

# Naramata Water Advisory Committee

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RDOS Pilot Water Meter Study  
2016

# Background

## ▶ Naramata Water System

- *Potable water supply to residents in Electoral Area E*
- *Water demands seasonal → arid climate*
- *3 Primary customers: **agricultural, residential, commercial***

## ▶ Pilot Water Meters

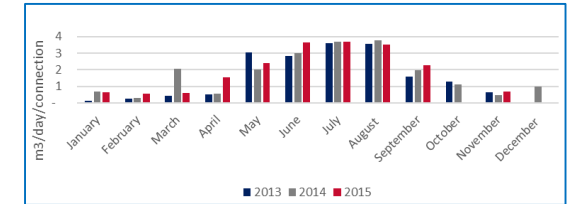
- *Need to explore meter options and study peak demands and possibilities to conserve*
- *Use pilot study to learn pathways for demand management through meters*

Customer Type	Pilot Meters as of August 2015
Agricultural	43
Residential	35
Commercial	34

# Project

## 1. Review and interpret water use data

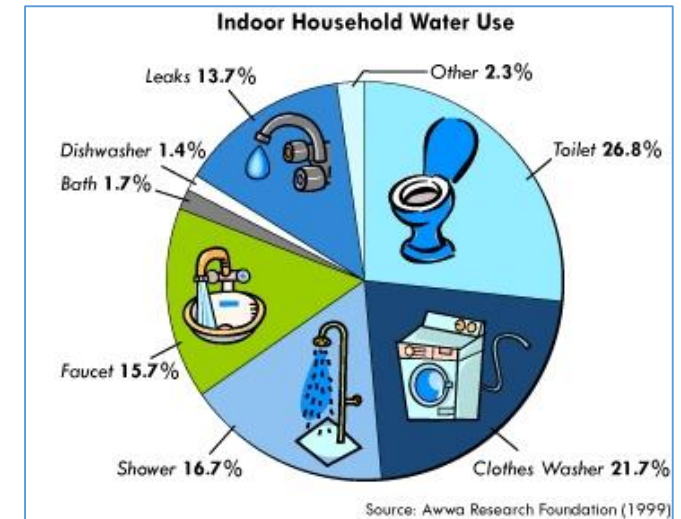
- *>100 meters installed on a mixture of agricultural, residential and commercial connections*
- *Three years of data*



## 2. Develop key water use themes

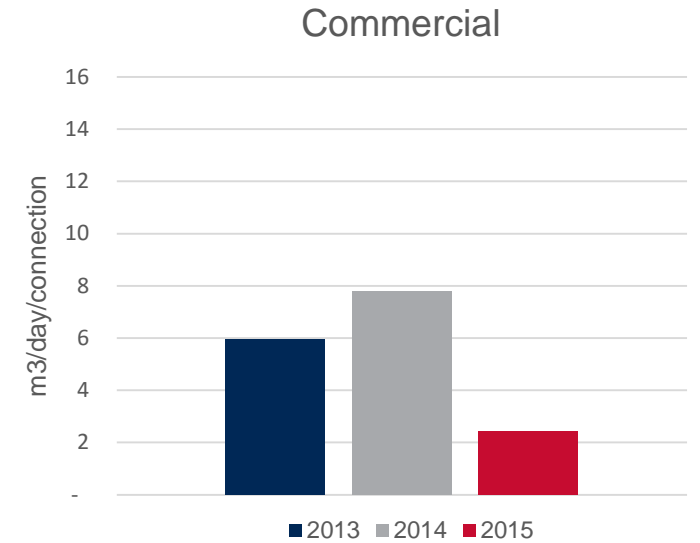
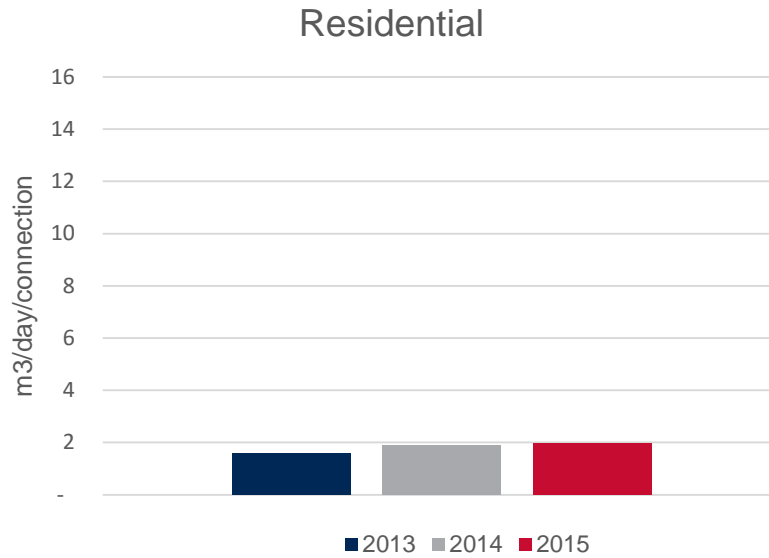
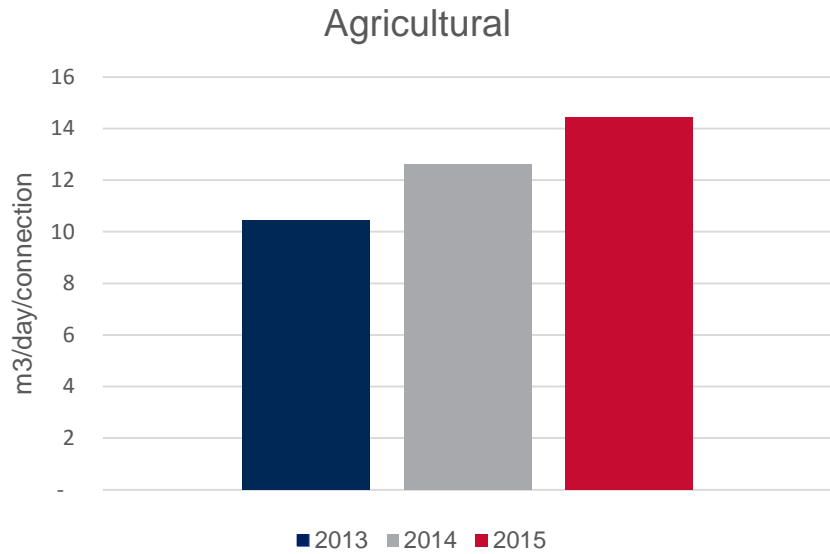
- *Look closely at each customer base*
- *Use data to frame questions for in-depth customer dialogue*

## 3. Provide insights into enhanced conservation



Source:  
AWWARF

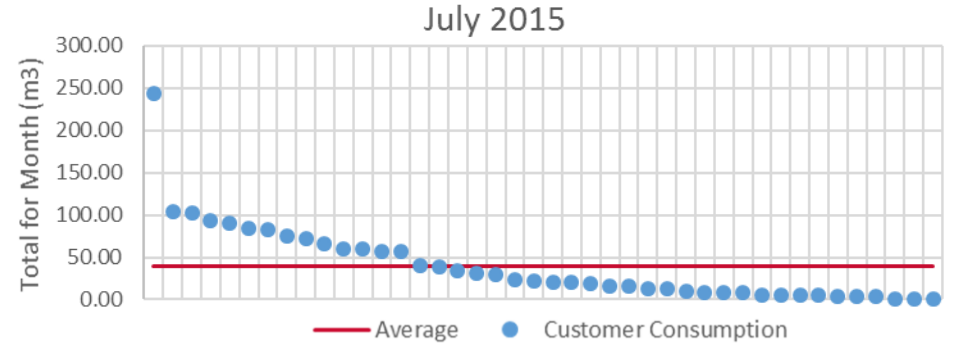
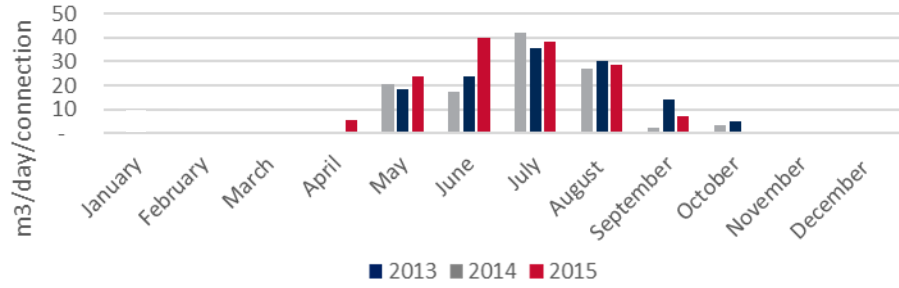
# Water Use and our Customers



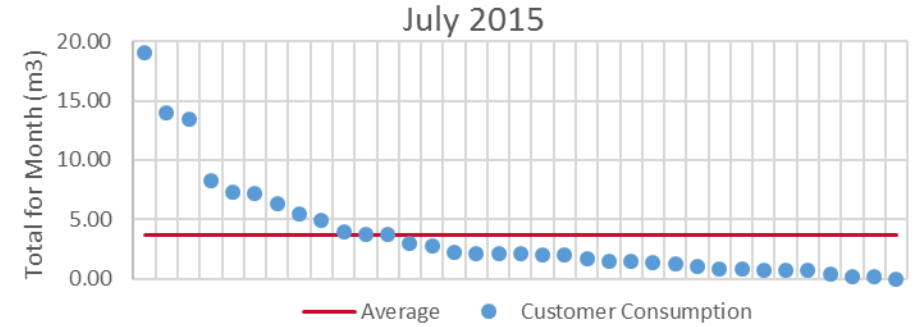
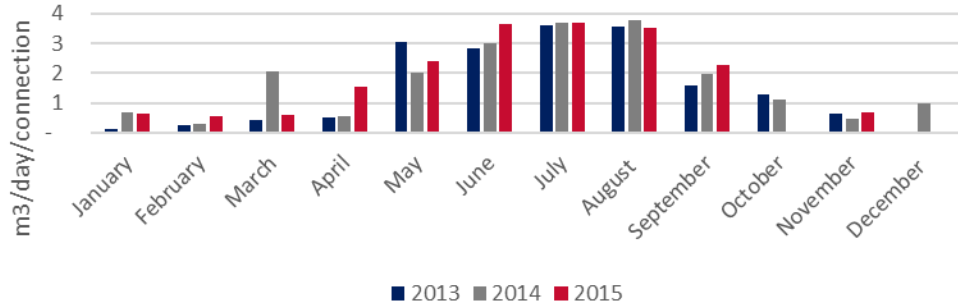
## Estimated Annual Water Consumption Distribution (2015)

- ▶ Agricultural – 70% to 80%
- ▶ Residential – 10% to 20%
- ▶ Commercial – 10%

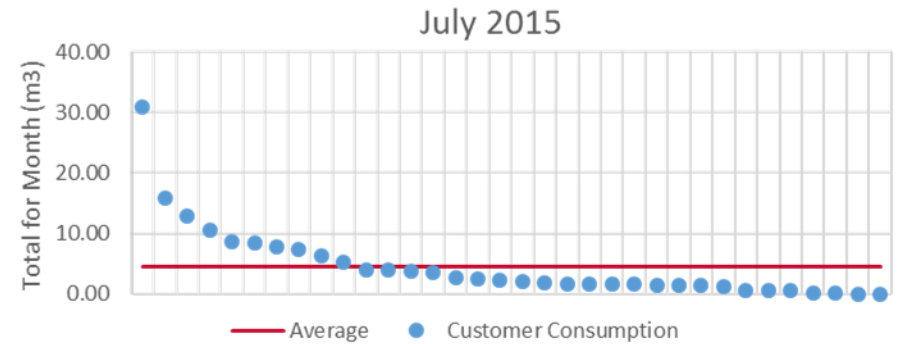
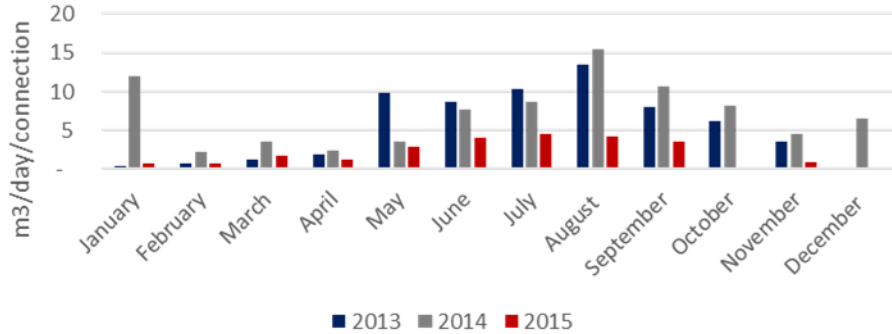
# Agricultural



# Residential



# Commercial



# Areas of Focus

	Data Trends	Key Factors Affecting Water Consumption
Agricultural	<ul style="list-style-type: none"><li>▶ Link between weather data and water use <b>is more clear than</b> metered data and conservation;</li><li>▶ Summer demand 10x winter</li><li>▶ Represents <i>up to 80%</i> of water demand;</li><li>▶ Water usage fluctuates from year to year.</li></ul>	<ul style="list-style-type: none"><li>▶ Crop Type</li><li>▶ Soil properties</li><li>▶ Irrigation technique</li><li>▶ Weather</li></ul>
Residential	<ul style="list-style-type: none"><li>▶ Link between weather data and water use <b>is more clear than</b> metered data and conservation;</li><li>▶ Summer demand 6x winter;</li><li>▶ Represents 10% to 20% of water demand;</li><li>▶ Water usage is relatively consistent year to year;</li><li>▶ 33% of users stand out above the average.</li></ul>	<ul style="list-style-type: none"><li>▶ Hose vs In-Ground irrigation</li><li>▶ Leakage vs frost protection</li></ul>
Commercial	<ul style="list-style-type: none"><li>▶ Large change in consumption as a result of business closures;</li><li>▶ Summer demand 2.7x winter;</li><li>▶ Represents about 10% of water demand.</li></ul>	<ul style="list-style-type: none"><li>▶ Hose vs In-Ground irrigation</li><li>▶ Type of business</li></ul>

# Areas of Focus

	Conservation Focus Areas	Ratepayer Inquiry
Agricultural	<ul style="list-style-type: none"> <li>▶ Link growers with valuable baseline data: crops, soils, climate e.g. OBWB</li> <li>▶ Continue to encourage environmental farm planning incl. soil moisture management, irrigation scheduling</li> <li>▶ Encourage irrigation changeover to high-efficiency e.g. business case analysis</li> </ul>	<ul style="list-style-type: none"> <li>○ <i>How do you schedule irrigation with respect to changes in weather?</i></li> <li>○ <i>What investments are you willing to make to make irrigation more efficient (if any)?</i></li> <li>○ <i>What prevents you from reducing water consumption (if any)?</i></li> <li>○ <i>How can you further leverage industry resources?</i></li> </ul>
Residential	<ul style="list-style-type: none"> <li>▶ Reduce outdoor water use           <ul style="list-style-type: none"> <li>• Water scheduling information and promotions               <ul style="list-style-type: none"> <li>– In-ground scheduling → soil moisture readers</li> <li>– Hose systems → timers</li> </ul> </li> <li>• Education resources for climate/drought sensitive plants</li> <li>• Develop and meet local targets e.g. 25% reduction in water usage by 2020 (Naramata Conservation goal)</li> </ul> </li> <li>▶ Implement water use rate structures</li> </ul>	<ul style="list-style-type: none"> <li>○ <i>How do you decide when and how to water your lawn?</i></li> <li>○ <i>Would knowing your water consumption patterns help inform your irrigation scheduling?</i></li> <li>○ <i>Would you like to receive conservation type tips?</i></li> <li>○ <i>Should those who use more water pay for more water?</i></li> </ul>
Commercial	<ul style="list-style-type: none"> <li>▶ Implement water use rate structures</li> <li>▶ Encourage business cases for high-efficiency hardware and advances in water technology</li> </ul>	<ul style="list-style-type: none"> <li>○ <i>Where do you use most of your water?</i></li> <li>○ <i>How would your business benefit from using less water (if possible)?</i></li> <li>○ <i>What ideas do you have for using less water in your business?</i></li> </ul>

# Why Meter?

## ▶ If you can measure it, you can manage it

- *Knowledge of your water use patterns → raising public awareness*
- *Tracking Naramata's success → how close are we to meeting the goal of 25% less by 2020*

## ▶ Capital Planning and Design

- *Size upgrades/new works to meet actual water consumption needs (system and neighborhood)*

## ▶ Fix leaks

- *Locate & repair – save costs*



# Why Meter?

## ▶ Public health

- *Backflow protection*

## ▶ Drought management

- *On-demand water use behavior*
- *Monitoring our progress during staged water restrictions*

## ▶ Equitable

- *Utility bill based on your use*
- *Example: seasonal charges*

# Being Open to Water Meter Myths

- People, not meters, save water
- Meters don't result in long-term water conservation on their own **but** *they enable other conservation techniques such as a strong price signals (e.g. consumption based pricing)*
- Meters require maintenance and eventual replacement *(i.e. need to invest and reinvest in this useful tool)*

# Recommendations

Consider the sequence. How far can education go?

<b>Approach</b>	<b>How</b>
1. Create a direct link between the customer, service costs and their water use.	<i>Water meters allow for consumption based pricing.</i>
2. Encourage growers to create farm plans and complete sensible irrigation efficiency retrofits to save water.	<i>Engage with agricultural customers to understand their specific ideas and provide information in support.</i>
3. Continue with climate notice systems for proper scheduling for outdoor water use.	<i>Regularly update engagement tactics regarding 'Weather Underground' or FarmWest to inform rate payers of seasonal irrigation needs.</i>
4. Engage with businesses to understand their specific plumbing retrofit opportunities to save water.	<i>Encourage business case analysis to select water saving hardware/technologies.</i>
5. Inform water users in Naramata through ongoing education program.	<ul style="list-style-type: none"><li>▶ <b>Focus 1: Residential Outdoor Usage:</b> <i>Informed water behaviours, tools, and knowledge of water consumption</i></li><li>▶ <b>Focus 2: Agricultural:</b> <i>Farm-specific knowledge of demand management options</i></li><li>▶ <b>Focus 3: Commercial:</b> <i>Targeted business specific efficiencies.</i></li></ul>

Questions ?