

This presentation premiered at WaterSmart Innovations

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Building an Affordable, Water Efficient Home



A Partnership between SNWA and Habitat for
Humanity Las Vegas

SNWA Water Smart Home Program

- First comprehensive new construction water efficiency home program – resulting in over 8,000 homes in the LV valley
- Indoor and outdoor requirements similar to new WaterSense for New Homes program



Water Smart Home Core Requirements

➤ Outdoors

- ❑ Landscape Design
- ❑ Irrigation System Standards
- ❑ Swimming Pools Standards



➤ Indoors

- ❑ Plumbing Standards
- ❑ Appliance Standards
- ❑ Hot Water Delivery



SNWA Water Smart Home Program

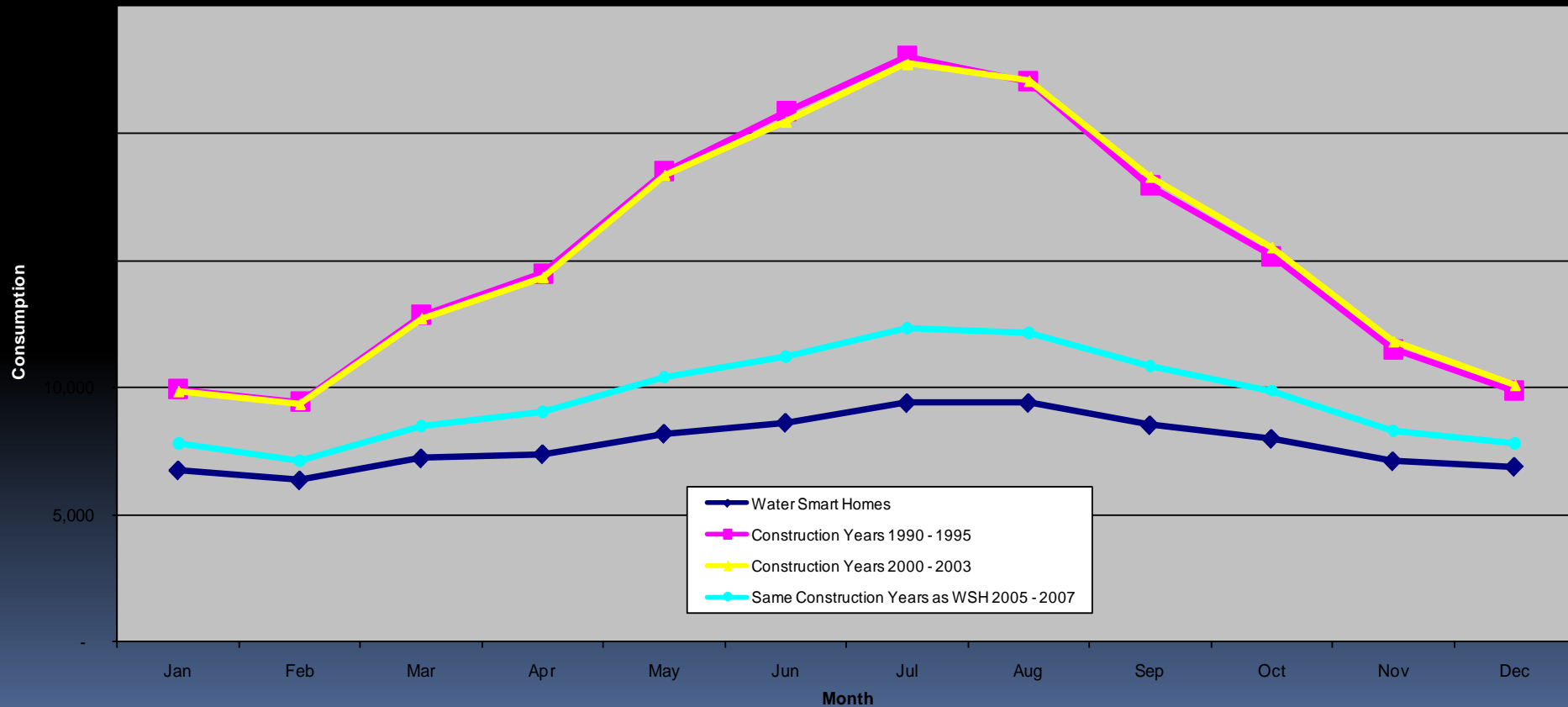
Findings

Recent research of first homes installed in the program show:

- Looked at roughly 1,700 Water Smart Homes and compared to roughly 35,000 pre-drought (pre-2004) homes and 23,000 similar-time built homes
- Almost 50% water savings compared to homes built prior to 2004 – when landscape ordinances went into effect
- 20% savings compared to homes built during the same time, no turf in front yards but without efficient fixtures, appliances, hot water delivery etc.

SNWA Water Smart Home Program Findings

Average Monthly Consumption
Two calendar years of 2007-2008





Beginning of a Successful Partnership

- Through partnership with Southern Nevada Homebuilders Association (SNHBA), an early relationship with Habitat for Humanity Las Vegas was formed
 - Over a five year span, SNWA provided several presentations on the Water Smart Home program and the benefits to members of the SNHBA
 - Habitat for Humanity staff were present for most of those presentations
- In early 2008, SNWA started discussions with Habitat for Humanity and developed understanding of Habitat's business process
- Because Habitat for Humanity works primarily off of donated funds and donated products, SNWA wanted to work with Habitat as a member of the Water Smart Home Program without the normal associated fees
- SNWA would waive the application fee and per home participation fees to encourage Habitat's participation

What's in it for us and them?

- **For Habitat** – it makes sense to try and reduce utility bills for homeowner
- Often lower-priced homes have very inefficient features so that people who barely can afford to own the home are paying higher bills
- If the utility bills can be reduced with minimal upfront costs, than the homeowner greatly benefits
- **For SNWA**, participating in this project allows us to demonstrate to other builders and the community in general that higher efficiency does not have to be exclusive to high end homes
 - Numerous custom homes built around the Las Vegas valley that were built to be extremely efficient with high end 'green' products
 - Creates an image that sustainable and efficient are reserved for the 'rich'

General Overview

How Habitat for Humanity works:



- Family purchases the home and pays a mortgage – 0% underwritten by Habitat
- Monthly payment is based on approximately 30% of family's monthly income
- Family pays closing costs of 1.5% or about \$2500
- Family must complete 300 hours (per adult) of 'sweat equity' on Habitat Home construction sites – often not their own
- Minimum total household income must be at least \$26,000 per year (gross) with no liens, judgments, bankruptcy in the last 2 years
- Families are selected based on need for adequate housing, ability to pay back loan, and willingness to work with Habitat



- In December 2008, Habitat for Humanity Las Vegas officially joined the SNWA Water Smart Home program as the fifth participating builder
- In Las Vegas, Habitat for Humanity uses land that is usually vacant land within existing built areas
- As a result, they build homes in small clusters of between 2 and 4 homes
- Three initial homes had already started construction in early 2009 – with minor modifications became Water Smart

A Habitat Home

In general, Habitat homes are very basic homes:

- 1 story
- 3 bedroom and 2 bathroom is the general design
- They included a washing machine and dryer but no dishwasher
 - washing machines were not efficient – usually cheaper, non-efficient models that were cheap to purchase
- Basic plant pallet and irrigation system.



Expanding Partnerships

➤ One of our first tasks was to bring manufacturers and suppliers to meet with Habitat for Humanity staff and discuss upgrading toilets and fixtures to more efficient devices

- Changed toilets from 1.6 to 1.28 at no cost
- Changed bathroom aerators to 1.5 gallons from 2.2 gallons which were being used in kitchens and bathroom



The Challenges

- Had to educate Habitat for Humanity staff on water efficiency such as: dishwashers were much more efficient than hand washing - they agreed to begin installing them
- Also, had them work with their appliance contacts to upgrade their washing machines to a more efficient model



A LEED Habitat Home

- Habitat for Humanity Las Vegas then targeted two homes in 2010 to be their first LEED homes
- They estimated these homes could save up to 30% in water use compared to an average house
- SNWA saw this as an opportunity to strengthen the partnership by Working with existing SNWA relationships to make these two homes 'ideal' from a Water Smart build standpoint





➤ These LEED homes had smart controllers installed (which are not a requirement in our standard Water Smart Home), a sustainable garden and a rainwater catchment system.

➤ We worked with Hunter to donate the smart controllers. Our existing relationship with Mountain States and Star Nursery facilitated the donation of plants. Our relationship with NV Cooperative Extension facilitated the support of local master gardeners



How Much Does It Really Cost

- The ultimate cost impact of building these homes as Water Smart is minimal
- Although these products were sometimes donated to Habitat, our discussions with other participating builders showed us that the incremental construction costs ranged between \$250 to \$500 per home
- A major factor in this incremental cost is the hot water delivery system. However, with smaller homes such as these – 1,000 to 1,400 sq ft, the footprint of the house allowed hot water to be delivered to any source with less than .5 gallons of water wasted and no additional costs



Conclusion



- The partnership between Habitat for Humanity and SNWA flourished during the LEED project. SNWA worked closely with several partners in the commercial industry to help support Habitat which strengthened relationships among all parties .
- Because of this partnership – SNWA can demonstrate how water conservation is a community effort and with a little investment can have a noticeable impact on homeowners.
- Because of this partnership, Habitat for Humanity Las Vegas is building more efficient homes which will realize lower utility bills for the homeowner. (All future homes built in Las Vegas are built to the LEED standard without LEED designation.)

Questions?

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