

# This presentation premiered at WaterSmart Innovations

[watersmartinnovations.com](http://watersmartinnovations.com)





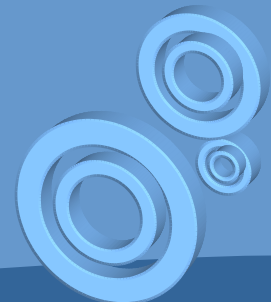
# Administering the Water Smart Home Program – The First Two Years

Toby Bickmore  
SNWA Conservation

# Water Smart Home Program



- To date nearly 7,000 homes in the Las Vegas valley built within the WSH program
- Four participating builders – KB Homes, RS Development, Astoria Homes and Pulte Homes
- Estimated water savings compared to homes built prior to 1992 – 75,000 gallons per year. Compared to homes built today, about 10,000 gallons per year in the LV Valley.

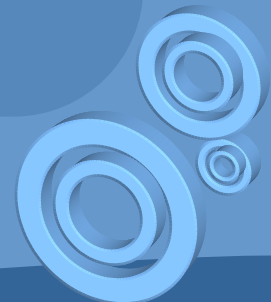


# Water Smart Home Program



## Program Requirements

- Outdoors
  - Landscape Design
  - Irrigation System Standards
  - Swimming Pools
  - Leak Detection
- Indoors
  - Plumbing Standards
  - Appliance Standards
  - Air Condition System
  - Leak Detection

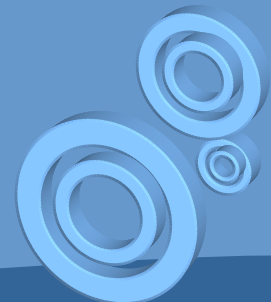


# Water Smart Home Program



## Outdoor Requirements

- No grass lawns in front yards
- No ornamental water features at the homes or in models
- Grass lawns 50% or less of total landscapable area of backyard, but not to exceed 1,000 square feet
- Irrigation system will not create any flow off of the property
- Minimum irrigation controller requirements
- Sewer cleanout enclosed and marked with “Pool or Sewer Drain”

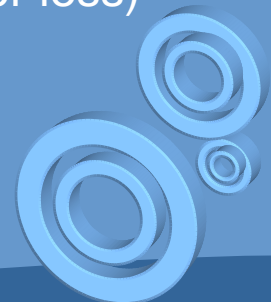


# Water Smart Home Program



## Indoor Requirements

- Pressure regulated to a maximum of 60 psi
- High-efficiency Fixtures
  - Showerhead 2.5 gallon maximum (multiple heads prohibited)
  - 2.2 gallon Kitchen faucet
  - 1.5 gallon Bathroom faucet
  - 1.6 gallon Toilet flush
- High efficiency dishwasher (6.5 gallon or less per normal cycle)
- High efficiency washing machine (Energy Star water factor of 7.0 or less)
- Drinking water system with a recovery rate of 85% or higher
- No evaporative air conditioner systems

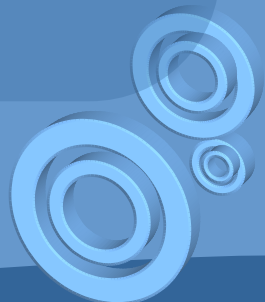


# Water Smart Home Program



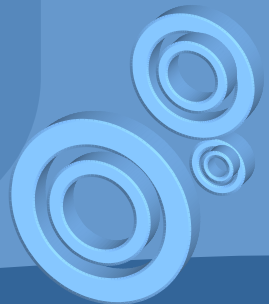
## Leak Detection

- Largest source of initial water savings
- Assure there are no leaks at the meter or in the irrigation system
- Assure there are no indoor leaks – especially at the toilet



# Water Smart Home Program

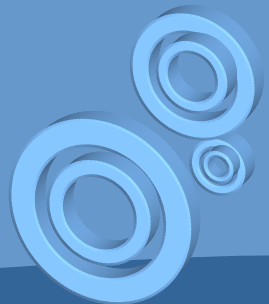
- New Standards for 2009
  - HET's for any new home permitted after 1/1/09
  - Smart Controller for any community park or common area
  - Dishwasher standard of 6.0 gallons per normal cycle
  - Washing machine (if installed) standard of 6.0 water factor





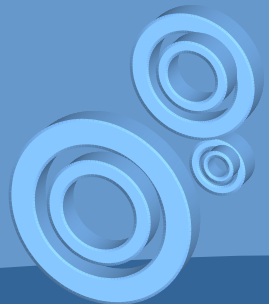
# Developing the Program

- In 2004, SNWA started evaluating water components inside and outside of the home
- Determined what is available from a technology standpoint
- Drafted a program with 'ideal' water-using components
- Met with local homebuilder association and builders
  - Obtained feedback on what is reasonable and unreasonable
  - If standards are too difficult, builders will not join
- Drafted final program documentation



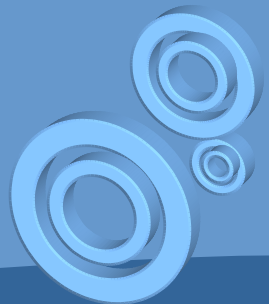
# Recruiting Builders

- Provided general briefings at homebuilder association meetings
- Set up one-on-one briefings with individual builders interested in participating
- Communicated the benefits of the program to them
  - This program represents the 'right thing to do' in today's environment of 'Green' building
  - This program is the 'right' thing to do for our community – faced with our issues of water resources
  - The program will provide them marketing opportunities that they currently do not have – utility bill inserts, web page exposure, bill boards & local TV show
  - Cost impact to the builder is minimal – minimal construction and administrative costs
  - Will establish standards that lead into a national program



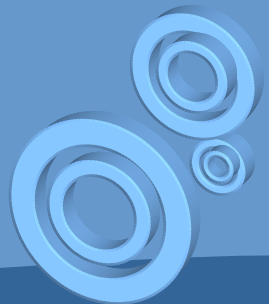
# Signing up Builders

- With legal's assistance, develop a contract – open to initial suggestions from Participating builders
  - Includes general corporate legal and liability clauses
  - Program provisions
  - Cancellation/termination process
  - Billing/payment process
- Builder and SNWA sign the contract
- Include discussion about which communities will be included in the program
- General business operation discussion
- Provide initial contact names for marketing and project/construction management



# Obtaining Information from the Builder

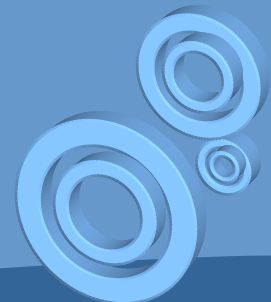
- Every builder manages their processes differently
  - How they build homes (individually, in groups, by street, clusters)
  - How they track homes
    - Some builders know early in the construction process when homes are completed
    - Some builders don't know when homes will be completed until a few weeks in advance
- Builder identifies community (s) to be included – we determined that it must be a new community (until the recent housing issues)



# Obtaining Information from the Builder

## Continued

- Builder provides community name plus address, lot and block information for every property in the program (Lot and block information are important for site inspections because addresses are usually not yet posted.)
- Builder provides contacts for site construction managers, supers and subs – which are all documented in our database as contacts



# Training

- Training was originally optional for Builder staff
  - However, initial inspection rates for failure were very high (46%) because sections of builder staff and subs were unaware of program conditions
  - Training is now mandatory for key staff and optional for marketing and purchasing staff
- In order to ensure a high success rate for passed inspections, site training is critical for Construction Managers, Site Superintendents and sub contractors
- Inspection passed rate has improved with a reduced inspection failure rate (19%)

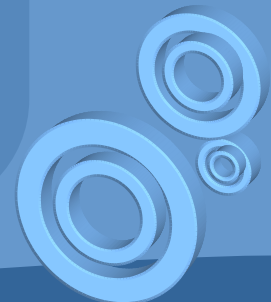


# Selecting Homes for Inspection

- Once community information is added to our database, system randomly selects 10% for site inspection (plus all models are inspected)

## When is a home ready for an inspection?

- Very small window exists for when a home can be inspected. Usually 2 to 3 days from when home is fully ready for an inspection (landscaping and appliances installed) and when Homeowner takes ownership.

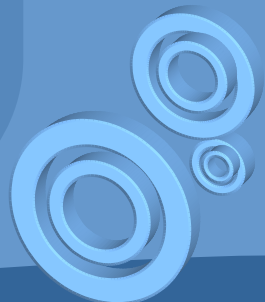


# Selecting Homes for Inspection

## Continued

Notification process is customized for every builder

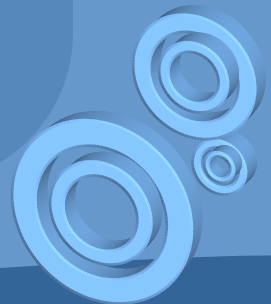
- Some form of automated notification comes from the builder (through e-mail, fax etc.)
- Follow-up call is then made to site Super or Construction Manager to confirm home is ready
- Unfortunately, builders almost always have some form of delay in the construction process – so a completely surprise inspection would result in a near 100% failure rate on initial inspections
- We notify the builder that we will inspect targeted home for inspection and any other home in neighborhood, if necessary.





# Inspecting Homes

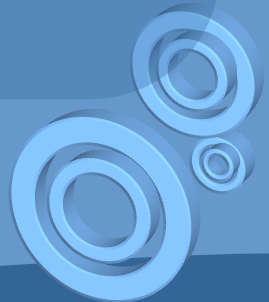
- Inspections take approximately 30-40 minutes
- We use staff\* that are working on other conservation programs throughout the valley
- If a home fails an inspection, then a re-inspection is scheduled immediately – knowing that a small window of time is available
- If access is no longer available for a re-inspection, we then select an additional home in the same community to inspect



# Staffing for Inspections

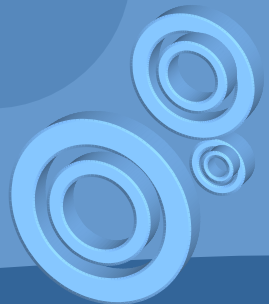
## \*Over the last two years:

- We have completed 890 site inspections (including inspections and re-inspections)
- We have 8 field staff and 2 office staff trained and regularly working on the program



# Billing the Builders

- For the first two years of the program, billing was focused on an annual fee plus a charge for homes completed the previous year plus inspection fees
  - Found that the system would penalize builders for successful previous years but maybe slow current years as well as incur fees based on non-water smart communities
  - Annual fee was also a deterrent for new builders joining the program



# Billing the Builders Continued

- New fee structure in one-time sign-up fee of \$2000 unless builder leaves the program and signs up again in the future
  - New system charges only for communities in the program at \$15 per completed home plus \$100 for every re-inspected home
  - \$100 re-inspection fee raises builder awareness to try and have homes pass initial inspection

Southern Nevada Water Authority  
**Water Smart Homes Program**  
Quarterly Inspections Invoice

Date: July 1, 2008 Invoice Number: 83

Builder: KB Home Nevada Inc Account: WGH-355333

Contact: Grant Due Date: 07/31/08

Address: 5655 Dulera Ave. Las Vegas, NV 89119

Invoice Amount: \$4,950.00

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Please detach this bottom portion and include with your payment in the enclosed envelope.

Make check payable to: SNWA

Account: WGH 355333

KB Home Nevada Inc

Invoice Number: 83

Due Date: 07/31/08

Invoice Amount: \$4,950.00

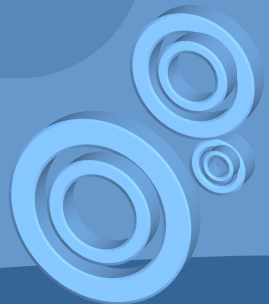
Southern Nevada Water Authority  
**Water Smart Homes Program**  
Quarterly Inspections Invoice

Date: July 1, 2008 Invoice Number: 83

Date	Lot	Block	Address	Fee Description	Amount
03/28/08	201	-	488 REDW/TH DR	Inspection	\$15.00
04/01/08	116	-	10222 FORT PINE ST	Inspection	\$15.00
04/01/08	15	3	15474 LYRIC ARBOR DR	Inspection	\$15.00
04/02/08	10	3	15474 LYRIC ARBOR DR	Ramp Inspection	\$100.00
04/02/08	80	-	517 BARKWORTH CASTLE AVE	Final Ramp Inspection Complete	\$100.00
04/02/08	85	-	4722 ALPINE AVE	Inspection	\$15.00
04/07/08	75	-	6551 ALPINE WEST ST	Inspection	\$15.00
04/08/08	19	-	7288 APACHE WOODLAND CT	Inspection	\$15.00
04/09/08	239	-	534 BECKTON PARK AVE	Inspection	\$15.00
04/09/08	43	2	534 NETTLE WY	Inspection	\$15.00
04/10/08	125	-	7256 ARROWROCK AVE	Inspection	\$15.00
04/10/08	265	-	475 SWISS COTTAGE AVE	Inspection	\$15.00
04/10/08	1	-	80 WOOD CLIFF AVE	Inspection	\$15.00
04/11/08	283	-	488 SWISS COTTAGE AVE	Inspection	\$15.00
04/11/08	110	-	10222 FORT PINE ST	Ramp Inspection	\$100.00
04/11/08	157	-	5683 EL CORRIENTE ST	Inspection	\$15.00
04/14/08	80	-	10460 BACKER RAUNE ST	Inspection	\$15.00
04/14/08	434	-	7106 HUCKABY AVE	Inspection	\$15.00
04/15/08	424	-	7106 HUCKABY AVE	Ramp Inspection	\$100.00
04/16/08	171	-	7255 ARROWROCK AVE	Inspection	\$15.00
04/16/08	244	-	482 SWISS COTTAGE AVE	Inspection	\$15.00
04/16/08	147	-	7337 DOMMANCHE CREEK AVE	Inspection	\$15.00
04/17/08	197	-	9693 EL CORRIENTE ST	Ramp Inspection	\$100.00
04/18/08	25	-	7312 CHAMPAGNE CT	Inspection	\$15.00
04/18/08	25	-	804 OPAL HILLS LN	Inspection	\$15.00
04/20/08	120	-	137 CHACKED TREE AVE	Inspection	\$15.00
04/21/08	171	-	7255 ARROWROCK AVE	Ramp Inspection	\$100.00
04/21/08	96	-	8024 SIERRA LAVAS ST	Inspection	\$15.00
04/21/08	75	-	6226 VISTA CREEK ST	Inspection	\$15.00
04/23/08	188	-	6985 BRYCE WOODLANDS ST	Inspection	\$15.00
04/23/08	147	-	7337 DOMMANCHE CREEK AVE	Inspection	\$15.00
04/28/08	449	-	7225 NICHES AVE	Inspection	\$15.00
04/28/08	24	-	824 OPAL HILLS LN	Ramp Inspection	\$100.00
04/28/08	188	-	6985 BRYCE WOODLANDS ST	Inspection	\$15.00
05/01/08	120	-	137 CHACKED TREE AVE	Ramp Inspection	\$100.00
05/01/08	120	-	137 CHACKED TREE AVE	Inspection	\$15.00
05/01/08	96	-	8024 SIERRA LAVAS ST	Ramp Inspection	\$100.00
05/02/08	125	-	137 CHACKED TREE AVE	Inspection	\$15.00
05/02/08	76	-	8025 ASHVA AVE	Inspection	\$15.00
05/02/08	85	-	10420 BACKER RAUNE ST	Completed - No Inspection	\$15.00
05/12/08	83	-	113 BIRD CLIFF AVE	Completed - No Inspection	\$15.00

# Challenges

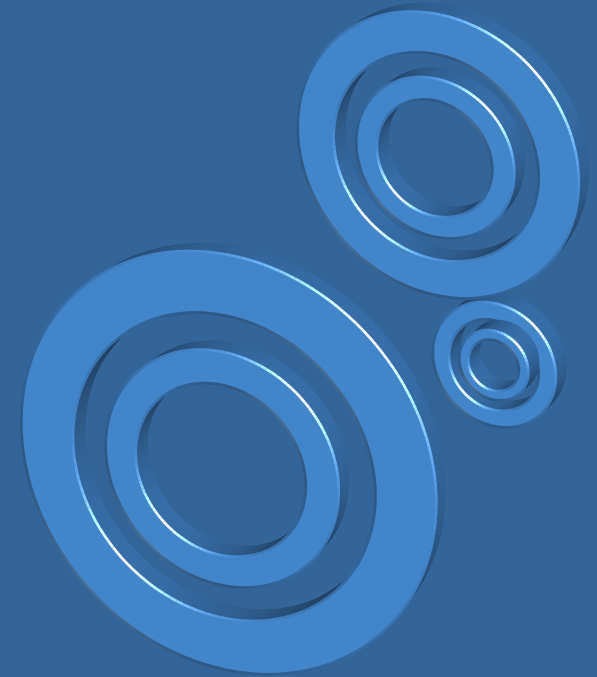
- Attracting new builders
  - Selling the Water Smart brand
  - Especially difficult in today's economy
- Training of builder staff to reduce inspection failures



# Challenges

- Timing of inspections
  - Notification process from builders
    - Try to 'randomly' inspect homes but also insure that we are inspecting a completed home





# Water Smart Home Program Questions?