

# *Residential HET Program*

## *An overview of Successes Cost and Benefits*

*Manny Rosas*

*City of Redwood City*

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# Acknowledgements

## Program Design:

- ❖ John Koeller, P.E., Koeller and Company
- ❖ Maureen Erbeznik, Maureen Erbeznik & Associates

## Program Implementation:

- ❖ Debra Ivazes, Conservation Program
- ❖ Courtney Brown, Conservation Program

# Presentation Outline

- ❖ Redwood City – Background
- ❖ HET Program Design
- ❖ HET Program Implementation
- ❖ Customer Satisfaction
- ❖ Conclusions – Lessons Learned

# City of Redwood City

- ❖ Northern California – Bay Area – “Silicon Valley”
- ❖ Retail Water Agency / Wholesaler SFPUC
- ❖ Serves 83,000 Residents
- ❖ Service Area – 35 Square Miles
- ❖ Residential GPCPD: 89



## Residential HET *Program*

### Redwood City's Water Supply

- 100% of potable water supply from Hetch Hetchy regional water system
- SFPUC Supply Assurance amount of 12,243 AF
- Demand exceeds supply since 1998 by 1,000 AF

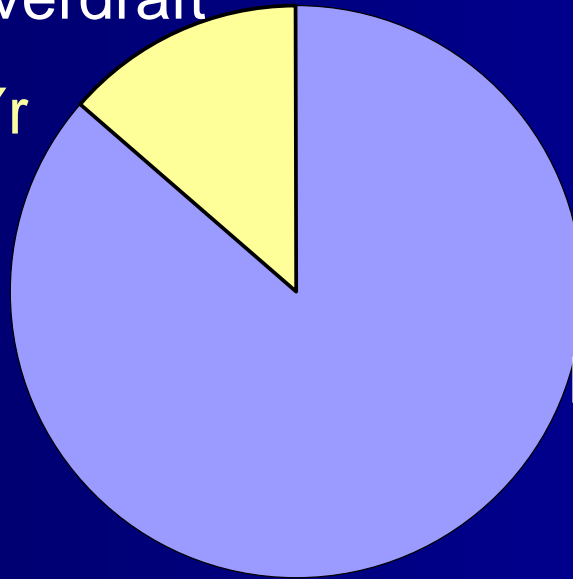


# Residential HET Program

## Projected Water Supply Gap

Projected 2010 Overdraft

1,445 AF/Yr



Redwood City Supply Assurance

12,243 AF/Yr

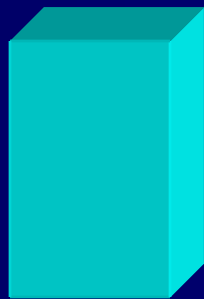
# Residential HET Program

## Water Supply Solution

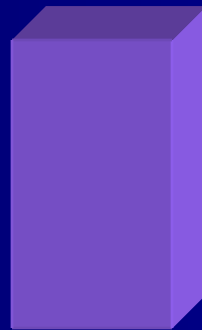
800 acre feet  
through **active  
conservation**

900 acre feet  
through use of  
**recycled water**

**Total**  
1,700  
acre feet



+



=



# Residential HET *Program*

## HET Program Design Goals:

- ❖ Learn from Other Agencies - SCWA
- ❖ Take Advantage of Latest Technologies
- ❖ Select Best Performing Fixtures  
**+ 500 Grams / MaP Test**
- ❖ Assure Sustainable Water Savings - **LAWPD Specification**
- ❖ Assure a High Level of Customer Satisfaction



# Residential HET Program

## HET Toilet Exchange – Sept. 2004

1,000 HET Dual Flush



350 Pressure Assist



# Residential HET Program

## ❖ 2 Giveaway Events – (650 Toilets each day)

- Application / Qualification / Appointment



## ❖ 2 Old-Toilet Return Events (by appointment)

- Customers had 3 weeks to return old toilet
- Old toilet's materials recycled



## ❖ Customer Satisfaction Surveys

- Satisfaction with flush performance
- Concerns: P. Assist - Noise / Dual Flush – Design

# Residential HET *Program*

## Direct Install / Rebate Programs

### ❖ Program Goals

- Direct Install: 10,000 toilets
- Rebate Goal: 1,200 toilets

### ❖ Toilet Fixtures Performance Standards – (UNAR +)

- Minimum MaP performance of 500 grams
- LADWP Supplementary Purchase Specification



# Residential HET Program

## Direct Install Program

### ❖ Marketing Strategies

- ✓ **FREE**
- ✓ **HIGH EFFICIENCY – LOW FLOW**
- ✓ **PUBLIC EDUCATION**
- ✓ **FLUSH PERFORMANCE**
- ✓ **RUN TEST**

*“Try It, You’ll Like It”*



# Residential HET Program

## Direct Install Program

### ❖ Toilet Models Offered

- P. Assist: Mansfield - 525-725 Grams
- P. Assist: Mancesa "Cyclone" - 650 Grams
- Gravity: Vitra "Atlantis" 1.6 GPF - 750-800 Grams

### ❖ Program Activities – First Year

- 4,000 Toilets Installed
- 3,400 – 85% Pressure Assist
- 600 – 15% Gravity



# Residential HET *Program*

## Program Costs

### ❖ Cost per Unit

- Pressure-assist - \$242 per fixture
- Gravity - \$154 per fixture

### ❖ What is included:

- Delivery & Installation of New Toilet
- Removal and Recycling of Old Toilet
- New angle stop, supply line, toilet seat
- Installation of showerhead and faucet aerators
- One year call-back service

## Residential HET *Program*

### Program Savings – First Year

- 5.0 GPF Average flush volume – old toilets
- 4,000 Toilets Replaced
- 120 Acre Feet – Annual Water Savings

# *Post Installation Survey*

*"Customer Satisfaction"*

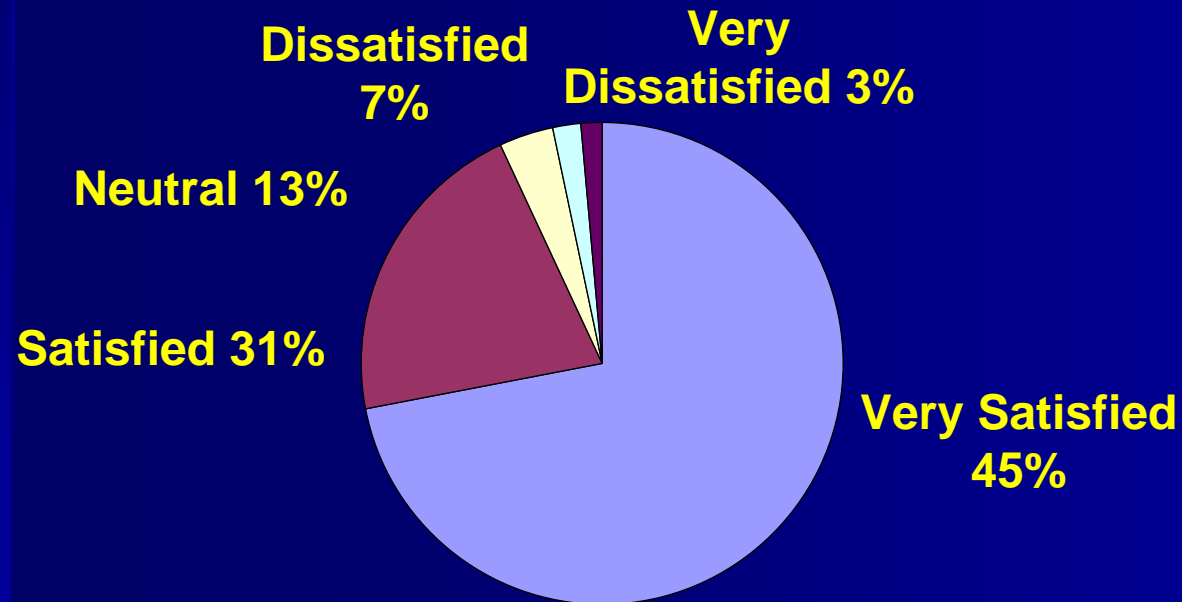


# Residential HET *Program*

## Customer Satisfaction

### ❖ Post-Installation Surveys / Toilet Satisfaction

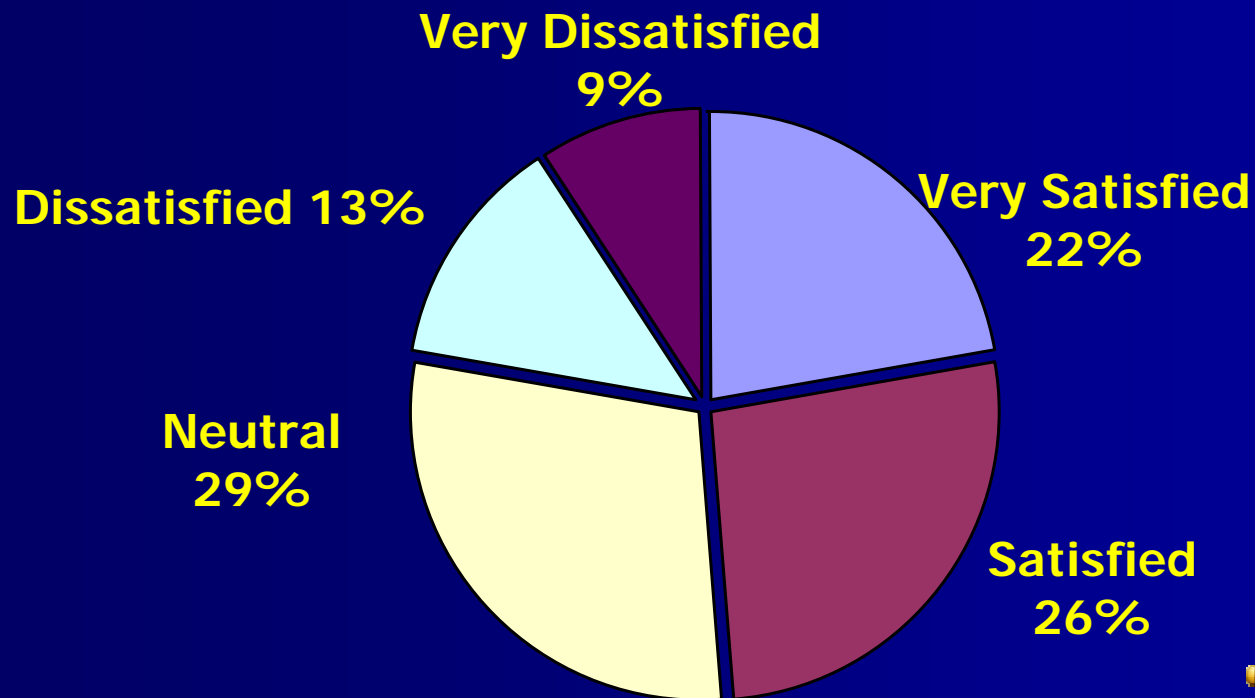
(900 Responses)



# Residential HET *Program*

## Customer Satisfaction

- Flushing Noise



## Residential HET *Program*

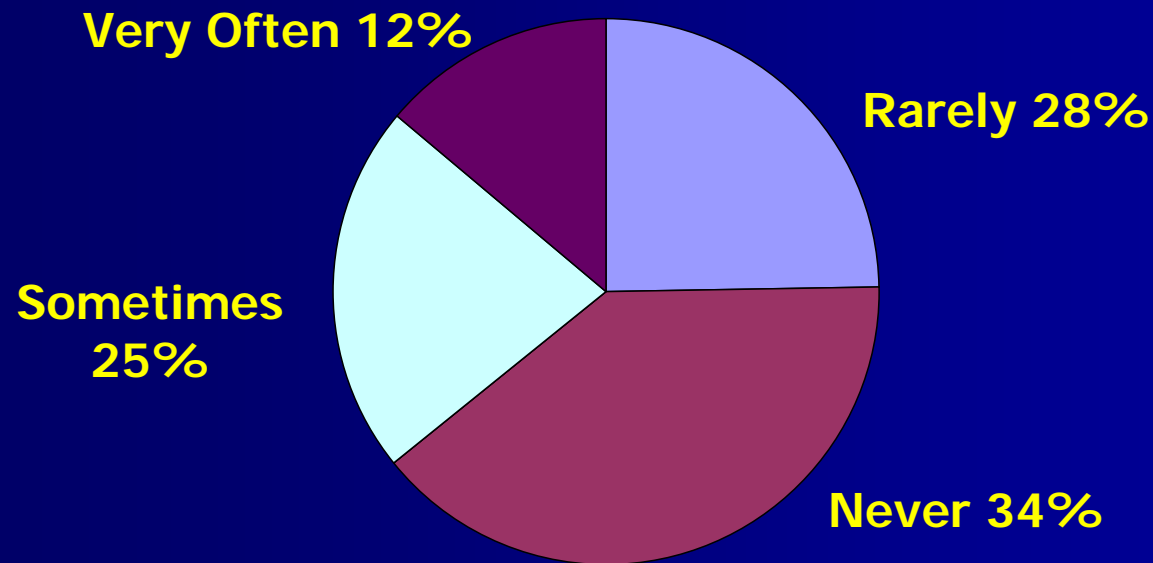
### Customer Satisfaction / Flushing Noise

	<b>Mancesa</b>	<b>Mansfield</b>	<b>Atlantis</b>
Very Satisfied	<b>22%</b>	<b>16%</b>	<b>48%</b>
Satisfied	<b>26%</b>	<b>21%</b>	<b>33%</b>
Neutral	<b>29%</b>	<b>33%</b>	<b>16%</b>
Dissatisfied	<b>13%</b>	<b>20%</b>	<b>4%</b>
Very Dissatisfied	<b>9%</b>	<b>10%</b>	<b>0%</b>

# Residential HET *Program*

## Customer Satisfaction

- Double-Flushing



## Residential HET *Program*

### Customer Satisfaction / Double Flushing

	Mancesa	Mansfield	Vitra
NEVER	26%	43%	45%
RARELY	32%	29%	25%
SOMETIMES	29%	22%	21%
VERY OFTEN	13%	6%	9%

## Residential HET *Program*

### Conclusions / Lessons Learned



- ❖ Public education is highly important
- ❖ Agencies need to collectively continue learning
- ❖ Performance Standards are important but need to continue looking for the “Perfect Toilet”
- ❖ Customer Satisfaction is Key to Success

# Residential HET Program



## Questions?

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