

## Conservation Programs for Commercial, Industrial & Institutional Accounts

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Hala A. Ahmed, AICP

#### **Water Conservation**

- Protects/conserves natural resource base
- Reduces costs to water suppliers & water users
- Positively affects the reliability & sensitivity of water supplies
- Can be achieved through
  - Demand Reduction
  - Water Supply Efficiency Programs



**Conservation Programs for Commercial, Industrial & Institutional (CII) Accounts** 



#### **CII Definition**

- Commercial: water use that provides a product or service, e.g. hotels, restaurants, office buildings- Use relates to population served (customers, employees).
- Industrial: primarily manufacturers or processors of materials, e.g. food production, printing & publishing, furniture- use is for primary functions e.g. industrial processing, heat transfer, washing.
- Institutional: establishments dedicated to public service, e.g. schools, hospitals, government facilities. Use is higher consumption for domestic applications, e.g. cooling/heating, landscape irrigation.

### CII Water Use in NE IL

•12.5% of total use (w/out power generation)

Scenario	2005	2050	Change		
Current Trends	564.5	689.2	124.7		
More Resource Int.	564.5	706.7	142.2		
Less Resource Int.*	564.5	642.1	77.6		

\*: LRI assumes that future conservation will be 30% higher than historical trend (among other variables)

Source: Regional Water Demands Scenarios Report for Northeastern Illinois, SIU- March 2008 Draft



#### **Water Conservation for CII Facts**

- Can achieve reductions in wastewater flows
- Potential water savings from conservation are considerably higher on a per customer basis
- CII accounts can have a significant impact on local water systems
- Savings benefits: reduced water bill, more efficient eqp., energy savings, less pollution output
- Climate change can have a significant impact on CII water use- variations in temperature affect cooling

# Water Conservation for CII Facts (contin.)

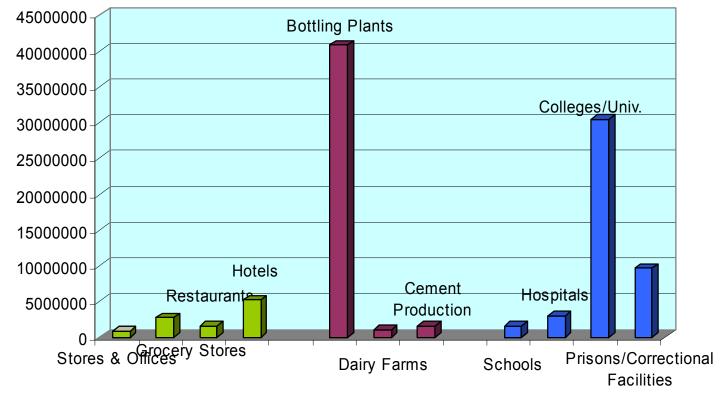
- Potential water savings range from 15-50%
- Payback periods usually between 1-4 years
- Potable water is not needed for many CII applications
- Documentation of CII audits is lacking, conservation program evaluations cannot be generalized to other CII users
- Better coordination among water, wastewater & energy utilities are need for better water efficiency

# Water Conservation for CII Facts (contin.)

- Programs are typically more complex than residential programs
- Programs are site specific
- May involve operation adjustments that are unique to processes & facilities
- Achievable water reductions will vary
- Cost effectiveness to be determined on a case by case basis



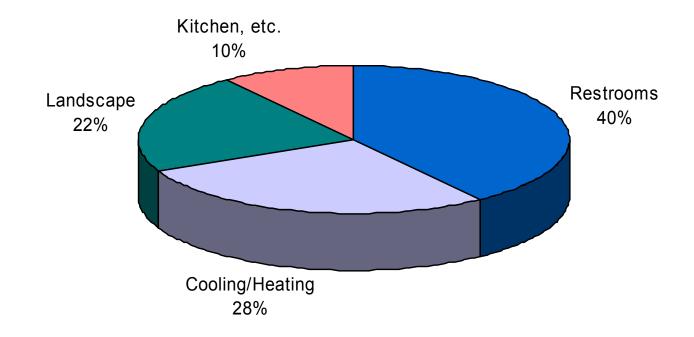
#### CII Annual Water Use-gallons/connection



Type

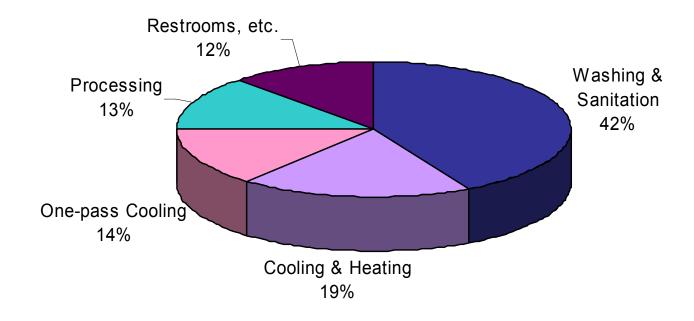


## Office Building- San Jose, CA



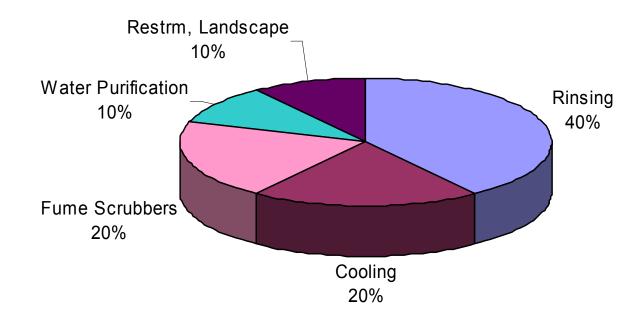


### **Food Processing Sector- Denver**



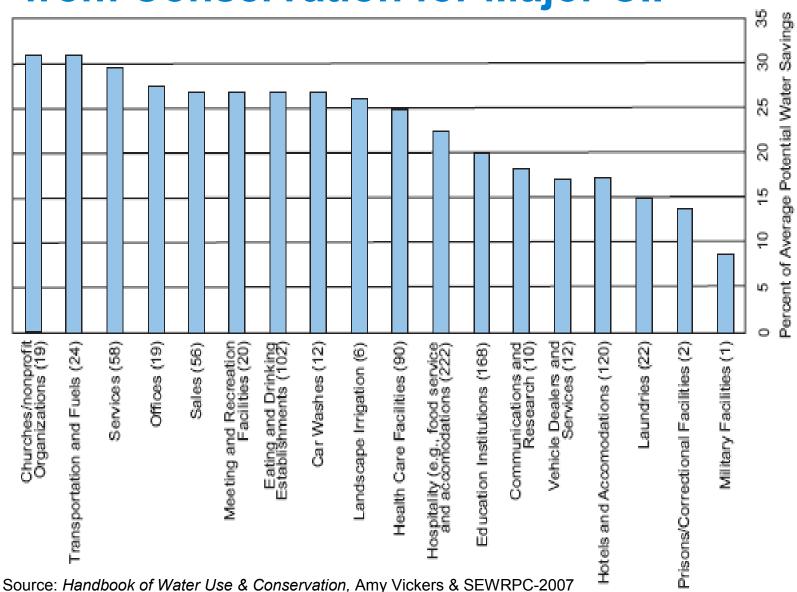


# **Electronics Manufacture- Silicon Valley, CA**





## **Average Potential Water Savings from Conservation for Major CII**

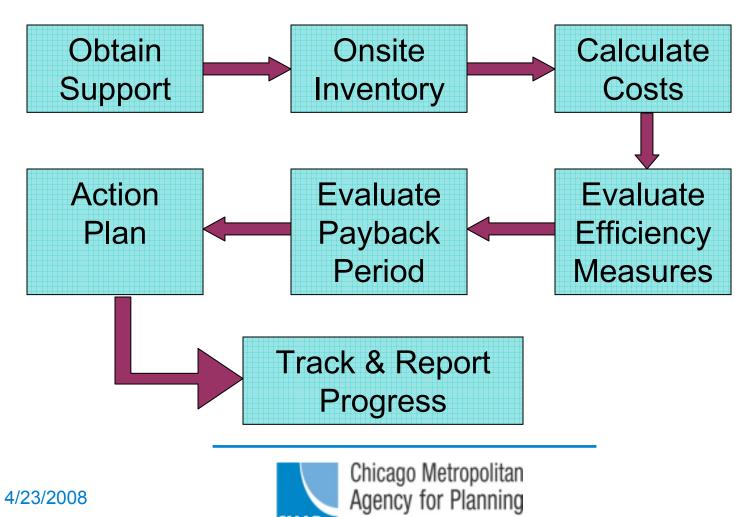


### **Conservation Programs for CII**

- Water Audits- Consultation
- Conservation Certification
- Utilization of Reclaimed Water- Reuse
- Financial & Regulatory Incentives-Conservation Credits
- Alteration/Reduction of Irrigation Schedules
- Increasing Customer Awareness
- Metering
- Domestic Plumbing Fixtures



#### **CII Water Audit**



#### **Conservation Certification**

- Water Conservation Incentives & Recognition
- Participation by state, regional agencies, biz/industry, trade associations, water management districts & water utilities
- BMP practices for year-round efficiency
- Certified biz/industry display signage showing status
- WMD amends rules to provide appropriate regulatory incentives
- Examples: car washes, hotel, laundromats

Overall Score: 10 out of a possible 11 points

Priority	Total	Amount of Water Saved					Cost-Effectiveness			Ease of Imple-		
	Score	(1 to 5)					(1 to 3)			mentation (1 to 3)		
High	10	•	•	•	٠		\$	\$	8	x	α	X



#### Reclaimed Water/Re-use

- When potable water is not needed, hi-quality reclaimed water can be used
- Can be used to flush sewers, clean streets, wash vehicles, mix pesticides, dust control etc.
- Can be provided from domestic wastewater facilities- rates should be less than potable water
- Implementers: state, WMDs, utilities, users

Overall Score: 8 out of a possible 11 points

Priority	Total	Amount of Water Saved					Cost-Effectiveness			Ease of Imple-		
	Score	(1 to 5)					(1 to 3)			mentation (1 to 3)		
Medium	8	•	٠	٠	٠		\$	\$		00	00	



## Financial & Regulatory Incentives & Alternative Supply Credits

- Tax & regulatory incentives: tax credits for installing conservation eqp., waiver of permit fees, NPDES variances or waivers for facilities using sources of lower quality water
- Available to industries that :
  - Use less water, or projected to use less than national industry standard
  - Propose to reduce water use from previous permitted quantity
  - Voluntarily undertake actions that improve water conservation
- Implementers: state, regional agencies, legislature.

Overall Score: 10 out of a possible 11 points

Priority	Total	Amount of Water Saved					Cost-Effectiveness			Ease of Imple-		
	Score	(1 to 5)					(1 to 3)			mentation (1 to 3)		
High	10	٠	•	٠	•		\$	\$	\$	α	œ	ΟX



### **US EPA WAVE Program**

- WAVE: Water Alliances for Voluntary Efficiency
- Targets hotels and educational institutions
- Partners agree to audit water use and improve efficiency when profitable (2-yr simple payback period)
- WAVE.Saver: water use analysis software for modeling use and developing customized plans, costs & benefits
- La Quinta Inns reduced water use by 20% (>1 billion gallons) and saved millions of \$\$ since 1995 after an aggressive conservation program for 300 inns in 28 states

## Portland (OR) BEST Program

- BEST: Businesses for an Environmentally Sustainable Tomorrow
- Sponsored by Energy Office- City of Portland
- Offers Technical Assistance for application for tax credits & financial incentives for efficiency measures
- Goal: promote environmentally sustainable practices to help local biz operate more efficiently
- BEST Business Award



#### State of IL

- IL Green Government Coordinating Council:
  - Goal: to improve sustainability, including water conservation, in IL government operations
  - Offers assistance to local/county governments & universities for 'greener' practices
- IL Sustainable Universities Compact:
  - Universities/Community Colleges sign agreement pledging greener practices
  - Commit to reduce water use on campus by 15% by 2010
  - Partners include: CSU, Columbia College, IIT, Elgin & Oakton Community Colleges, Northwestern, UIC



### **NE IL Region**

- City of Chicago:
  - Mayor Daley's GreenWorks Awards
  - DOE's Industrial Energy Efficiency Program (identified 130 million gallons/yr of water savings in 12 audits)
- Village of Schaumburg Environmental Committee
  - Oversees surveillance programs of actual or potential sources of land, air or water pollution
- Others??



## **Recommendations (General)**

- State to initiate tax credit & financial incentive programs to CII sectors when implementing conservation programs and less water use
- A more structured reporting of water use by the various sectors will assist in implementing & evaluating conservation programs
- Water utilities should develop good marketing strategies to encourage the receptiveness of CII sectors to conservation programs

## Recommendations (Specific)

- City/Village/County buildings to implement CII Conservation Programs for piloting and to set an example
- MWRD publicizes users demonstrating exemplary conservation practices, same as with discharges
- Technical Assistance: presentations, workshops, publications to CII on conservation measures
- CII sectors to provide conservation programs specific to needs & implementation schedules

