



# Indoor Water Conservation Strategies: Issues and Recommendations

Water Conservation Task Force  
October 27, 2006

# Submetering

- Solutions:
  - Require existing properties plumbed for submetering to install and use submeters to bill for water
  - Require all new multi-family and mixed use properties to use submeters or individual city meters to bill tenants for water
    - City would develop process to provide metering services to individual units only if requested by developers
  - Require individual City meters for each unit when multiple duplex, triplex, or fourplex units are constructed on a single lot
    - Currently required for one duplex, triplex or fourplex per lot

# Submeter Installation



# Submetering Questions

Q: How could capital recovery fees be handled if individual city meters were installed for each unit?

A: Continue to install a master meter even if the developer requested individual unit metering. Capital recovery fee would be based on the master meter, as it is currently.

# Submetering Questions

Q: What sort of technical issues/impediments arise with regard to installing utility meters?

A: Problems with installing a master meter and individual meters include:

- Reconciling billing between master meter and individual meters
- Determining responsibility for maintaining and changing meters. Either:
  - Individual meters must be installed in right-of-way or easement
  - City hires master plumbers to oversee work (required by State law), or
  - Agreement made to transfer responsibility to management company
- Developer and management companies have yet not requested City metering

# Submetering Questions

Q: What other technical issues arise from requiring submeters?

A: Technical issues include:

- Buildings with central boilers
  - Two water lines per unit would make submetering difficult
- Affordable housing units
  - Billing issues need further investigation

# Submetering

- Staff Recommendation:
  - Require that all properties that have plumbing for submetering use submeters to bill tenants for water
  - Require all new multi-family and mixed use properties to use submeters to bill tenants for water
  - Require installation of individual City meters for each unit for multiple duplexes, triplexes, or fourplexes constructed on a single commercial lot

# Automatic Flush Sensors

- Found on toilets and urinals in commercial facilities
- 30-40% of new commercial toilets have automatic flush
- Could be causing unnecessary flushing
- Problems may be due to improper adjustment and maintenance
- Unable to locate any published studies on water usage
- We will gather more information on this issue and make a recommendation at a later meeting.

# Plumbing Code Revisions

- Staff Recommendation:
  - Require efficient plumbing fixtures effective 2009
    - High efficiency toilets
    - Showerheads
    - Faucet aerators
  - Prohibit liquid ring surgical/dental vacuum pumps
  - Require conductivity controllers for steam boilers
  - Set 0.5 gpf maximum flush volume for urinals
  - Limit commercial dishwashers to 0.9 gal/rack or 180 gal/hour
  - Prohibit garbage grinders in restaurants and cafeterias
  - Gather input on the multiple showerhead issue; recommend maximum flow rate per enclosure at a later meeting

# Mandatory Plumbing Fixture Replacement

- Process:
  - Certificate of Compliance would be required to confirm fixtures' efficiency. It can be applied for at any time - recommended before property is listed for sale
  - Can be transferred to buyer to accommodate remodeling with posting of completion bond
  - Exemptions could be granted for historic fixtures, demolitions, eminent domain, etc.
  - Verification inspection required

# Mandatory Plumbing Fixture Replacement

- Staff Recommendation:
  - Require all plumbing fixtures in single family properties to perform at current plumbing code volumes on transfer of title
    - Seller responsible – easy to identify and enforce
    - Toilet incentives could remain in place for a period to encourage early replacement

# Mandatory Plumbing Fixture Retrofit

- Staff Recommendation:
  - Require all plumbing fixtures in Multi-family and Commercial properties to perform at current plumbing code volumes by Dec 31, 2009
    - Would require inspection for verification
    - Toilet incentives could remain in place for a period to encourage early replacement
    - Council required mandatory retrofit with efficient showerheads and faucet aerators in 1980s.

# Hot Water on Demand

- Plumbing Code limits furthest fixture to 70ft, unless water heater has gravity-flow design or mechanical pump
- Reportedly, larger homes that do not meet the 70 foot requirement are installing recirculating pump systems.
- Small California study showed 3,600 to 12,000 gallons per year savings with recirculating hot water systems
- City could consider requiring a hot water recirculating system where the furthest fixture is more than 40-50 feet
- We will gather additional information and make a recommendation at a later date.

# Commercial Clothes Washers

## Staff Recommendation:

- Require efficient water factor on new hard and soft mount machines
  - Excepting single-load soft mount, existing DOE standard
  - Recommend exact water factor at a later date
- Require new machines to include a sensor that automatically adjusts water level
- Require replacement by 2009 of all single and multi load machines with a water factor greater than 9.5

# Cooling Tower Management

## Staff recommendation:

- Require makeup and blowdown meters, conductivity controllers, overflow alarms, and drift eliminators on new and existing cooling towers
- Require minimum of 5 cycles of concentration
- Encourage the use of reverse osmosis (RO) technology to increase cycles of concentration where RO reject water can be used for irrigation

# Car Wash Requirements

## Staff Recommendations:

- Limit conveyor washes to 40 gallons/car or less.
- Limit in-bay washes to 55 gallons/car or less.
- Require hand wand nozzles to use 3 gpm or less
- Require charity car washes to be held at existing car wash establishments
- Limit large vehicle (bus or large truck) washes to 75 gallons/vehicle or less.
- Limit car washes constructed after 2009 to 40 gallons/car or less