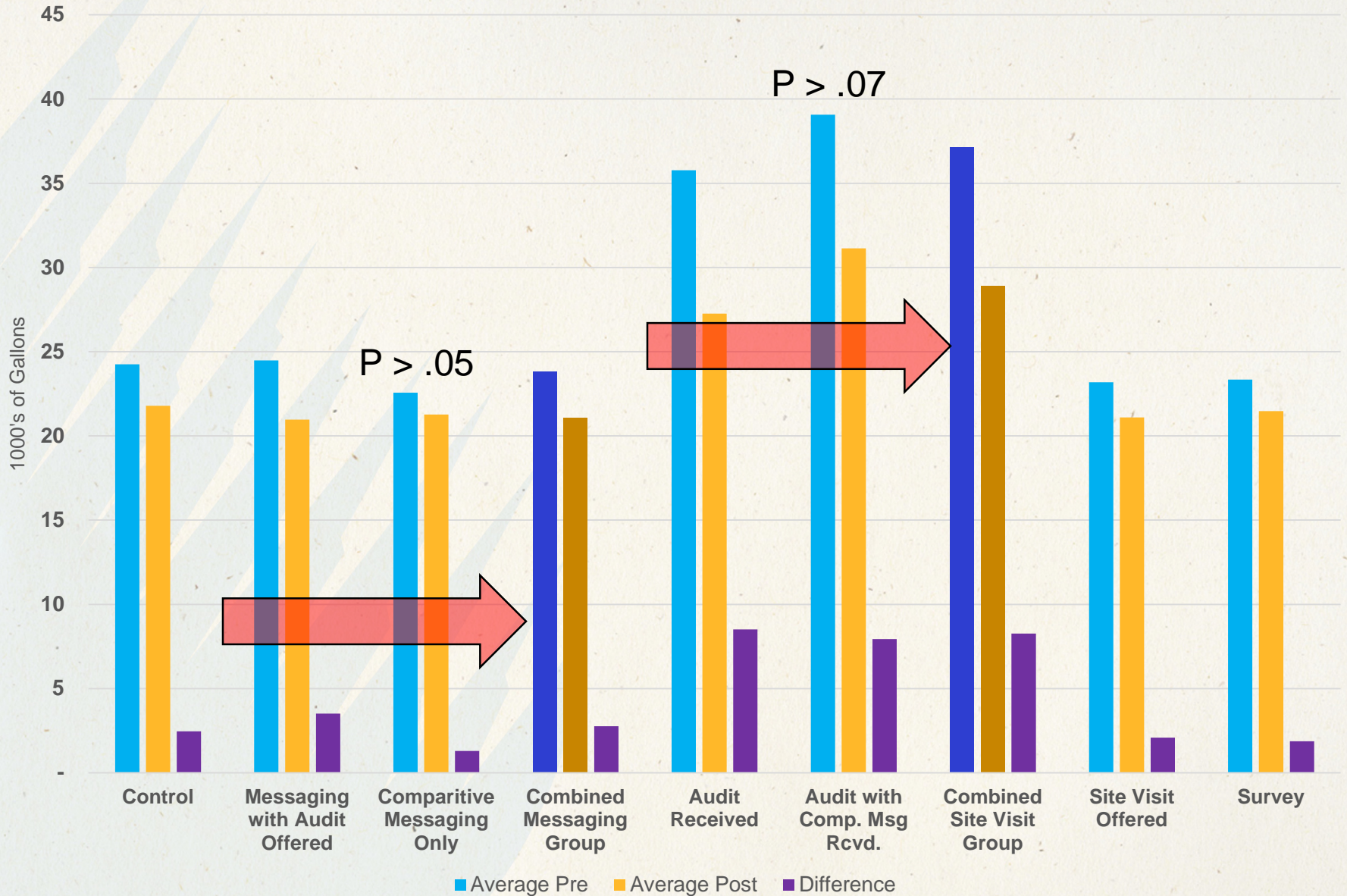
- Used same properties as 2015 analysis with these modifications:
 - Removed all that participated in any other conservation program: Water Smart Landscapes, Pool Cover Coupon & Smart Irrigation Clock Rebate
 - Removed any that had gaps in monthly usage
 - Increased number of audited properties
- Expanded pre & post monthly timeframes – on average 21.6 months for all except audited properties at 16.8
- Merged the groups that received Comparative Messaging and those that received audits into two additional “meta” groups
- Had enough members of both Site Visit (Audit) groups to do independent analysis of each this round

2017 Analysis Groups

- Control: N = 2,616
- Messaging with Audit* Offered (but did not participate): N = 352
- Comparative Messaging Only*: N = 179
- Audit Received**: N = 46
- Audit with Comparative Message Received**: N = 34
- Site Visit Offered (but did not participate): 354
- Survey: N = 173

* And ** Groups indicate members of meta groups.

2017 Average Pre vs. Post-contact Usage Comparison



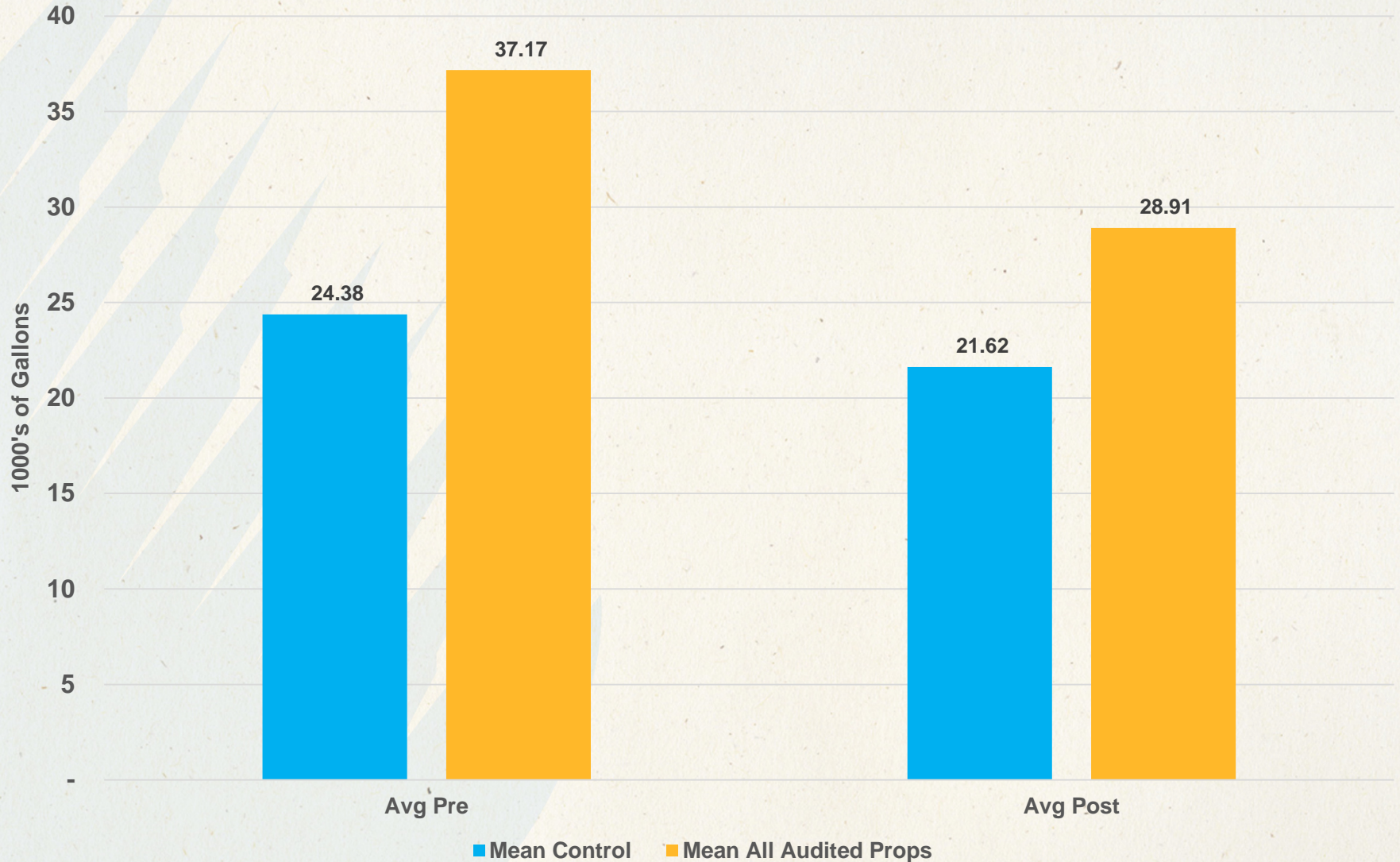
Control vs. Audited Property Timelines

	Months Available for Pre / Post Analysis											
GROUP	12	13	14	15	16	17	18	19	20	21	22	23
Control							1	2		1008	1608	1
Message / Audit Offered									47	178	127	
Comp. Message Only										24	102	53
Audit Received	9	6	4	1	3	3	3	5	9	3		
Audit & Comp Msg Received		5	3		3	5	5	3	4	5	1	
Site Visit Offered							1		42	161	87	63
Survey								1	1	52	85	34

New Control Timeline

	Months Available for Pre / Post Comparison										
Control Group	12	13	14	15	16	17	18	19	20	21	22
Control For Audits Only	196	262	164	32	98	98	33	262	98	130	33
Control for Audit & Msg	98	98	65		98	164	229		327	131	

Audited Properties vs. Matched Controls



Savings Estimate

- All audited properties average monthly use before our visit: 37,169 gallons, 28,909 post-visit. 8,260 gallons difference
- Control sites represent background conservation rate: $24,378 - 21,624 = 2,753$ gallons difference
- $8,260 - 2,753 = 5,507$ gallons saved per month
- **66,080 for a 12 month period!**

Pilot Project

- In process for a fall 2017 roll out – limited to Las Vegas Valley Water District customers.

- Major Challenge - managing workflow
 - Approximately 30 minutes is needed for each site audit administratively before visit (appointment preparation)
 - 2.5 hours needed for each audit including drive time (some required more)
 - Approximately 1 hour is needed to prepare each report (reduce with automation)
 - Approximately 45 minutes is needed administratively for each audit after each visit (study related work)
 - Currently about five hours total for each audit – look to cut to three.

Questions?



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