

# Opportunities and Incentives for the **Tune-Up Program**



**Summer, 2017**

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on behalf of SPU / Cascadia Consulting Group

Seattle  
 Public  
Utilities

# Relationship to Tune-Up

Table 1: Operating Protocols, Calibration, and Sequencing Elements of a Building Tune-Up

<b>4. Water Usage</b>			
a	In irrigated areas 500 square feet or more, verify irrigation schedule are in place, and review schedules.		Identify opportunities for schedule improvements to improve efficiency and recommend appropriate action (e.g. one schedule over many landscape Zones).
b	Verify irrigation rain sensors are calibrated, functioning properly, and located appropriately to collect relevant moisture data to trigger the system operating system.	Adjust, calibrate, or repair as Appropriate.	
c	Verify cooling tower conductivity meter used to control blow down is calibrated and functioning properly.	Adjust as Appropriate.	Recommend repair.
d	Review water feature schedules.	Set to shut-down during night-time or unoccupied periods where Appropriate.	

# Relationship to Tune-Up

Table 2: Maintenance, Cleaning, and Repair Elements of a Building Tune-Up

<b>3. Water Usage</b>			
a	Check irrigation system for leaks, overspray, broken heads, foliage blocking, plugged nozzles, excess pressure, or other operational problems.	Adjust and repair as appropriate for standard or regular maintenance actions.	Recommend repair if scope of work is more than standard maintenance.

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*OSE Director's Rule 2017-01  
Building Tune-Ups Requirements*

b	Check plumbing fixtures for leaks.	Repair as Appropriate for standard or regular maintenance actions.	Recommend repair if scope of work is more than standard maintenance.
c	Check hands free sensor-activated plumbing fixtures for proper operation.		Recommend repairs if scope of work is more than standard maintenance.
d	Check water flow fixtures.		Recommend low flow fixture or aerator replacements.
e	Evaluate cooling towers for water leaks and excess water consumption.	Repair as Appropriate for standard or regular maintenance actions.	Recommend repairs if scope of work is more than standard maintenance.

# Relationship to Tune-Up

## Additional Relevant Excerpts

### 5.C.

Irrigated landscaping: Exterior landscaping areas of a building that is subject to this requirement shall be included in a Building Tune-Up per this Rule if the total square footage of irrigated area is 500 square feet or more, and if the meter for irrigation water is associated with the building subject to compliance.

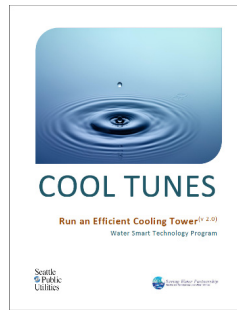
### 11.A.iii

Review and evaluate water billing data for either the previous two calendar years or the most recent 24 -month period, at a minimum, to identify indications of potential water leaks. Plot monthly water usage to determine if water use over time has varied significantly without explanation.

From <[http://www.seattle.gov/Documents/Departments/OSE/OSE DIRECTORS RULE 2016-01.pdf](http://www.seattle.gov/Documents/Departments/OSE/OSE_DIRECTORS_RULE_2016-01.pdf)>

# Today's discussion

- Cooling towers



- Landscaping



- Water features

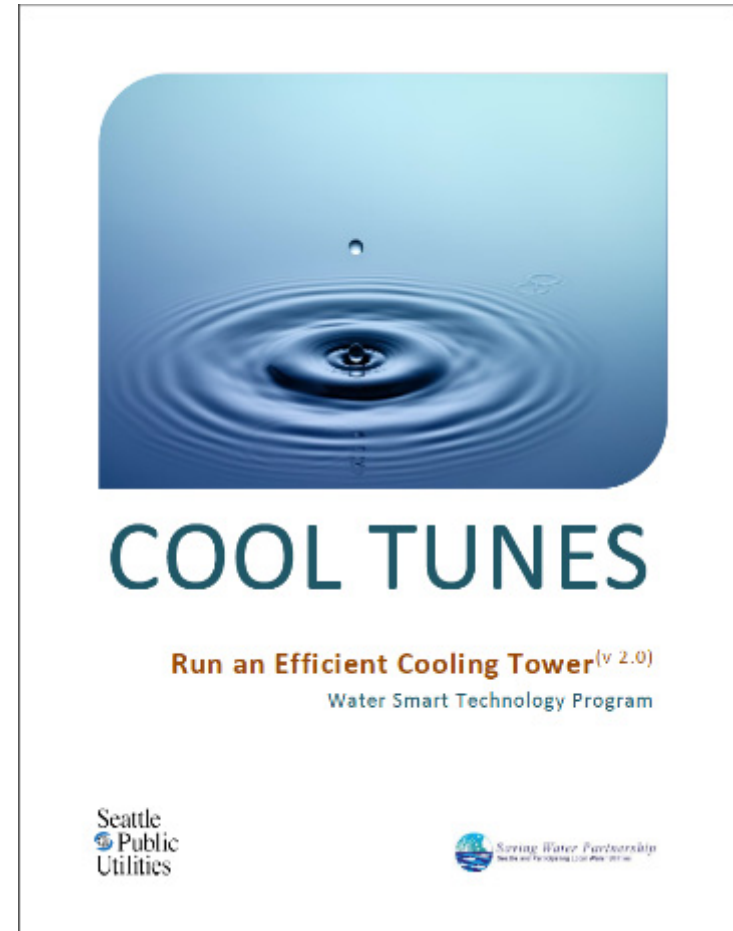


- Opportunities / customized incentives



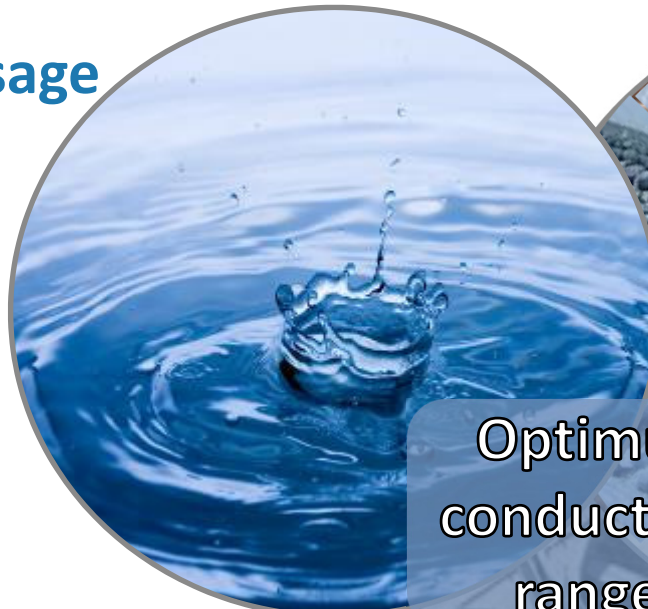
# Why look at cooling towers?

- ✓ O&M matters!
- ✓ These highly valuable maintenance guidelines are tailored to Seattle's water chemistry
- ✓ These are based on research on water efficiency, corrosion, and mass balance of several cooling towers in the Seattle area

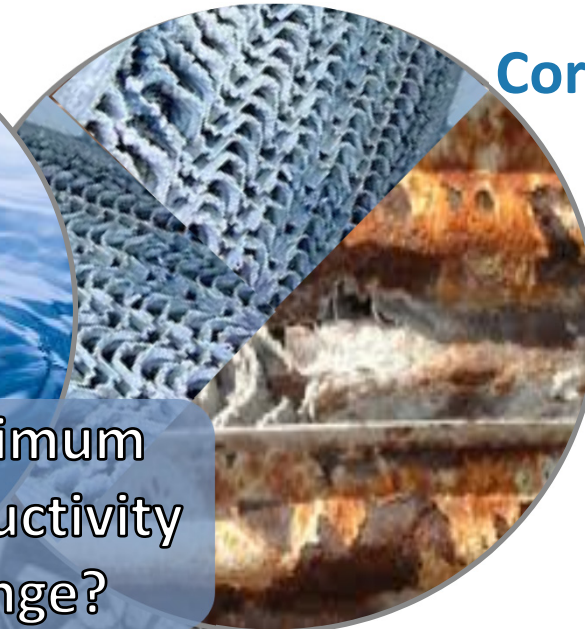


# What's the deal with cooling towers?

Water usage



Corrosion/scaling



Optimum  
conductivity  
range?



Equipment life

# How O&M can help

## These guidelines help Seattle-area facility managers:

- ✓ **Reduce** peak season water bills
- ✓ **Reduce** maintenance & repair expenses
- ✓ **Extend** equipment life



### Optimization of Cooling Tower Water Treatment in the Seattle Area

October 2012

Roger E. van Gelder, P.E.

Seattle  
Public  
Utilities

# Important reminders

- ✓ Conductivity controllers often get substantially out of calibration
- ✓ Low conductivity may lead to excessive corrosion
- ✓ Regular monitoring is crucial



Photo: <http://www.corrosionpedia.com>

# Recommendations

## 1. Re-calibrate conductivity controllers at least quarterly

Use hand-held conductivity meter and standardized calibration fluid



## 2. Install corrosion monitoring equipment

Coupons are cost effective and reliable  
Change out coupons every ~90 days

## 3. Work with your treatment provider to optimize conductivity

Chemical: 850-1,000  $\mu\text{S}$

Softening: 10,000+  $\mu\text{S}$



# Key cooling tower take aways

- ✓ Improved monitoring of water quality and corrosion potential is critical
- ✓ Water conservation and extended equipment life go hand in hand
- ✓ Use the Maintenance Checklist!



# Water features / fountains

✓ Check the tip sheet



## Decorative Fountains & Water Efficiency

Decorative fountains add beauty and relaxation to the urban landscape, but can also consume significant volumes of water. Proper monitoring, operation, and maintenance of fountains can help ensure that fountains function beautifully and conserve precious water and resources.

### What can you do?

- **Closely monitor the conductivity of your fountain's recirculating water** to quickly identify and address major problems. If your fountain's conductivity is less than 100 microsiemens (µS), explore for potential leaks or inefficiencies. Questions about conductivity? Contact us!
- **Minimize filter backwash frequency and length of time.** Consult with your water quality provider and/or equipment manual for help with these settings.
- **Install and regularly read a remote read makeup water meter** to expedite identification and monitoring of leaks or other issues.
- **Regularly check level controller or float valve operation** to avoid unnecessary water loss to drain.
- **Schedule monthly visits with a trusted treatment provider** to ensure continued proper water treatment and fountain safety.
- **Use timers and weather-sensitive spray height adjustments** to minimize water loss at night and on windy days.
- **Consider using captured rainwater as an alternative water source** to reduce the amount of water used.

### Questions? Contact us!

Learn more ways to save on your utility bills and get recognized for your conservation efforts with Seattle Public Utilities' Green Business Program:

[www.seattle.gov/util/GreenFourBusiness](http://www.seattle.gov/util/GreenFourBusiness) (206) 343-8505 [greenbusiness@seattle.gov](mailto:greenbusiness@seattle.gov)



# Landscaping - Resources

The screenshot shows a web browser window displaying the 'Landscape Professionals' page on the Saving Water Partnership website. The browser's address bar shows the URL [www.savingwater.org/Businesses/LandscapeProfessionals/index.htm](http://www.savingwater.org/Businesses/LandscapeProfessionals/index.htm). The website header features the Saving Water Partnership logo and navigation links for 'About Us' and 'Contact Us'. A search bar is also present. The main navigation menu includes 'Home', 'Lawn & Garden', 'Indoors', 'Businesses', 'Resources', 'Students & Teachers', and 'Rebates'. The 'Businesses' section is highlighted, with a sub-menu listing 'Apt/Condo Owners & Managers', 'Small Businesses', 'Food & Hospitality', 'Medical & Research Facilities', 'Landscape Professionals', and 'Commercial & Industrial'. The 'Landscape Professionals' page content includes a title, a sub-header, a paragraph of text, a list of resources, and a 'Quick tips' section. An image of a landscaper working in a garden is also visible.

Landscape Professionals—Sa x +

www.savingwater.org/Businesses/LandscapeProfessionals/index.htm

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**Businesses**

- Apt/Condo Owners & Managers
- Small Businesses
- Food & Hospitality
- Medical & Research Facilities
- Landscape Professionals**
- Commercial & Industrial

## Landscape Professionals

### Give your customers what they want


The fastest growing sector of the landscape industry is providing services that minimize chemical use and water waste, and maximize plant health and efficient resource use. Get started with [Natural Landscaping: Design, Build, Maintain](#) (pdf).

Use these resources to learn more about:

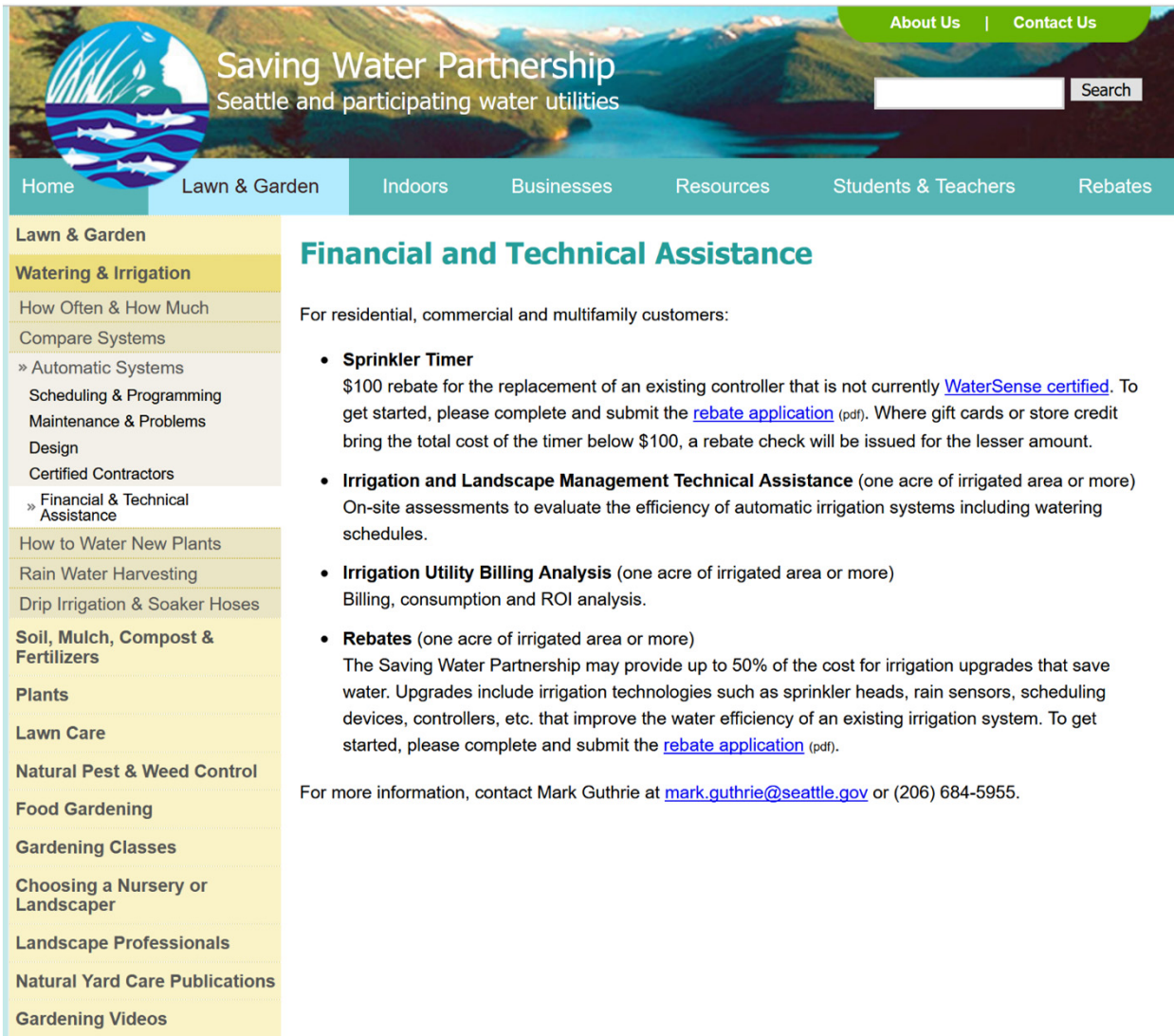
- [Watering and Irrigation](#) - for irrigation maintenance, scheduling, rebates, and more, including [Designing Irrigation Systems to Save Water](#).
- [Integrated Pest Management](#) - Learn pest identification, and find the least toxic control methods.
- [Landscape Maintenance Plans](#) - Use these examples to develop professional plans that sell your services to homeowner associations, institutions, and residents.
- [EnviroStars Certification for Landscape Professionals](#) - Get certified and promote your business as an Envirostar.

### Quick tips

- Group plants by water need, and match to irrigation zones. Select low water use varieties.
- Use [Irrigation Association](#) certified designers.
- Schedule irrigation based on plant needs and weather, see [www.IWMS.org](http://www.IWMS.org)
- Zone turf separately, and consider letting low-wear turf go dormant.



# Landscaping - \$



The screenshot shows the website for the Saving Water Partnership, which serves Seattle and participating water utilities. The page is titled "Financial and Technical Assistance" and is specifically for landscaping. The navigation menu includes Home, Lawn & Garden, Indoors, Businesses, Resources, Students & Teachers, and Rebates. The "Lawn & Garden" section is expanded, showing various sub-topics like Watering & Irrigation, Soil, Mulch, Compost & Fertilizers, and Plants. The main content area lists three types of assistance: Sprinkler Timer, Irrigation and Landscape Management Technical Assistance, and Irrigation Utility Billing Analysis. A contact information for Mark Guthrie is provided at the bottom.

**Saving Water Partnership**  
Seattle and participating water utilities

About Us | Contact Us

Search

Home | Lawn & Garden | Indoors | Businesses | Resources | Students & Teachers | Rebates

## Lawn & Garden

- Watering & Irrigation
  - How Often & How Much
  - Compare Systems
  - » Automatic Systems
    - Scheduling & Programming
    - Maintenance & Problems
    - Design
    - Certified Contractors
  - » Financial & Technical Assistance
- How to Water New Plants
- Rain Water Harvesting
- Drip Irrigation & Soaker Hoses
- Soil, Mulch, Compost & Fertilizers
- Plants
  - Lawn Care
  - Natural Pest & Weed Control
  - Food Gardening
  - Gardening Classes
  - Choosing a Nursery or Landscaper
  - Landscape Professionals
  - Natural Yard Care Publications
  - Gardening Videos

## Financial and Technical Assistance

For residential, commercial and multifamily customers:

- **Sprinkler Timer**  
\$100 rebate for the replacement of an existing controller that is not currently [WaterSense certified](#). To get started, please complete and submit the [rebate application](#) (pdf). Where gift cards or store credit bring the total cost of the timer below \$100, a rebate check will be issued for the lesser amount.
- **Irrigation and Landscape Management Technical Assistance** (one acre of irrigated area or more)  
On-site assessments to evaluate the efficiency of automatic irrigation systems including watering schedules.
- **Irrigation Utility Billing Analysis** (one acre of irrigated area or more)  
Billing, consumption and ROI analysis.
- **Rebates** (one acre of irrigated area or more)  
The Saving Water Partnership may provide up to 50% of the cost for irrigation upgrades that save water. Upgrades include irrigation technologies such as sprinkler heads, rain sensors, scheduling devices, controllers, etc. that improve the water efficiency of an existing irrigation system. To get started, please complete and submit the [rebate application](#) (pdf).

For more information, contact Mark Guthrie at [mark.guthrie@seattle.gov](mailto:mark.guthrie@seattle.gov) or (206) 684-5955.

# Numerous Opportunities

The screenshot shows a web browser window displaying the 'Businesses' page of the Saving Water Partnership website. The browser's address bar shows 'www.savingwater.org/Businesses/index.htm'. The website header features the organization's logo and name, along with navigation links for 'About Us' and 'Contact Us'. A search bar is also present. The main navigation menu includes 'Home', 'Lawn & Garden', 'Indoors', 'Businesses' (which is highlighted), 'Resources', 'Students & Teachers', and 'Rebates'. On the left side, there is a sidebar menu for 'Businesses' with categories: 'Apt/Condo Owners & Managers', 'Small Businesses', 'Food & Hospitality', 'Medical & Research Facilities', 'Landscape Professionals', and 'Commercial & Industrial'. The main content area is titled 'Businesses' and features a sub-heading 'Water Efficiency Solutions for your Business'. Below this, a paragraph explains the resources available and provides contact information for Program Manager Arece Hampton at [arece\\_hampton@seattle.gov](mailto:arece_hampton@seattle.gov) or (206) 733-9137. A decorative wave graphic is positioned below the text. To the right, there are two video thumbnails: 'Water Reuse at Fre...' and 'High Efficiency Rest...'. The 'High Efficiency Rest...' video thumbnail includes a graphic with the following data: '450 Toilets', '150 Urinals', 'Office Bldg. "A"', 'Cost: \$0', and 'Annual Savings: \$71,500'. Below the video thumbnails, there is a 'rebates' section with a dollar sign icon and text stating 'We offer many rebates and incentives towards the purchase of efficient products that will save...'. At the bottom of the main content area, there is a link to 'See Fred Hutchinson Cancer Research Center case study'.

Businesses—Saving Water P x +

www.savingwater.org/Businesses/index.htm

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Home Lawn & Garden Indoors **Businesses** Resources Students & Teachers Rebates

**Businesses**

Apt/Condo Owners & Managers

Small Businesses

Food & Hospitality

Medical & Research Facilities

Landscape Professionals

Commercial & Industrial

**Businesses**

**Water Efficiency Solutions for your Business**

The Saving Water Partnership has a number of resources for all types of commercial businesses to help maximize water efficiency and cost savings. Explore the sector information and if you have a more specific goal or question, please contact Program Manager Arece Hampton at [arece\\_hampton@seattle.gov](mailto:arece_hampton@seattle.gov) or (206) 733-9137 and start saving today.

**videos**

Water Reuse at Fre...

Fred Hutchinson Cancer Research Center

High Efficiency Rest...

450 Toilets  
150 Urinals  
Office Bldg. "A"  
Cost: \$0  
Annual Savings: \$71,500

High efficiency restroom fixtures

**rebates**

We offer many rebates and incentives towards the purchase of efficient products that will save...

look who's saving...

We're shining a light on businesses and institutions who are working hard to reduce waste and minimize their impact on the environment. Learn from these case studies and start saving at your facility. [See all case studies.](#)

**Fred Hutchinson Cancer Research**

- \$300 - Cost to implement
- 2 Weeks - Payback time
- 1,500 gallons - Daily water savings
- \$7,847 - Annual cost savings

See Fred Hutchinson Cancer Research Center [case study](#)

# Custom Incentives

## Have an idea for a water-saving project at your facility? Get a **Custom Rebate!**

The Saving Water Partnership  
can assist businesses that want to

- ✓ conserve water
- ✓ save on utility bills

Get up to **50%** of a project cost in rebates!

- 1 Complete** an application describing the project
- 2 Schedule** a site visit if necessary
- 3 Install** project measures
- 4 Submit** project documentation

### Saving Water Partnership Service area

Order River Water & Sewer District  
City of Bellingham  
City of Duval  
City of Mercer Island  
City of Rainier  
Coal Creek Utility District  
Highline Water District  
K.C. Water District #23  
K.C. Water District #45  
K.C. Water District #49  
K.C. Water District #90  
K.C. Water District #118  
K.C. Water District #125  
North City Water District  
Northshore Utility District  
Olympic View Water & Sewer District  
Seattle Public Utilities  
Snoo Creek Water & Sewer District  
Woodville Water District

**Sign up today!**  
Call (206) 343-8505



# Thank you!

For more information:

<http://www.savingwater.org/Businesses/index.htm>