

# Water Wise

Connecting water and energy



# Sustainable Skylines

- What is Sustainable Skylines?

An EPA supported public-private partnership to reduce air pollution and promote sustainability

- What is Water Wise?

Promotes the energy conservation and reduced air emissions associated with:

- Indoor water conservation
- Native landscaping
- Bio-retention
- Alternative irrigation



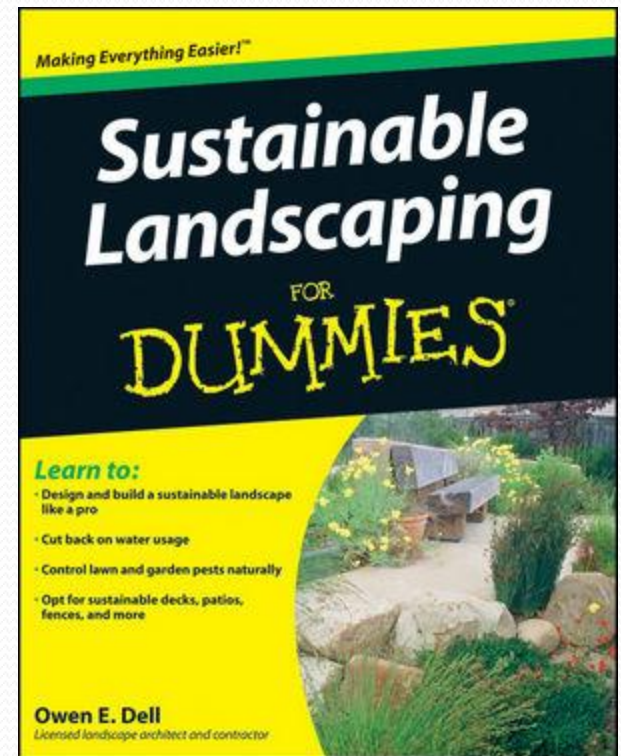
# Indoor Water Consumption

- On average, 6% of a household's water consumption is used at the faucet. (AWWARF 1999).
- Low-flow faucet aerators with a 0.5 gallon per minute (gpm) rating reduce this water usage by 75%
- The MEC is working with contractors in the local Home Performance Network and NAI Capital Realty to promote low-flow faucet aerators.



# Water, Energy, and Landscaping

- Up to 60% of residential water use is for landscape irrigation.
- Replacing turf with native grasses and rain gardens reduces irrigation
- Rain barrels and cisterns can capture storm water for later use



# What do we know?

(potential impact of 1 rain barrel)

**37 inches of precipitation annually**

Building footprint of 1500 square feet

**34,600 gallons**

Fall/Winter precipitation =

6,900 gallons

Spring/Summer precipitation =

**27,700 gallons**

Consecutive storms prevent rain barrel drainage

17,300 gallons

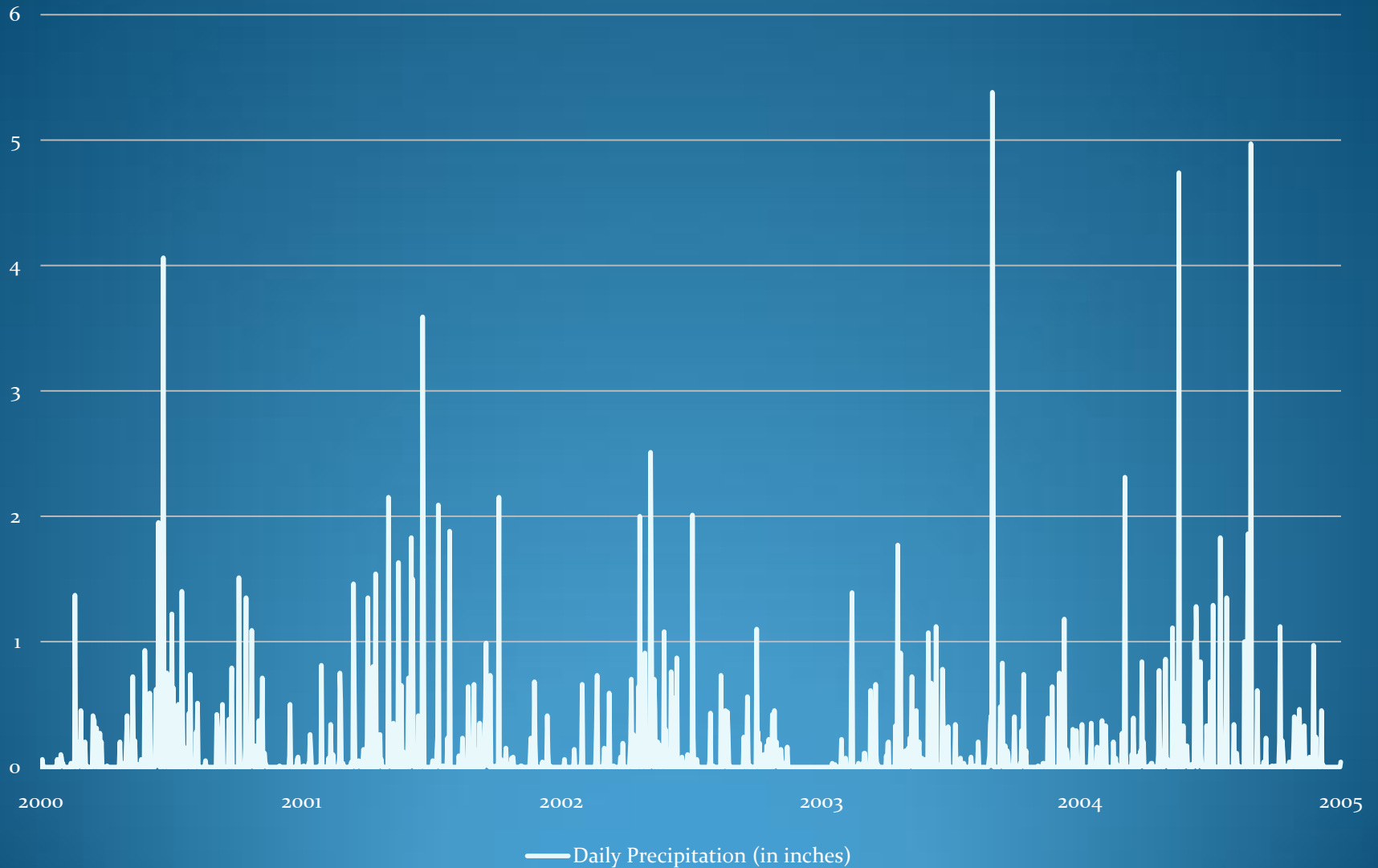
Precipitation from single storm events =

**10,400 gallons**

Rain barrel drains 25% of roof area

**2,600 gallons**

## Daily Rainfall in Kansas City (2000-2004)



# Impacts of 1 Rain Barrel (First pass)

**1,500 gallons annually**

Assuming homeowners use 2/3 of the water,

**1 rain barrel will capture 1,000 gallons**

## Cost

\$50-100 dollars

## Benefits

Reduction in water bill by **\$6**

Municipal energy savings of 1400 watts (**4 cents**)

Reduction of CO<sub>2</sub> emissions by **2.2 pounds**

(Water Services emits 90,000 metric tons of CO<sub>2</sub> annually)

# Without the rain barrel

What would happen to the 1,000 gallons without the rain barrel?



# Sewer Overflows

What would happen to the 1,000 gallons without the rain barrel?



# Internalizing the cost of runoff

**One solution to minimize overflows – Storage Tanks!**

Proposed tanks at 87<sup>th</sup> Street Pumping Station

**68 million gallon capacity**

**4 billion gallons** over 20 years

**\$269 million dollars** to install

**\$1.13 million** annual O&M cost

**50,000 kWh** to treat **68 million gallons**

Over 20 years, cost amounts to **7 cents per gallon**

**55 gallons = \$4**  
**In treatment costs**

**1,000 gallons = \$70**  
**In treatment costs**

# Water Wise KC

- Rain Barrels

Bridging the Gap, Little Blue River Watershed Association, and Habitat Restore sold or installed **1518 rain barrels** in 2009

Reducing landscaping irrigation by **1.5 million gallons**

- Rain Gardens

Over 300 rain gardens have been registered with the 10,000 Rain Garden Initiative.

Those gardens could potentially reduce storm water runoff by **2.5 million gallons**.

