# HARTSTENE POINTE WATER-SEWER DISTRICT RESOLUTION 2017 - 03

# A RESOLUTION OF THE HARTSTENE POINTE WATER-SEWER DISTRICT BOARD OF COMMISSIONERS ESTABLISHING A WATER SHORTAGE RESPONSE PLAN

**WHEREAS**, Hartstene Pointe Water-Sewer District is responsible for providing quality water without interruption, and

WHEREAS, circumstances beyond the control of Hartstene Pointe Water-Sewer District can interrupt water supply; and

WHEREAS, Hartstene Pointe Water-Sewer District is responsible for contingency planning in case of water shortages; and

WHEREAS, Resolution 2010-05 establishes a water shortage response plan; and

WHEREAS, changes within the water system necessitate the water shortage plan be reviewed and updated; now

# THEREFORE THE BOARD OF COMMISSIONERS OF HARTSTENE POINTE WATER-SEWER DISTRICT HEREBY RESOLVES:

- 1. Resolution 2010-05 is hereby rescinded.
- 2. The attached Water Shortage Response Plan is approved and shall be used as a planning tool by the District.

ADOPTED, by the Board of Commissioners of Hartstene Pointe Water-Sewer District, at a regular scheduled meeting on \_\_\_\_\_\_\_\_.

HARTSTENE POINTE WATER-SEWER DISTRICT

Mason County, Washington

Mary Alice Cary, President

Andrew Hospador, Secretary

David McNabb, Commissioner

# HARTSTENE POINTE WATER-SEWER DISTRICT WATER SHORTAGE RESPONSE PLAN

The District's Water Shortage Response Plan provides guidance on the District's reaction to water shortages caused by droughts, infrastructure failures, water contaminations, or other unforeseen events.

#### REFERENCE DOCUMENTS

- 1. WAC 246-290-100: Requires water system planning
- 2. 2008 Water System Plan: Description of the water system
- 3. Comprehensive Emergency Response Plan, Page Z-13: Establishes Plan

#### DESCRIPTION OF SERVICE AREA

Hartstene Pointe Water-Sewer District has 2 wells to serve 532 lots and the common properties. Well 1 has a screen depth of 160 feet and its production is limited to 30 gpm due to degradation of the screened area. Well 2 has a screen depth of 165 feet and has a production rate of 80 gpm. The water distribution system consists of one steel tank that normally has about 188,000 gallons of water.

(At present) Well 2 is the well with the greatest production with 80 gpm. For planning purposes, it is assumed that well is not operational during the water shortage. With the other well on-line with 30 gpm, the sustainable production for 24 hours is 43,200 gallons per day.

There is 188,000 gallons of total storage available with pressure provided by two booster pumps. The primary pump is a Grundfos ½ horse power model 25S 115 volt pump capable of 30 gallons per minute. Pump #2 is a Grundfos 15HP model 300S 480 volt pump capable of 260 gallons per minute. During a power outage the ½ horse power 115 volt pump can be powered by a small generator.

The District only serves the Hartstene Pointe community and has no interties with any other water system.

The District is residential, with one clubhouse. There is an 80,000 gallon swimming pool at the club house.

#### **CAUSES OF SHORTAGES**

Hartstene Pointe Water-Sewer District can anticipate water shortages caused by the following events:

✓ Drought

- ✓ Failed infrastructure
- ✓ Contaminated water
- ✓ Extended power outage

Drought occurs when the lack of precipitation affects the groundwater supply. Although droughts have immediate effects on surface water, long term droughts can affect ground water supplies. Shallow aquifers are the first to be affected by drought and shallow wells go dry. As the precipitation continues below normal for a period of years, the amount of recharge into the deeper aquifers decreases. Over a period of years, the deep aquifers are impacted by sustained drought. It is important to note that the local aquifers are not recharged by runoff from either the Cascade or the Olympic Mountains. The District's only recharge is from local rain in the local recharge areas. As the rain decreases and the recharge area are developed, there is less water to replenish the aquifers.

Failed infrastructure can immediately affect the water distribution system. Each of the District's wells use a submersible well to produce water. If a combination of these pumps fails, the distribution will suffer a shortage of water. If the replacement pump is not readily available, it may take a week to locate and ship it to the District.

Failed infrastructure can also include structural failure of water tank. This would typically occur during a significant earthquake. A substantial decrease in storage would require the pumps to operate longer than normal. The extra water from the wells would help compensate for the decreased storage volumes. Structural repairs on the tank typically take weeks to months.

Failed infrastructure can also include broken water mains. A water main repair is usually repaired in one to two days; a major break would require isolation of the affected area until repairs are completed. However, numerous breaks as could occur in an earthquake or several breaks of the larger water mains would take longer to repair. If the breaks occur in a high water-demand period, a water shortage may occur. The pumps may have trouble meeting the high demand while simultaneously replacing the lost water from the break.

Water contamination can create an unexpected water shortage at any time without any prior notice. The District routinely samples water throughout the distribution system to check for water quality. If for any reason, a water sample indicates a serious public health threat such as e coli or chemical contamination, that water cannot be supplied by the system. The water has to be drained, the source of contamination found and corrected, and the distribution system cleaned. This activity can take days or weeks.

Extended power outages caused by earthquakes, windstorms, ice storms or fires can create an unexpected water shortage at any time without any or very little prior notice. With conservation measures in effect storage can supply water for 48 to 60 hours. The District presently has 1 mobile generator capable of operating Well 1 only.

#### VIABLE ACTIONS

During a water shortage, Hartstene Pointe Water-Sewer District needs to have its rate payers decrease their water consumption. In order to achieve this goal, the District can use a combination of the following:

- ✓ Voluntary Conservation
- ✓ Mandatory Conservation
- ✓ Water Supply Points

Increased well production is not an alternative. The present wells are at max production due to screen clogging. Increased pumping of the wells would result in water level draw down exposing the pump motors to air and damaging the pump and motor.

Voluntary conservation is used throughout the year. A water shortage will require enhanced emphasis on water conservation. Conservation efforts can include:

- ✓ Water efficient fixtures, such as low flow toilets and Energy Star washing machines.
- ✓ Water efficient practices such as shorter showers, using hose nozzles, and other similar personal practices.
- ✓ Lawn irrigation on even or odd days, in the evening or early morning.
- ✓ Decreased car washing.

Mandatory conservation would be a result of a specific water shortage event and would include penalties for failure to conserve water. They could include:

- ✓ Lawn irrigation restrictions such as timing and inefficient water use, such as flows directed to impermeable surfaces.
- ✓ Prohibition of lawn and common area irrigation.
- ✓ Large scale irrigation restrictions
- ✓ Use of water outside the house.

If the water distribution system cannot be used to deliver water to the rate payers, the District will need to establish water supply points. These water supply points can be the District tank that is filled, but the water cannot be supplied through the pipe system. The tank can be filled by the well pumps if one of the two lines to the reservoir is intact or by water transport trucks. Water transport trucks can be used for the supply points, but that prohibits the truck from returning for more water. Portable water tanks, such as 500 gallon tanks, can be used for supply points. These tanks may be available from the military during a declared emergency. If portions of the distribution system can be supplied, the fire hydrants can be modified as a supply point. If the Wells are intact and power available they can be isolated from the distribution system for supply points.

For longer durations of water shortages, the State of Washington can authorize emergency wells to be drilled. This is expensive and time consuming. A well, several hundred feet deep could take weeks or months to drill and be connected to the water system. Hartstene Pointe may outfit and bring the existing third well on line in lieu of operating Well 2. The Well 3 well log shows the water production capability of the well to be higher than Well 2

The Department of Ecology can also issue emergency water rights that will authorize the District to pull more water from those wells that can produce in excess of its water rights.

#### DEMAND REDUCTION OPTIONS

When circumstances require the public to reduce its demand for potable water, Hartstene Pointe Water-Sewer District has a variety of options to use. These include:

- ✓ Public information and education
- ✓ User restrictions
- ✓ Pricing incentives
- ✓ Penalties

Throughout the year, water purveyors encourage water conservation with messages on the water bills, newsletters, and different types of printed material. When a water shortage occurs, the rate payer is aware of different techniques to reduce water consumption. The District needs to communicate with the rate payer to inform the community that a water shortage is in place. This can be through the news media (radio, television, and newspapers), door hangers, mass mailings, or similar actions. For identified customers whose consumption justifies special action, the District can also call them on the telephone utilizing our emergency auto dialer.

If education alone is not sufficient, the District can implement use restrictions. As discussed previously, this includes limiting lawn irrigation, car washing, and outdoor water use.

Pricing incentives reinforce the need for conservation. By having a tier rate, customers pay more per gallon for large volumes of consumption. If required, the District can also establish a water-shortage surcharge to increase the cost of water for a temporary period.

Penalties are the most stringent of tools to encourage water conservation. Monetary penalties for outdoor water use, irrigation, or unusually high consumption should reinforce the need to reduce water consumption.

#### SUPPLY AUGMENTATIONS

If reduced water consumption is not sufficient to address the water shortage problem, the District will consider increasing its water supply. Repairing the infrastructure problem is always the obvious action. Other means to augment water supply include the following:

- ✓ Trucking water
- ✓ Well drilling
- ✓ Using dead storage
- ✓ Increasing well capacity

Commercial companies can provide trucks and trailers for potable water. If the circumstances allow, the military has potable water trailers that can be used as water supply points.

For certain emergencies, the Department of Ecology will issue emergency water rights or will authorize drilling of emergency wells.

Dead storage is that water in existing tanks that cannot be delivered to the rate payers at 20 psi or greater without the use of the booster pumps.

Surging a well will often increase its capacity. If circumstances permit it, the District can hire a well driller to remove the pump assembly and surge the well. This has the potential of clearing the well screens and increasing production, but it is not guaranteed to work every time.

#### **STAGES**

It is not unusual for a water shortage to progress through stages. As the crisis increases, the District would move from one stage to another, each stage requiring more stringent actions to reduce water consumption. The stages use uniform language for consistency throughout the State and are as follows:

- 1. **Minor Shortage:** Voluntary measures are needed to reduce water consumption. The goal is to reduce consumption by 5% to 10%.
- 2. **Moderate Shortage:** Mandatory measures are required to reduce water consumption. The goal is to reduce consumption by 10% to 20%. This may require enforced measures and a revised rate structure.
- 3. **Severe Shortage:** Rationing required in order to reduce water consumption. The goal is to reduce consumption by 30%.

In addition to the above stages, there are:

- ✓ **Advisory Stage:** There is not a water shortage, but there are indications that a shortage may occur. This could be implemented by an anticipated drought or dry period, or planned infrastructure repairs.
- ✓ Emergency Curtailment: Emergency curtail is more than conservation. Due to an immediate water quality problem or shortage, customers have to curtail their water use without undue delay.

#### TRIGGERING CRITERIA

The District has three indicators to determine the demand on a well. These are static levels, drawdown levels, and production. During a high demand period for water, the wells may operate from 20 to 24 hours per day. This run time does not allow sufficient time to turn off the well, allow it to recover and to measure the static water level. Drawdown levels fluctuate, and do not provide a uniformly reliable indicator of the well's health.

Hartstene Pointe Water-Sewer District will use water production as its triggering criteria. The total sustainable water production from all wells is presently 110 gallons per minutes (gpm) or 158,400 gallons per day (gpd). For planning purposes, Well 2 is assumed to be non-operational and the sustainable production would be 43,200 gallons per day.

Due to the number of vacation homes in the community, the assumption that the Average Daily Demand for water is 71,000 gallons per day is not applicable. The summer time water use substantially increases from the winter demand. Therefore, the following is considered average flows for planning purposes:

PERIOD	AVERAGE DAILY DEMAND
May 1 <sup>st</sup> to September 30 <sup>th</sup> November 1 <sup>st</sup> to April 30 <sup>th</sup>	80,000 gallons per day (gpd) 40,000 gallons per day (gpd)

To minimize the short term effects of temporary decrease in production, the Criteria Flow is a 10-day running average of the system's production capability.

# **SUMMER PERIOD: MAY - SEPTEMBER**

- ✓ When the Criteria Flow is greater than 108,000 gallons per day, the distribution system is considered to be operating routinely. There is no water shortage and regular water conservation messages would be forwarded to the rate payers.
- ✓ When the Criteria Flow is 108,000 gallons per day or less, the District is experiencing a Minor Shortage. The District shall communicate with the rate payers to try to reduce 10% of their water consumption. Educational materials would be offered. Outdoor water use restrictions would be voluntary.
- ✓ When the Criteria Flow is 80,000 gallons per day or less, the District is experiencing a **Moderate Shortage**. The District shall communicate with the rate payers to try to reduce 20% of their water consumption. Educational materials would be offered. Outdoor water use restrictions would be mandatory. If necessary, more restrictive measures would be implemented. If possible and appropriate, the District begins seeking permission and funding to drill an emergency well. Other source augmentation methods would also be used to increase production.
- ✓ When the Criteria Flow is 60,000 gallons per day or less, the District is experiencing a Severe Shortage. The District shall communicate with the rate payers to try to reduce 20% of their water consumption. All demand reduction options are considered. Source augmentation methods would also be used to increase production.

# WINTER PERIOD: NOVEMBER - APRIL

✓ When the Criteria Flow is greater than 108,000 gallons per day, the distribution system is considered to be operating routinely. There is no water shortage and regular water conservation messages would be forwarded to the rate payers.

- ✓ When the Criteria Flow is 108,000 gallons per day or less, the District is experiencing a Minor Shortage. The District shall communicate with the rate payers to try to reduce 10% of their water consumption. Educational materials would be offered. Outdoor water use restrictions would be voluntary.
- When the Criteria Flow is 40,000 gallons per day or less, the District is experiencing a **Moderate Shortage**. The District shall communicate with the rate payers to try to reduce 20% of their water consumption. Educational materials would be offered. Outdoor water use restrictions would be mandatory. If necessary, more restrictive measures would be implemented. If possible and appropriate, the District begins seeking permission and funding to drill an emergency well. Other source augmentation methods would also be used to increase production.
- ✓ When the Criteria Flow is 30,000 gallons per day or less, the District is experiencing a **Severe Shortage**. The District shall communicate with the rate payers to try to reduce 20% of their water consumption. All demand reduction options are considered. Source augmentation methods would also be used to increase production.

# ADVISORY STAGE

#### **OBJECTIVES**

To prepare rate payers for potential water shortage thereby allowing all parties adequate planning and coordination time.

To undertake supply management actions that forestalls or minimizes the need later for more stringent demand or supply management actions.

#### **TRIGGERS**

- 1. Anticipated infrastructure repairs will affect the water production so the water production is 108,000 gallons per day or less.
- 2. Public weather forecasts strongly indicate a drought or other severe weather that would affect the water system.
- 3. Water demand is expected to be high, such as on July 4<sup>th</sup>.

#### PUBLIC MESSAGES

- 1. The potential exists for water shortages.
- 2. Customers may be asked to reduce water consumption.
- 3. Hartstene Pointe Water-Sewer District will keep you informed.

## ADVISORY STAGE ACTIONS

- O Brief Board of Commissioners.
- O Intensify on-going media education effort about the water system, particularly the relationship of weather patterns to supply and demand.
- O Develop a fact sheet.
- O Put a conservation message on the districts billboards.
- O Put current and update information on the District web page.
- O Ask the HPMA to send message via email blast directing customers to the Districts website.
- O Emphasize reduction of outdoor water use.
- O Reduce the District's use of outdoor water use.
- O Place conservation message on the customer bills.
- O Contact the Hartstene Pointe Maintenance Association (HPMA) to advise them of the situation.
- O Review procedures for emergency water rights, if necessary.
- O Have the District inspect the wells to identify any potential problems for water production.
- O Evaluate the ability, resources and plans to move to a Minor Shortage Stage.

## MINOR WATER SHORTAGE STAGE

#### **OBJECTIVES**

To maintain or reduce demand to meet target consumption levels by customer voluntary actions.

To forestall or minimize need later for more stringent demand or supply management actions.

To minimize the disruption to customer's lives while meeting target consumption goals.

#### **TRIGGERS**

- 1. The Minor Shortage Stage is implemented when the Criteria Flow is 108,000 gallons or less. The Criteria Flow is defined as the 10-day running average of sustainable water production.
- 2. Demand levels or temporary water quality circumstances indicate the need for a more systematic response to manage the situation.

#### PUBLIC MESSAGES

- 1. The District is relying on the support and cooperation of <u>all</u> water users to stretch the availability of water supply.
- 2. Demand needs to be reduced by at least 10%. Customers are responsible for determining how they will meet that goal. Water waste is not allowed.
- 3. With customer cooperation, we may avoid imposing more stringent restrictions.

#### MINOR WATER SHORTAGE STAGE ACTIONS

The daily water production is the parameter used to measure the reaction to the water shortage. The Operations Foreman will be assigned to post the daily water production and the 10-day running average so all employees can be aware of it.

- O Brief the Board of Commissioners
- O Continue actions in the Advisory Stage
- O Put a stronger conservation message on the Districts billboards.
- O Ask the HPMA to send message via email blast directing customers to the Districts website.
- O Prepare the appropriate resolutions regarding emergency surcharges, if required.
- O Send press releases to the local media to maintain customer awareness of the need to conserve.
- O Prepare mailer to the rate payers with recommended ways to reduce water consumption.
- O Identify what potential steps will be used to reduce demand including timing and what type of restrictions and/or surcharges will be imposed.
- O Place pertinent information on the web page and encourage people to refer to it.

- O Limit all flushing during a water shortage.
- O Contact the HPMA to advise them of the problem and possible water restrictions.
- O Request the Fire Department minimize exercises that use water.
- O Request that cleaning by hosing be limited to situations that require it for public health and safety.
- O Identify customers who appear to be wasting water and send personalized letters to them.
- O Request emergency water rights, if necessary.
- O Expedite any repairs or improvements that can improve water production.
- O Evaluate the ability, resources and plans to move to a Moderate Water Shortage Stage.

# MODERATE WATER SHORTAGE STAGE

#### **OBJECTIVES**

To achieve targeted consumption reduction goals by restricting defined water uses.

To ensure that adequate water supply will be available during the duration of the water shortage situation to protect public health and safety.

To forestall or minimize the need later for more stringent demand or supply management actions.

To minimize the disruption to customer's lives and common property usage while meeting target consumption goals.

To maintain the highest water quality standards throughout the shortage.

To promote equity among customers by establishing clear restrictions that affect all customers.

#### **TRIGGERS**

- 1. The Moderate Shortage Stage is implemented when the Criteria Flow is 81,000 gallons per day. The Criteria Flow is defined as the 10-day running average of sustainable water production.
- 2. Demand levels or temporary water quality circumstances indicate the need for a more systematic response to manage the situation.

#### **PUBLIC MESSAGES**

- 1. It is necessary to impose mandatory restrictions to reduce demand because the voluntary approach has not resulted in the necessary water savings.
- 2. The District continues to rely on the support and cooperation of <u>all</u> water users to comply with the restrictions.
- 3. Demand needs to be reduced by at least 20%.
- 4. Certain water uses will be restricted to ensure that throughout the duration of the water shortage, an adequate supply of water is maintained for public health and safety.
- 5. With customer cooperation, we may avoid imposing more stringent restrictions.

#### MODERATE WATER SHORTAGE STAGE ACTIONS

- O Brief the Board of Commissioners
- O Put a warning message on the Districts billboards.
- O Post appropriate messages at all HPMA common areas.
- O Advise the Department of Health and Health District.

- O Rate surcharges would be implemented to encourage customer compliance with the restrictions. The rate surcharge would be implemented by resolution with the only exceptions given to customers with special medical needs such as home dialysis.
- Water restrictions and penalties would be implemented by the Board of Commissioners
- O Press releases are submitted to newspapers, television and radio
- O Direct mailings are sent to each rate payer telling them of the circumstances and restrictions.
- O Utilize the emergency auto dialer to alert customers.
- O The District uses its 360-427-2413 telephone number as a Customer Response Line to report violations of restrictions.
- O Continue appropriate actions from previous stages.
- O Request emergency water rights.
- O Seek funding for an additional well.
- O Evaluate the ability, resources and plans to move to the Emergency Curtailment Stage.

# EMERGENCY CURTAILMENT STAGE

#### **OBJECTIVES**

A critical water shortage situation exists. Without additional significant curtailment of water, public health and safety can be jeopardized.

#### **TRIGGERS**

Worse conditions than the other stages have occurred or are imminent.

#### PUBLIC MESSAGES

- 1. A critical water shortage situation exists.
- 2. Although customer response to-date is appreciated, without additional significant curtailment actions, a shortage of water for public health and safety will be imminent.
- 3. Increasing stringent water use restrictions will be established and enforced.

#### EMERGENCY CURTAILMENT STAGE ACTIONS

- O Brief the Board of Commissioners
- O Put an emergency message on the Districts billboards.
- O Post appropriate messages at all HPMA common areas.
- O Advise the Department of Health and Health District.
- O Shut down water usage at the HPMA docks, pool and all common area facilities.
- O Continue all previous applicable actions
- O Define the problem to the public as an emergency and institute formal procedures to declare a water shortage emergency.
- O Inform the customers of the rate surcharge and restrictions. Advise them of the appeal procedures.
- O Brief the Sheriff and Fire District on the emergency, and seek their cooperation in enforcing the restrictions.
- O Inform the customers of possible water, odor, and pressure problems that may occur
- O Coordinate with the medical and special needs customers.
- O Curtail fire line testing and flushing
- O Prohibit all lawn irrigation
- O Request all Fire District water use for training be curtailed.
- O Rescind all hydrant permits.

# DEFINED AREA CURTAILMENT STAGE

#### **OBJECTIVES**

A critical water shortage situation exists or will soon exist. The shortage will be limited to a defined area instead of the entire water system. This area can be a few homes on a street, a subdivision, or entire pressure zone, such a Promontory Rd.

To minimize the disruption to customer's lives while correcting the cause of the water shortage.

To maintain the highest water quality standards throughout the shortage.

#### TRIGGERS

The defined area is affected by an unexpected or a planned interruption of water supply. This could occur by a critical valve failure, a water main break, or planned maintenance.

A water quality issue such as a failed sample can also trigger curtailment to a defined area.

#### **PUBLIC MESSAGES**

- 1. Advise the properties within the defined area of the problem and the boundary of the affected area.
- 2. Tell them of the corrective actions underway and the expected duration of the problem.
- 3. Request customer cooperation in curtailing water use.
- 4. Hartstene Pointe Water-Sewer District will keep you informed.

# **CURTAILMENT STAGE ACTIONS**

- O Brief the Board of Commissioners
- O Define the affected area and notify all District employees
- O Use the most expedient and practical means to advise the affected customers. This would be telephone calls, door hangers, posted signs, or direct mailings.
- O Evaluate the need and potential for augmenting the area's water supply, such as temporary piping, water supply points, bottled water or other means.

At the conclusion of the requirement for water restrictions, advise the customers in the defined area.

## AFTER ACTION STAGE

After any water shortage notice, the District needs to contact the affected customers telling them that the emergency situation is over.

At the conclusion of any water shortage action, it is imperative that the District evaluate its actions to identify lessons learned and to determine any improvements.

A formal evaluation report should be prepared. The report may include the following:

- O What caused the water shortage?
- O Identify the chronology of District actions.
- O What actions worked particularly well?
- O What actions went particularly bad, and why?
- O What media was contacted and how did they respond?
- O How did the customers respond?
- O What was the impact on staffing and the budget?
- O What items can be purchased to be on-hand to assist if the situation re-occurs.
- O What recommendations can be made?
- O What can the District do to help avoid or minimize future occurrences?
- O Are revisions to the Water Shortage Response Plan or Emergency Response plan needed?

#### ATTACHMENT A

#### POSSIBLE VOLUNTARY CUSTOMER ACTIONS

#### **Residential Indoors**

- ✓ Flush the toilet less often. Each flush uses 1.6 to 7 gallons of water depending on the age of the toilet.
- ✓ Use the dishwasher and washing machines only when full. Top loading washers use 15 to 40 gallons per load. Front loading washing machines use approximately 30% less water than residential top loading machines.
- ✓ Keep drinking water cold in the refrigerator rather than running the faucet until the water is cold.
- ✓ Take shorter showers. For every minute of reduced showering time, 2 ½ to 5 gallons is saved.
- ✓ Do not let the faucet run while shaving or brushing teeth. When washing vegetables, use a bowl of water instead of letting water run.
- ✓ Catch water while waiting for the hot water for later use on plants.

#### Residential Outdoor Use

- ✓ Wash cars less often and do so over the lawn instead of the driveway. Instead of using a hose consider a commercial car wash that recycles water.
- ✓ Always use the shut-off nozzle on hoses for window washing, etc.

# Landscape Measures - Common Area and Residential

- ✓ Water lawns and gardens early in the morning or late in the evening to reduce evaporation.
- ✓ Consider letting the lawn go dormant until the shortage is over. Homes that normally water lawns will save 25% to 50% by not watering lawns.
- ✓ If it is raining, do not water the lawn.
- ✓ Eliminate outdoor water play, i.e. running through the sprinkler, plastic water slides, wading/swimming pools that require frequent re-filling.
- ✓ Eliminate all hosing of sidewalks, driveways, and decks.

- ✓ Water established plants only when necessary. Probe the soil to see if the root zone is dry. Mulch from 2 to 4 inches in planting beds will help retain moisture.
- ✓ Create "wells" around trees to minimize runoff when they are watered.
- ✓ If there is an automatic irrigation system, have it audited to ensure the water is being used wisely. Aim it to avoid unnecessary watering of the impermeable areas. Learn how to change the control system in order to cut back on irrigation time. Equip it with a rain sensor that will override the system during rainfall.

#### **Common Areas**

- ✓ Set goals for reduced water use and inform Maintenance employees. Give employees ideas for curtailing water use and ask for their ideas.
- ✓ Inspect the pool systems on a regular basis to detect leaks and broken components.
- ✓ Repair all leaks and dripping faucets. Urge employees to report leaks.
- ✓ Reduce or eliminate routine vehicle washing during shortages. Use commercial car wash facilities that recycle water.
- ✓ Ensure all hoses are fitted with shut-off nozzles.
- ✓ Do not use hose water to dispose of ice.
- ✓ Do not use the hydrants to hose walkways, parking lots, and docks. Pressure washers use substantially less water.
- ✓ Postpone routine building washing during shortages.
- ✓ Post signs at Common Areas informing customers of the nature of water shortages and ask for their cooperation in reducing water use.
- ✓ Accelerate the modernization of restrooms by installing low flow fixtures.