



OUTDOOR WATER USE DISCUSSION

5/22/18



THE WATERING PROBLEM



- Limited Supply and the resources needed to increase supply
- How to meet the governors challenge of reducing water use by 25%
- Outdoor water use is roughly 60 – 70% of all water consumed during the irrigation season



WOULDN'T IT BE NICE TO...



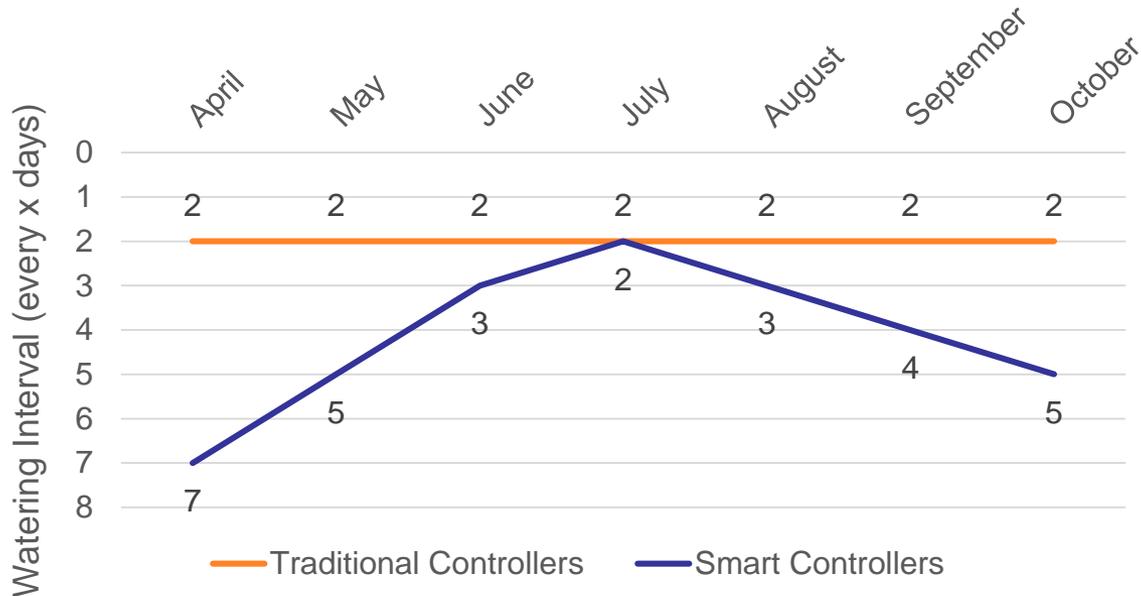
- Understand and measure demand
- Create awareness to naturally motivate better decisions
- Use innovation to support conservation efforts



WATER USE



Water Interval – Traditional vs. Smart



November 14, 2015



April 13, 2016

WATER USE



Insight: Weber Basin meter data shows the tale of a customer who uses the same settings, year after year, rain or shine. It's likely the small variation is simply due to water pressure variation.

Device Id	Date	10:00 AM	09:00 AM	08:00 AM	07:00 AM	06:00 AM	05:00 AM	04:00 AM	03:00 AM	02:00 AM	01:00 AM	Total
33417444	6/13/2013	0	1	0	0	0	0	171	790	685	771	2418
33417444	6/12/2013	0	0	0	0	0	0	170	796	676	750	2392
33417444	6/11/2013	0	0	0	1	0	0	169	764	668	738	2340
33417444	6/10/2013	1	0	0	0	0	0	174	777	658	718	2328
33417444	6/9/2013	0	0	0	0	0	0	224	775	726	751	2476
33417444	6/8/2013	1	0	0	1	0	0	171	779	691	725	2368

Device Id	Date	10:00 AM	09:00 AM	08:00 AM	07:00 AM	06:00 AM	05:00 AM	04:00 AM	03:00 AM	02:00 AM	01:00 AM	Total
33417444	6/13/2014	0	0	1	0	0	0	173	810	573	743	2300
33417444	6/12/2014	0	0	0	0	0	0	180	792	571	744	2287
33417444	6/11/2014	0	0	0	0	0	0	182	796	580	743	2301
33417444	6/10/2014	0	0	0	0	0	0	170	789	560	728	2247
33417444	6/9/2014	0	0	0	0	0	0	278	761	546	715	2300
33417444	6/8/2014	0	0	0	0	0	0	175	802	552	729	2258

WATER USE



Insight: Weber Basin meter data shows the tale of a “set and forget” customer who uses more water in the last week of September than in the heat of July! Unfortunately this example is not unusual.

Device Id	Date	10:00 AM	09:00 AM	08:00 AM	07:00 AM	06:00 AM	05:00 AM	04:00 AM	03:00 AM	02:00 AM	01:00 AM	Total
33417691	7/8/2015	5	13	15	15	181	647	875	789	50	29	2623
33417691	7/7/2015	0	0	0	0	172	656	896	786	32	0	2542
33417691	7/6/2015	0	0	0	0	176	668	916	810	31	0	2601
33417691	7/5/2015	0	0	0	0	176	692	941	836	31	0	2676
33417691	7/4/2015	1	17	10	10	17	602	952	826	47	16	2498
33417691	7/3/2015	0	0	0	0	0	570	921	792	27	0	2310

Device Id	Date	10:00 AM	09:00 AM	08:00 AM	07:00 AM	06:00 AM	05:00 AM	04:00 AM	03:00 AM	02:00 AM	01:00 AM	Total
33417691	9/30/2015	0	0	0	0	135	640	951	807	108	0	2641
33417691	9/29/2015	0	0	0	0	139	661	977	822	106	0	2705
33417691	9/28/2015	0	0	0	0	138	649	961	824	106	0	2678
33417691	9/27/2015	0	0	0	0	146	669	974	834	105	0	2728
33417691	9/26/2015	0	0	0	0	144	675	992	836	104	0	2751
33417691	9/25/2015	0	0	0	0	137	645	943	811	102	0	2638

What it means for water use



- Saves ~.5 gallons per flush
- 12 flushes per day – 6 gallons in savings
- Yearly water savings – **2,190 gallons**



- Average home uses ~3000 gallons per watering
- Smart controllers save approximately 30-50% water use
- Yearly water savings in Utah with smart timers – **108,000 gallons** per household, or **56 billion gallons** across all 520,000 detached homes in Utah

WATER USE



This is what
2,500 gallons
looks like...

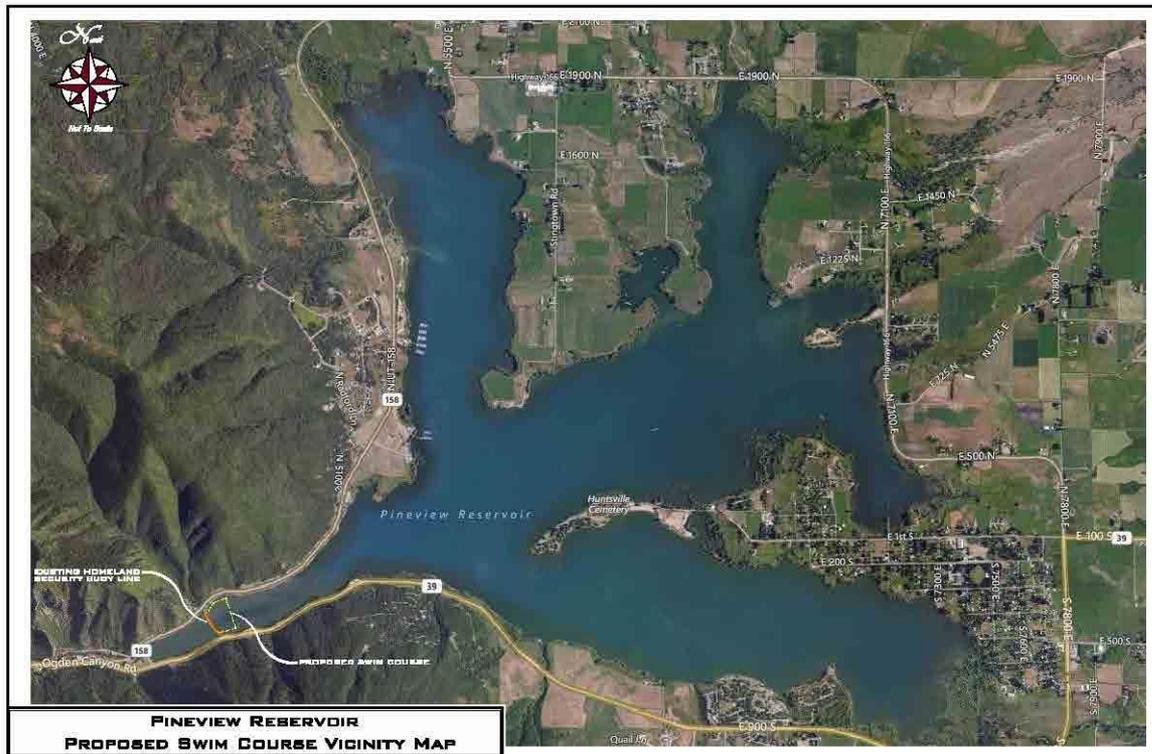


HOW MUCH IS THAT?



56 billion gallons = 172,312 acre feet of water

Pineview Reservoir = 110,150 acre feet of water



What is the incentive to change?

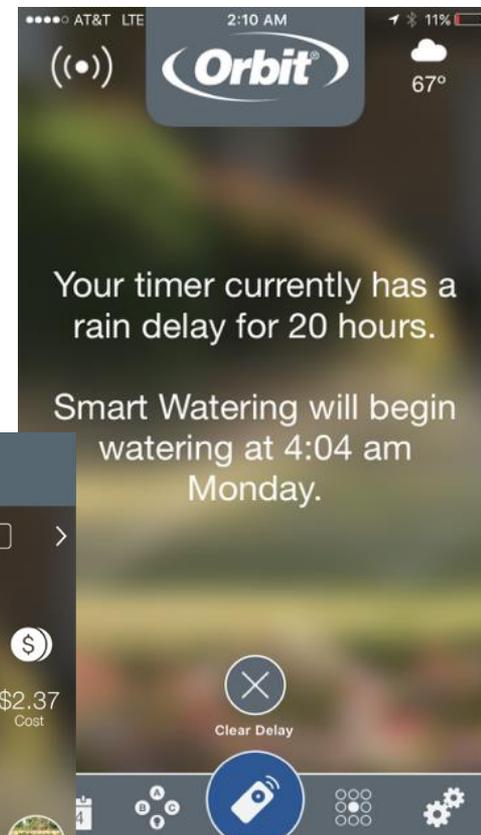
Rebate Eligible Smart Irrigation Controllers

- Save up to 50% water use
- EPA WaterSense Certified
- SWAT Certified
- Receive a local weather feed
- Automatically adjust based on the weather
- Rebate eligible



Change Consumer Behavior

- Automated rain delays – we are actually encouraging homeowners to set it and forget it
- Information in the palm of your hand to help you make better choices
- Show usage and translate gallons to \$\$\$
- Customers are interacting with their irrigation systems as often as 5 days per week (opening the app) compared to start-up in April and shut-down in October



Positive Experiences with Smart Controllers

"Latest water bill. 28% less water used than a year ago,
19000 gallons saved in one household in one month. "
- Joel Weight, Sandy UT



Stay the Course...and Expand

- With state funding, the water savings goal can become a reality
- Controllers are affordable - \$59 to \$250
 - Rebates make controllers more accessible to consumers
- Continue testing and refining technologies
 - Public/Private partnerships
 - Local metered test with Water District – **39% savings from April through June**
- Most smart controllers are replacing a working, non-smart controller
- One Utah rain storm in year one – **30 million gallons saved!**
- **15k connected B-hyve controllers in Utah – ~1.2B gallons saved**
- Look at watering efficiencies in Ag

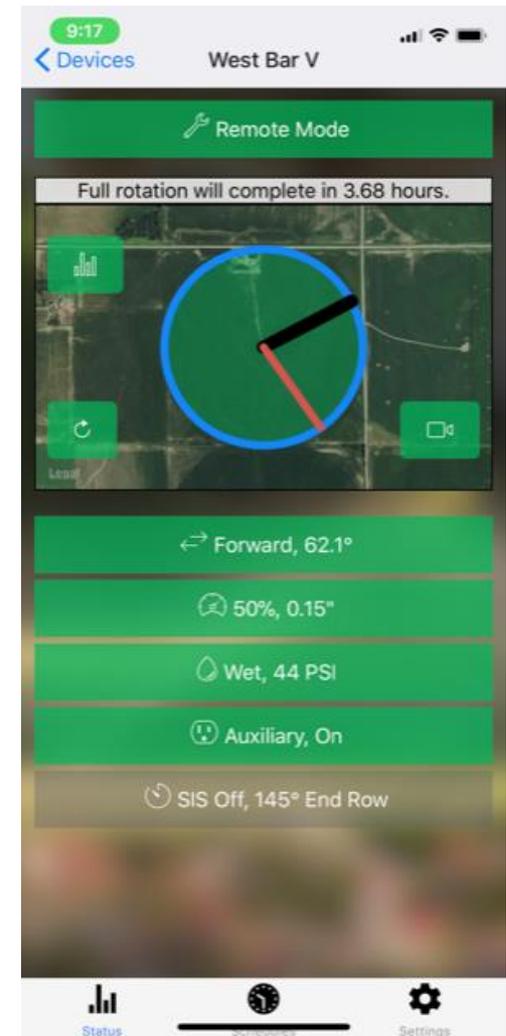


Changing the Paradigm at the Farm – Pivots

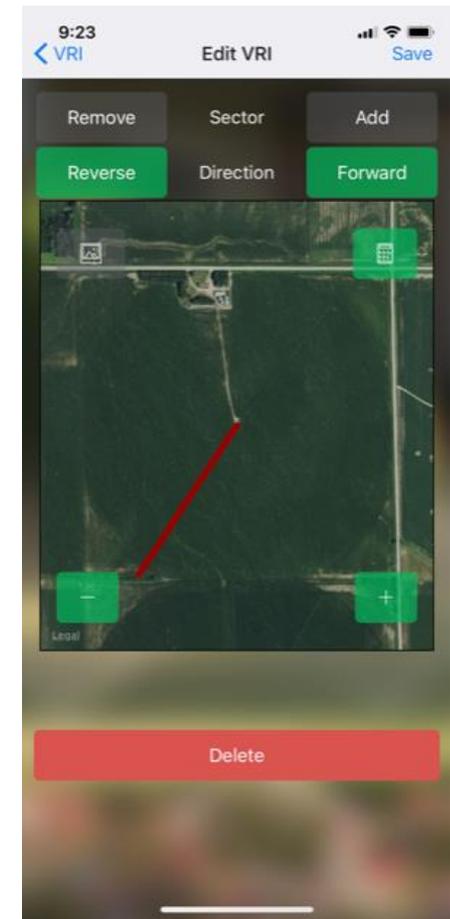
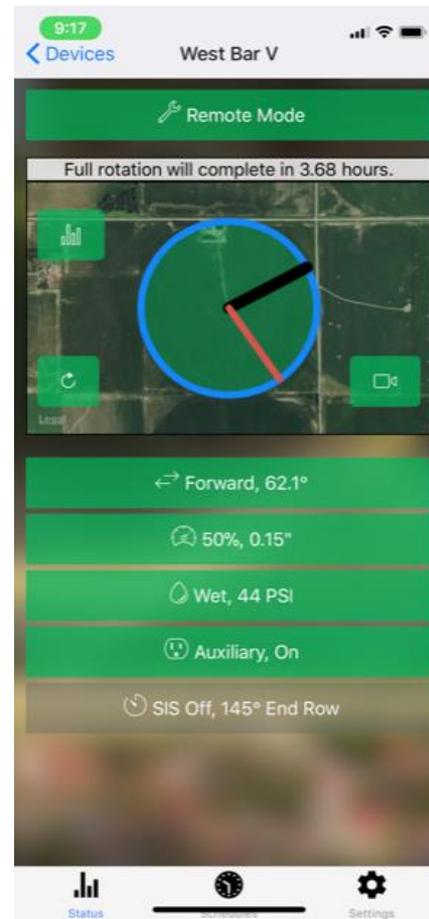
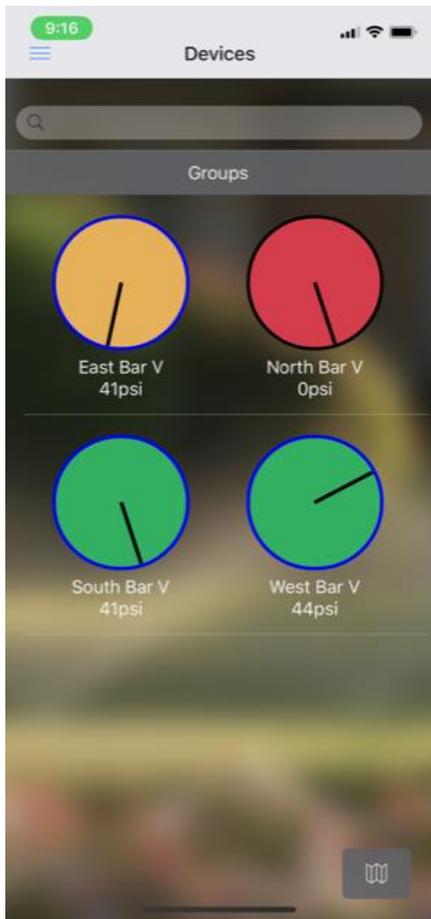
- **1,000 gallons** of water per minute
- Run **24/7** most of the year
- **12 labor hours** to turn off 90 pivots
 - **8.2 million** gallons used after a decision to stop watering!
 - **Extra pump costs** - \$3,500/month per pivot to run a pump
 - **Long hours** – this effort may happen in the middle of the night
- There are approximately 30 shut down events per year in Utah. This uses an additional **246,000,000 gallons** of unneeded water for one farm to turn off the water 30 times.
- An additional savings of **2.7 Billion gallons** saved from being 'off'

B-hyve Farm

- Reduces the time to shut-off pivots from 12 hours to 2 minutes
- Saves 99% shut-down water use from traditional pivot controls
 - **8.1 million gallons saved while shutting off 90 pivots**



B-hyve Farm App



B-hyve Farm in Utah

- Estimated **2,568 pivots** in Utah
- **127 acres** per field (avg.)
- **150 watering days** per year
- **287 Billion** gallons used
- Connected technology can reduce water days by 10%
- Annual Savings – **29 Billion** gallons
 - **89,000 acre feet** of water



Opportunity

- Consider rebates for farmers to convert their pivots to a connected system
- Saving water has a negative connotation with farmers
 - Change the “use it or lose it” laws and mindset
- Offer other incentives for farmers to save water
- Slow the aquifer depletion
- A 10% reduction in water days on farms saves nearly as much as Pineview Reservoir holds

