

SECTION 7 WATER SHORTAGE CONTINGENCY PLAN

Law

10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

- (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.
- (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three year historic sequence for the agency's water supply.
- (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.
- (d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
- (e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.
- (f) Penalties or charges for excessive use, where applicable.
- (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
- (h) A draft water shortage contingency resolution or ordinance.
- (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

The effective management of water supply shortages is an important responsibility of water agencies. Shortages may be caused by failures of major water supply facilities, natural disasters, or other adverse conditions. Therefore, it is necessary to have an effective management program to mitigate water supply shortages.

As described in Section 5, the District is using groundwater as its sole source of supply. The Martis Valley Groundwater Basin has a storage volume of about 484,000 acre-feet (AF) and is able support annual withdrawals of at least 24,000 acre-feet per year (AFY). Based upon current withdrawals of about 7,175 AFY, there is over 65 years' worth of water supply available even if there was zero recharge of the groundwater basin. A three year minimum supply of 24,000 AFY has been assumed.

The most likely cause of a water supply shortage would be the failure of a major water supply facility such as a well, pump station or transmission pipeline. Such an occurrence could be caused by a number of factors including earthquake, fire or major equipment failure. As a result, water supply shortages are expected to be somewhat short in duration (days or possibly weeks), but may occur without any warning. The District's water system consists of five major components: control valve stations, groundwater wells, pipelines, pump stations and storage tanks. In May 2004, the District completed a **Vulnerability Assessment** that identified the number of customers that would be impacted by major failure of a given facility. In conjunction with the **Vulnerability Assessment**, the District periodically updates its Emergency Response Plan which identifies actions to be taken in the event of a major failure of a given facility.

Historically, the water supply system has been most impacted by power outages. In response, the District has installed external generator connections and manual transfer switches at all of its pump stations and well sites. The District currently owns two large trailer-mounted portable generators that can be mobilized to any of the District's pump facilities in the event of a power outage. In addition, the District has installed permanently-mounted diesel-powered backup generators at 17 pump station sites. These generators are equipped with automatic transfer switches and will activate in the event of a power outage.

WATER CONSERVATION PROGRAM

Depending upon the type of water supply restriction, its location and the number of customers affected, it would be necessary for the District to implement some form of water conservation – either voluntary or mandatory. **Table 7-1** identifies the various stages of water conservation measures that would be implemented.

Table 7-1. Water Conservation Stages

Stage	Water Conservation Requirement	Compliance Level
1	Targeted 10% Reduction in Usage	Voluntary
2	Targeted 20% Reduction in Usage	Mandatory
3	Targeted 30% Reduction in Usage	Mandatory
4	Targeted 40% Reduction in Usage	Mandatory
5	Targeted 50% Reduction in Usage	Mandatory

Stage 1 Water Conservation

Stage 1 would apply during periods where up to 10 percent of the water supply is unavailable. A corresponding reduction in water usage of 10 percent would be required. This would be achieved through voluntary measures such as:

- Irrigation with potable water of ornamental landscapes and turf would be limited to every other day
- The application of potable water to driveways and sidewalks would be prohibited unless for driveway sealing or construction
- The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle, would be prohibited

Stage 2 Water Conservation

Stage 2 would apply during periods where up to 20 percent of the water supply is unavailable. A corresponding reduction in water usage of 20 percent would be required. Compliance with water conservation requirements is mandatory for Stage 2 and above. Water conservation measures in Stage 2 include:

- Irrigation with potable water of ornamental landscapes and turf would be limited to every other day
- The application of potable water to driveways and sidewalks would be prohibited unless for driveway sealing or construction
- The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle, would be prohibited
- Customers may be subject to fines and penalties for failure to comply with these requirements

Stage 3 Water Conservation

Stage 3 would apply during periods where up to 30 percent of the water supply is unavailable. A corresponding reduction in water usage of 30 percent would be required. Compliance is mandatory. Water conservation measures in Stage 3 include:

- Irrigation of ornamental landscapes and turf would be limited to 3-days per week
- The application of potable water to driveways and sidewalks would be prohibited
- The use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle, would be prohibited
- The District may install flow restricting devices on a customer's service
- Customers may be subject to fines and penalties for failure to comply with these requirements

Stage 4 Water Conservation

Stage 4 would apply during periods where up to 40 percent of the water supply is unavailable. A corresponding reduction in water usage of 40 percent would be required. Compliance is mandatory. Water conservation measures in Stage 4 include:

- Irrigation of ornamental landscapes and turf would be limited to 2-days per week.
- The application of potable water to driveways and sidewalks would be prohibited.
- The use of potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle, would be prohibited.
- Any customer leak in plumbing and / or irrigation systems would be repaired when found, but in any case within ten (10) days of notice by the District to repair. The District may perform the repair or hire a contractor to perform the repair, and then invoice the customer for those costs.
- The District may install flow restricting devices on a customer's service.
- Customers may be subject to fines and penalties for failure to comply with this requirement

Stage 5 Water Conservation

Stage 5 would apply during periods where up to 50 percent of the water supply is unavailable. A corresponding reduction in water usage of 50 percent would be required. Compliance is mandatory. Water conservation measures in Stage 5 include:

- All outdoor water uses would be prohibited in the area affected by the water conservation requirement. The District may discontinue service to irrigation services.
- Any customer leak in plumbing system would be repaired when found, but in any case within ten (10) days of notice by the District to repair. The District may perform the repair or hire a contractor to perform the repair, and then invoice the customer for those costs.
- The District may install flow restricting devices on a customer's service.
- The District may implement mandatory water rationing through the use of rolling outages.
- Customers may be subject to fines and penalties for failure to comply with this requirement.

Effectiveness of the Water Conservation Program

The District currently monitors total production for all sources on a daily basis. This monitoring would be the primary tool to gauge the effectiveness of the water conservation program. Total water production would be compared with production for the same time in prior years and with days prior to implementation of the water conservation program. Other measures would likely

include drive-by inspections of customers to verify irrigation practices and monitoring of customer usage through the District's AMR system.

WATER CONSERVATION ORDINANCE

In September 2014, the District adopted Ordinance 2014-05 which describes the water conservation program to be implemented in the event of a water supply or drought emergency. A copy of the ordinance is given in Appendix D.

The ordinance outlines five stages of water alerts that describe different required conservation efforts. These conservation savings range from voluntary compliance with reasonable conservation efforts in Stage 1 to a mandatory 50 percent reduction in Stage 5. The ordinance authorizes the General Manager of the District to implement these measures immediately upon occurrence of an event requiring such conservation measures. A public meeting of the Board of Directors would then be scheduled as soon as possible to inform the Board and the public of the emergency, the actions taken by the District and the expected duration until the problem could be corrected.

POTENTIAL FINANCIAL IMPACTS

In 2009, the District retained HDR to perform a water rate study and assist in the development of the District's new metered rate structure. This new rate structure became effective in January of 2010. One of the major objectives in developing this new rate structure was to closely match the District's variable revenue stream with its variable expenses and to match its fixed revenue stream with its fixed expenses. Currently, about 85 percent of the Water Department's expenses are fixed and do not vary with the amount of water sold to customers. The remaining 15 percent of expenses is for the costs of pumping and treatment and will vary with customer usage.

In the event that a Stage 5 conservation requirement (50 percent reduction in water usage) was imposed for a significant length of time (a number of months), the District would expect to see a revenue reduction of about 7.5 percent. However, there should be a corresponding reduction in expenses associated with less water being treated and pumped to customers. Any remaining differences between revenue and expenses would likely be covered through the use of reserves. The District would then have to evaluate its overall financial situation during the next annual budget cycle. At that time, the District would review whether rate adjustments were necessary to ensure the financial stability of the Water Department.

The District does not expect any significant impact on expenditures associated with a drought-related water shortage. In the event of a major water supply facility failure, unforeseen expenses can be expected. District staff and/or outside contractors may be required to work overtime and weekends to repair the damaged facility, install a temporary facility or adjust system operations in order to maintain water service to District customers. Similar to a drought-related water shortage, it is expected that the immediate cost impacts would be covered through the use of reserve funds. The District would then review its financial situation once the facility has been repaired.