

DROUGHT
ANNEX TO STATE
EMERGENCY OPERATIONS PLAN

OREGON EMERGENCY MANAGEMENT
(3/88)
Revised 2/91

DROUGHT ANNEX: OREGON EMERGENCY OPERATIONS PLAN

DROUGHT RESPONSE PLAN

Prepared by Oregon Emergency Management
June 1987
(Revised February 1991)

For information on the plan call:
OEM-Assistant Administrator, Plans & Resources
378-4124 or 378-4104

DISCLAIMERS:

1. This plan is a description of the state system for dealing with drought emergencies. It does not carry the force of law. It is not an operational procedure to be used during an emergency.
2. Governmental entities, while complying with the provisions of this plan, shall not be liable for death, injury, or loss of property except in cases of willful misconduct, gross negligence or bad faith.
3. The phone numbers listed in this plan may be subject to change at any time and need to be verified periodically.

CONTINGENCY PLAN

DROUGHT RESPONSE OPERATIONS

EMERGENCY WATER SUPPLY

1. PURPOSE

To provide water supplies for human and livestock consumption under conditions of inadequate supply.

2. OPERATIONAL CONCEPTS

- a. The basic responsibility for initial response to provide emergency water supplies rests with the local government involved.
- b. When water supplies are not sufficient to meet human/livestock needs, the affected individual(s) should contact the Local Emergency Management organization and request assistance.
- c. Local governments, in accordance with emergency operations plans and the emergency powers granted by ORS Chapter 401, should then initiate and conduct emergency water supply operations to the full extent of their resource capability.
- d. Where local resources are insufficient to cope with the situation, additional emergency water supply assistance may be obtained from the State, in accordance with this plan.
- e. If both State and local resources are inadequate to cope with the emergency, the Governor will request additional assistance from the federal government.

3. RESPONSIBILITIES

- a. The Governor, under the emergency powers granted by ORS 401.115, will direct and control distribution of water supplies under drought emergency conditions.
- b. The Administrator of the Oregon Emergency Management (OEM) shall be responsible for coordination of the emergency water supply operations of State departments and agencies, and for coordination of emergency water supply assistance from federal or private sources not otherwise addressed in local emergency plans.
- c. Under the provisions of this plan, departments and agencies of state government having the capability of providing emergency water supply assistance will provide that assistance when directed by the Governor or his authorized representative(s).

- d. Due to the limited availability of State water transportation and distribution equipment, requests for State assistance may also be referred to private industry or volunteer groups for action.

4. EXECUTION

- a. Request for Assistance: Local governments requiring emergency water supply assistance from State or major private resources should direct their requests to:

- 1) Oregon Emergency Management, Salem 378-4124
- 2) Governor's Executive Assistant, Salem 378-3101

- b. Transportation: Under the direction and control of the appropriate department head, the following State departments possess water transportation capabilities and are assigned responsibility for transportation of emergency water supplies:

- 1) Department of Agriculture
- 2) Department of Fish and Wildlife
- 3) Department of Forestry (non-potable; secondary role)
- 4) Department of Transportation
- 5) Military Department
- 6) Public Utility Commission (Liaison for commercial truck transport and railroad tank car availability)

- c. Storage:

- 1) Emergency water storage is the responsibility of the requesting local government or political subdivision. Maximum use should be made of existing storage facilities.
- 2) Information regarding the availability of commercial water storage resources may be obtained from:

Water Resources Department
Oregon Emergency Management 378-4124

- d. Treatment

- 1) Emergency Water Supplies-Human Consumption
 - a) Treatment of emergency water supplies to ensure suitability for human consumption is the responsibility of the requesting local government or political subdivisions.

- b) The Health Division is responsible for certification of water quality for human consumption.
 - 2) Emergency Water Supplies-Livestock Consumption
 - a) Treatment of emergency water supplies to ensure suitability for livestock use is the responsibility of the requesting livestock producer.
 - b) The Department of Agriculture provides assistance in certifying that emergency water supplies are suitable for livestock use.
- e. Distribution:
 - 1) Emergency Water Supplies-Human Use
 - a) Local governments or political subdivisions requesting emergency water supplies for human use shall:
 - 1. Designate suitable deliver/distribution points where the requested water may be delivered.
 - 2. Provide security for water transportation equipment/water supply as required.
 - b) The Water Resources Department shall be responsible for designation of “Water Points” where emergency water supplies may be obtained for further distribution to requesting local governments or political subdivisions.
 - 2) Emergency Water Supplies-Livestock Use
 - a) Livestock producers should submit requests for emergency water supplies for livestock use to:
 - 1. Appropriate County Emergency Board
 - 2. County Emergency Management Organization
 - b) The County Emergency Board and Emergency Management organization shall then:
 - 1. Initiate and “Area Wide” request for livestock water resources.

2. Designate suitable delivery/distribution points where the requested water supply may be delivered.
 3. Provide security for water transportation equipment and/or supply as required.
- c) Equitable distribution of available livestock water supplies from delivery points to individual producers shall be the responsibility of the County USDA Emergency Board, with the assistance of the County Emergency Management organization.
 - d) The Water Resources Department shall be responsible for designation of “Water Points” where emergency water supplies for livestock use may be obtained.

5. APPENDICES

Appendix 1 - Preparedness and Response for Drought

Appendix 2 - Schedule of Oregon Drought Monitoring and Mitigation Activities

Appendix 3 - Federal Drought Assistance Programs

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PREPAREDNESS AND RESPONSE
FOR
DROUGHT

Oregon Emergency Management
Executive Department
March 1988

FORWARD

This document has been prepared as part of Oregon's Emergency Preparedness Planning effort. It is intended to point out the actions that might be taken by Districts, Cities, Counties, State agencies and the Federal Government, if a serious drought should occur in Oregon. The report describes basic lines of authority and communications, and points out request procedures for state or federal assistance.

This report should be utilized in conjunction with the State Emergency Operations Plan. For more information about these drought programs and actions, contact Oregon Emergency Management, 595 Cottage Street, N.E., Salem, OR 97310 (503) 378-4124.

ACRONYMS

ASCS	Agricultural Stabilization & Conservation Service
AWWA	American Water Works Association
BLM	Bureau of Land Management
DEQ	Department of Environmental Quality
DGS	Department of General Services
DHR	Department of Human Resources
DOD	Department of Defense
DOI	Department of Interior
FEMA	Federal Emergency Management Agency
FmHA	Farmers Home Administration
HHS	Health and Human Services
NWS	National Weather Service
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
OEM	Oregon Emergency Management
OSDF	Oregon State Department of Forestry
OSHD	Oregon State Health Division
RCA	Resources Conservation Act
SBA	Small Business Administration
SCS	Soil Conservation Service
SWMG	Strategic Water Management Group
SWSI	Surface Water Supply Index
USDA	United States Department of Agriculture
USFS	United States Forest Service
WAC	Water Availability Committee
WRD	Water Resources Department

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3. Extension Service
4. Department of Economic Development
5. Energy Department
6. Department of Environmental Quality
7. Department of Fish and Wildlife
8. Department of Forestry
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10. Health Division
11. Military Department
12. Water Resources Department
13. Other State Drought Assistance:
 - The State Drought Council
 - The State USDA Emergency Board
 - Presidential Declarations

DROUGHT ASSISTANCE ORGANIZATION

Drought response, like response to other natural disasters and emergencies, progresses from the individual to the closest level of government and thence through progressively higher levels of government up to the presidential level. Only when capability of each response level has been or is expected to be exceeded should the next level of response take place.

The Organizational Chart on page 6A indicates the levels of assistance that might be called upon during a drought. This chart also indicates the lines of communication for information on the drought situation. As the chart indicates, there are parallel lines of communication from individuals and local governmental units. These lines are generally through: the County and State USDA Emergency Boards to the US Department of Agriculture, through State agencies and their district offices and through the local Emergency Management organizations and the State Oregon Emergency Management. The latter should be considered the primary emergency request channel while the former two may be very useful for obtaining drought situation or drought impact information or as alternates to the Emergency Services channel.

Lateral assistance and exchange of information should take place at the individual-city-district level, at the county level, and at the State level. At the State level, emergency information and response is normally coordinated by the Governor through the Oregon Emergency Management. In a drought, however, because of its slowly occurring nature, the coordinative functions are shared by a "State Drought Council" (see page 16).

The Organization described here and expanded upon in subsequent sections should provide for coordinated yet flexible response and information collection.

INDIVIDUALS AND PRIVATE INDUSTRY

Most of the water use in the state is by private individuals and firms who obtain their water from districts, cities, or other private corporations. In addition to being the primary water users, these individuals and firms have the greatest capability to provide emergency water supplies for themselves or to other water users. Many corporations and businesses within the state have equipment or expertise which might be utilized during a drought emergency. Such equipment or services will normally be provided through lease, sale, or other compensation although they may be partially or fully donated as a public service at the discretion of the individual firm. The type of resources which might be available include:

1. Equipment such as pipes, pumping plants, emergency generating systems, water purification systems, and various sizes and types of emergency water containers.
2. Equipment or vehicles for the transporting of emergency water supplies, including tank trucks, tank trailers, and railroad tank cars. Such equipment must be suitable for hauling "potable" water.

3. Specialized expertise or skills, including engineering design and construction, well location and drilling, agriculture advice, and advice on various consumer services.

Responsibility for locating, obtaining, and reimbursing private firms for providing such services generally rests with the individual needing the service. Local governing bodies, through local Emergency Management organizations, or the Governor's authorized representative the Oregon Emergency Management, may obtain such services where a major public need is involved. Individuals and firms should request assistance through their city or district, or through their local Emergency Management organization.

IRRIGATION DISTRICTS

Oregon has over 80 irrigation districts which have the responsibility of providing irrigation water to members of the district. During a drought, assistance to district members will generally consist of allocation of the district's available water, so as to maximize the benefit to all district members insofar as permitted by the individual water rights of the members. The governing body of a district may, in an emergency, provide or conserve water to assist water users who are not district members. The district staff may also encourage or enforce agricultural water conservation practices within the district. If emergency water is needed by the district, it is the responsibility of these districts to request such water on behalf of its members. This request should be passed through the local watermasters office. The irrigation districts should estimate their future drought situation and relay such information to their local Emergency Management organizations and USDA County Emergency Board, along with information on steps taken to alleviate the situation.

WATER DISTRICTS OR CITIES

Over 130 water districts and 240 cities in Oregon provide water for domestic and municipal use to members or residents. During a drought, assistance will most often consist of allocation of existing water supplies so as to maximize the benefit to all water users. Cities and water districts may encourage or enforce water conservation practices or may restrict or curtail certain uses of water in an emergency. When available or anticipated water supplies are inadequate, these cities and districts may seek additional water to augment their supplies. One of the tools available to cities for obtaining these additional supplies is condemnation of the water sources of other water users after just compensation of the user. Cities may provide and distribute emergency water supplies to their residents and visitors through city fire service or other equipment available.

The governing body of a city or water district may authorize provision of emergency water to other cities or districts or to water users outside of the city or water district and may charge water users so assisted for the additional cost of providing such emergency water. Additional water rights may be needed in connection with such assistance. Request of assistance shall be limited to the local watermaster's office.

It is the primary responsibility of cities or water districts to request assistance in providing emergency water on behalf of their residents or members. Such requests should be made through

the county emergency management organizations, except where a district lies within a city, in which case the request should be submitted to or through that city. Cities or districts should determine their future supply problems and provided such information to their county emergency management organization. Assistance with water curtailment plans and water conservation practices can be obtained from the Water Resources Department.

RURAL FIRE PROTECTION DISTRICTS

Oregon has over 200 rural fire protection districts. These districts are responsible for providing fire protection for members of their districts. These same organizations, because of their regular responsibility, have equipment which, during a drought might be used for transporting of emergency water, normally on the condition that the equipment is not kept from its primary function (fire protection) for prolonged periods of time. This water transport capability can be made available to citizens of the district, or, in some cases, may be made available for meeting non-district emergency water needs. Request for this type of assistance will normally be made through the local Emergency Management Organization. The Rural Fire Protection Districts should also estimate the impact of a drought on its fire protection capability, caused by possible decreases in water available for fire suppression and provide this information to the local Emergency Management Organization.

VOLUNTEER RELIEF ORGANIZATION

About five volunteer relief organizations are active statewide in Oregon. There are also numerous local relief organizations as well as service clubs, which though not normally “relief” oriented, may be available to serve in relief efforts. These organizations can provide a wide range of assistance to individuals and families adversely affected by droughts including:

1. Personnel to distribute emergency drinking water supplies to the aged, handicapped, or others who may not be able to transport water from a distribution point.
2. Mass feeding of drought victims when drought conditions prohibit or restrict normal individual preparation of meals.
3. Personnel to serve at distribution points for emergency water supplies.
4. Shelter of drought victims caused by evacuation from drought-stricken areas.
5. Referral service through which individuals seeking or in need of drought assistance, such as emergency drinking water, will be referred to an appropriate governmental agency.

Such assistance will normally be requested through the local Emergency Management Organization or, at the state level, through the Oregon Emergency Management, working with

Voluntary Agencies Active in Disasters, a volunteer coordinating council. Point of contact would be the Oregon Trail Chapter.

COUNTY USDA EMERGENCY BOARDS

Most counties in Oregon have County USDA Emergency Boards (CEB's) which are responsible for the coordination of the programs at ASCS, Extension Service, Soil Conservation Services, and the Farmers Home Administration, and consist of representatives of those agencies. Representatives of local government are usually invited to attend meetings of the boards. The CEB's are responsible for developing the following reports and submitting them to the State Emergency Board.

1. Natural Disaster Damage Assessment Reports, which provides estimates of agricultural damages, including crop loss, livestock losses, damages to facilities and damages to agriculture.
2. Reports on drought conditions which threaten to develop into significant disaster situations, including estimates of anticipated agriculture impact.

County Emergency Boards are also responsible for maintaining liaison with county government by informing appropriate representatives of the CEB's activities. The CEB Chairman will also invite representatives of the county governing body or its Local Emergency Management staff, and other appropriate local officials to CEB meetings. Requests for county board services or reports may be made by the Governor or his authorized representative through the State USDA Emergency Board.

COUNTIES

In most cases, counties, through their Emergency Management Organizations, are the first line of organized emergency response. In a drought, the County can assist in providing emergency water supplies, usually for cities, water districts, or individual water users. The County Emergency Management Organization may also respond to a wide range of drought-related emergencies not involving emergency water supply. Activities which might be carried out by the County Emergency Management Organization include:

1. Receiving requests from cities, districts, and individual water users for assistance in obtaining, transporting, or distributing emergency water supplies.
2. Providing emergency water services, utilizing county equipment or resources.
3. Obtaining equipment, supplies, or services when not available from the County through the following sources:
 - a. Private individuals, commercial or industrial firms, or volunteer emergency organizations.

- b. The State, through the Oregon Emergency Management.
- c. The federal government, through the Oregon Emergency Management.

Counties, through their Emergency Management Organization, should assess the drought within the county. This assessment, particularly of the water supply situation, should be carried out through contact with water users, district representatives of state agencies, and county USDA Emergency Boards. Information concerning the future impact of the drought (Impact Analysis) upon water supplies and systems should be provided to the Oregon Emergency Management and Drought Council. Assistance in determining these future impacts can be obtained from the State Water Resources Department or the Corps of Engineers, through the Oregon Emergency Management. Drought Impact Analysis information should be updated as frequently as new information or changing situations require and the updated information should be provided to the Oregon Emergency Management and Drought Council to enable those agencies to better coordinate the application of available emergency resources to the emergency situations that may arise.

DROUGHT ASSISTANCE AVAILABLE FROM STATE AGENCIES

Many state agencies can supply assistance in a drought through normal agency programs. If major state agency involvement is anticipated, or if federal assistance might be needed, the Governor will declare a state "Emergency". Such a declaration provides state agencies with more emergency fiscal flexibility and sets the stage for various federal disaster declarations if needed. Requests for state assistance may be to the agency directly, or, in an "Emergency", through the Oregon Emergency Management. Specific examples of state assistance by agency are:

1. Oregon Emergency Management
 - a. Coordinate estimates of drought impact.
 - b. Receive requests from local governments and districts for emergency water assistance.
 - c. May provide direct assistance relative to emergency treatment, pipelines, and pumping of water.
 - d. Advise the Governor on the need for a Governor's declaration of a state/regional (drought) "Emergency".
 - e. Advise state and local agencies on the need for financial record keeping.
 - f. Advise the Governor, in conjunction with other state agencies, of the need for federal assistance or federal disaster declarations.
 - g. Draft, for the Governor, requests for Presidential "Emergency" or "Major Disaster" declarations.
 - h. Provide administrative and coordinative services related to a federal "Major Disaster" or "Emergency".

2. DEPARTMENT OF AGRICULTURE

May assist the Extension Service in providing estimates of the impact of the drought upon agriculture. Will work with OEM to obtain federal assistance if conditions severe enough.

3. EXTENSION SERVICE

- a. Through the USDA Emergency Board, prepare information on agricultural drought management practices and on agricultural and domestic water conservation practices. Such information will be supplied to drought victims through various sources, including the news media.

- b. May provide, through the USDA Emergency Board and in conjunction with the US Department of Agriculture, estimates of drought impact on agriculture within the state.
- c. Provide information on federal assistance available to agricultural drought victims.

4. DEPARTMENT OF ECONOMIC DEVELOPMENT

- a. May provide, in conjunction with Employment Division (DHR) estimates on the projected loss of jobs due to drought.
- b. Assist in providing information to business and industry on water conservation.
- c. In a Presidential “Emergency” or “Major Disaster”, or an Agricultural Disaster, provide information to business and industry on federal loan programs which may become available.

5. ENERGY DEPARTMENT AND PUBLIC UTILITY COMMISSION

- a. May provide estimates of the impact of the drought upon electric power generation capability and expected power supplies.
- b. Advise the Governor on appropriate allocation of electric power which might need to be curtailed due to the lack of hydroelectric generating capability.

6. DEPARTMENT OF ENVIRONMENTAL QUALITY

- a. May provide estimates of the impact of the drought upon water quality.
- b. Make appropriate recommendations concerning instream flows.
- c. Monitor, and, as needed, restrict the addition of pollutants into streams, lakes and estuaries.

7. DEPARTMENT OF FISH AND WILDLIFE

- a. May provide estimates of the impact of the drought upon fish and wildlife resources.
- b. Make recommendations for instream flows for fish protection.

- c. Adjust fishing and hunting regulations as needed to compensate for the drought situation.
- d. Develop procedures for providing feed and water for wildlife.

8. DEPARTMENT OF FORESTRY

- a. Provide estimates of the impact of the drought on state forest lands; such estimates may take into account the effect of the drought upon fire hazard and suppression.
- b. Provides emergency weather forecasts to OEM/SWMG as necessary.
- c. Develop plans to limit forest land access during drought conditions.

9. DEPARTMENT OF GENERAL SERVICES

- a. Authorizes agencies to make purchase in an emergency without competitive bidding.
- b. May purchase emergency supplies or equipment on behalf of state agencies.

10. HEALTH DIVISION (DHR)

- a. Inspect municipal water supplies and emergency water sources and facilities and certify or make appropriate recommendations concerning the safety of supplies for human consumption.
- b. May provide advice on the sterilization of emergency water containers and transport equipment.
- c. May provide, in conjunction with the Water Resources Department, estimates of the impact of the drought on domestic or municipal water supplies.
- d. Maintain list of vehicles for water transport and temporary storage facilities.

11. MILITARY DEPARTMENT

Through the National Guard, may provide emergency water treatment and transport the treated water to augment or replace lost or depleted water supplies.

12. WATER RESOURCES DEPARTMENT

- a. Will enforce the appropriate water use system, ensuring that water users having prior water rights are given preference over those having junior water rights. In so doing, an attempt is made to adjudicate disputes between water users and to ensure the conservation and greatest possible benefit from the existing water supplies.
- b. Will protect the interest of the State relative to instream flows for fish protection or water quality. This protection may require curtailment of water users having junior water rights to the date of establishment of the instream flows. The Department may, in the public interest, reduce or waive these instream requirements.
- c. Will provide, in conjunction with US Geological Survey, the U.S. Soil Conservation Service, National Weather Service, River Forecast Center, State Climatologist, and applicable state and local agencies information on the drought, its expected severity and its impact on water users and may assist individual water users in analyzing their future water supply situation and identifying alternate water sources.
- d. Will monitor ground water conditions during the drought period and estimate the effects of the drought on ground water and related water users.
- e. Will expedite the issuance of water rights requested for emergency water supply purposes, providing that the emergency nature of the request is specified.
- f. Will assist in water curtailment and conservation planning.
- g. Will coordinate dissemination of public information.

13. OTHER STATE DROUGHT ASSISTANCE

- a. Tank trucks or trailers, or other vehicles capable of transporting or storing emergency water may be provided by:
 - 1) Department of Fish and Wildlife
 - 2) Department of Forestry (non-potable)
 - 3) Military Department
 - 4) Department of Transportation
- b. Information on the above-mentioned equipment available through private industry may be provided by:

- 1) Department of Agriculture (milk tank trucks)
 - 2) Public Utility Commission (other tank trucks)
- c. Information on railroad tank cars, usable to emergency water, and available through private industry may be provided by: The Public Utility Commission.
- d. Information on other equipment or services relating to emergency water, and available through private industry may be provided by:
- 1) Oregon Emergency Management (emergency equipment)
 - 2) Department of General Services (equipment and supplies)
 - 3) Water Resources Department (well drilling, pipes, pumps)
- e. Assistance in the development, preparation, and presentation of public education, and public relations programs for power and water conservation may be provided by:
- 1) Governor's Office
 - 2) Department of Agriculture
 - 3) Department of Economic Development
 - 4) Oregon Educational Public Broadcast System
 - 5) Department of Energy
 - 6) Extension Service (Higher Education)
 - 7) Department of General Services (Printing Division)
 - 8) American Water Works Association
 - 9) League of Oregon Cities
 - 10) Water Resources Department
 - 11) Oregon Association of Water Utilities

THE STATE DROUGHT COUNCIL

On March 9, 1988, the SWMG replaced the Subcommittee on Drought Planning with the State Drought Council. Drought planning and preparedness will be coordinated through the Drought Council under the leadership of the Strategic Water Management Group (SWMG) and consisting of members of state agencies which might be involved in drought forecasting, assessment, response, or recovery. The goal of the Council is to:

Strive to reduce or mitigate the effects of the impending drought through a coordinated federal/state/local and voluntary effort; consisting of development of pre-drought plans, policies, and procedures, and through coordinated state response.

In meeting this goal, the Council will:

1. Monitor the meteorologic and hydrologic conditions to determine the current and estimate future severity of the drought.
2. Estimate the impact of the drought, based on its estimated future severity, on:
 - a. electric power consumption and generation
 - b. agriculture
 - c. human consumption of water
 - d. industry
 - e. fish and wildlife
 - f. state forestry issues
 - g. other areas as appropriate
3. When drought conditions exist, submit weekly reports and estimated impacts to the SWMG, who will then report to the Governor.
4. Develop an inventory of the physical, economic, or other resources available for responding to the expected drought impacts.
5. Determine where conflicts arise between water users and electric power users, and initiate actions to minimize such conflicts through laws, policies, or other means.
6. Develop or review water and power conservation programs, and develop public information programs to encourage voluntary conservation measures.
7. Coordinate the drought response and recovery effort during the drought period.
8. Assist the Governor and Oregon Emergency Management in determining the need for various federal disaster declarations and other federal assistance.

9. Use existing line of communications to ensure all parties involved are aware of the current status.
10. The Drought Council will be a subcommittee of the SWMG and will consist of:

Oregon Emergency Management (Exec. Dept.) (Chairperson)

The Department of Agriculture
The Department of Economic Development
The Department of Energy
The Department of Environmental Quality
The Extension Service (Higher Education)
The Department of Fish and Wildlife
The Department of Forestry
The Health Division (Human Resources Dept.)
The Military Department
The Public Utility Commission
The Water Resources Department
State Climatologist
League of Oregon Cities
American Water Works Association
Oregon Association of Water Utilities
Farmers Home Administration
United State Department of Agriculture
Bureau of Land Management
U.S. Army Corps of Engineers
Bonneville Power
United States Forest Service
Soil Conservation Service
National Weather Service
Northwest River Forecast Center
U.S. Geological Survey

STATE USDA EMERGENCY BOARDS

USDA has established, in Oregon, a State USDA Emergency Board to coordinate the disaster activities and programs of the various USDA agencies. These agencies include the Agricultural Stabilization and Conservation Service, Animal and Plant Health Inspection Service, Cooperative Extension Service, Farmers Home Administration, Forest Service, Soil Conservation Service, and the Statistical Reporting Service. Each of these agencies has a representative on the Board. The Emergency Board is also responsible for the following:

1. Requesting Natural Disaster Assessment Reports (See Page 9 Appendix 1) from the County Emergency Boards, followed by the editing and distribution of these reports.

2. Reporting, based on County Emergency Board drought condition reports (See Page 9 Appendix 1), on the drought condition and anticipated agricultural impact.

The State USDA Emergency Board is also responsible for maintaining liaison with State government by informing the Governor, Oregon Emergency Management, the Department of Agriculture, the Drought Council, and others, as appropriate, of the State Emergency Board's activities and reports. The State Emergency Board Chairman will invite representatives of the State Department of Agriculture, Oregon Emergency Management, Governor's Office, and any other appropriate State officials, to the Emergency Board meetings. The services of the State Board may be requested by the Governor or his authorized representative.

PRESIDENTIAL DECLARATIONS

1. PRESIDENTIAL "EMERGENCY" DECLARATION - available at the request of the Governor, through the Federal Emergency Management Agency when specific federal assistance is needed to alleviate the drought-caused problems. This "Emergency" declaration does not automatically trigger or include SBA or USDA disaster declarations or programs, although those programs could be provided separately if requested.
2. PRESIDENTIAL "MAJOR DISASTER" DECLARATION - available at the request of the Governor, through the Federal Emergency Management Agency, when accompanied by a statement of the drought damages and problems and a statement indicating state and local action taken and monies expended by state and local governments, provided such actions or expenditures represent a "reasonable" commitment by state and local government.

SCHEDULE OF OREGON DROUGHT MONITORING AND MITIGATION ACTIVITIES

Oregon Emergency Management
Executive Department
May 1988

SCHEDULE OF OREGON DROUGHT MONITORING AND MITIGATION ACTIVITIES

For the purpose of definition, the levels of drought severity shall be normal conditions, mild, moderate, severe, and extreme. This shall be known as the “Oregon Drought Severity Index” and these levels shall be established by the procedure set forth in Exhibit A. The Water Resources Department shall coordinate the procedure used in establishing the severity index and shall provide notifications as appropriate. Levels of severity shall be established for each climate region as defined in Exhibit A. The Drought Council shall recommend action as is appropriate for each individual region.

The following is a summary of recommended activities to be followed through the establishment levels of drought severity:

NORMAL CONDITIONS

No activity.

MILD DROUGHT

1. The Water Resources Department shall convene a Water Availability Committee (WAC) to monitor severity level and weather forecasts. Reports shall be submitted to the chairperson of the Drought Council. This committee shall include the following:

Oregon Water Resources Department
Oregon Department of Forestry
State Climatologist
Soil Conservation Service Snow Survey Section
National Weather Service
River Forecast Center
USGS

2. The Water Resources Department shall take appropriate reservoir release coordination action. This will include notification and forecast coordination with appropriate state agencies, and recommendations to reservoir managers such as the Army Corps of Engineers.
3. The Drought Council shall communicate drought severity index levels and forecasts to local jurisdictions, the State Emergency Board, and other appropriate agencies. The State Emergency Board shall communicate local drought related problems and impacts to the Drought Council.

MODERATE DROUGHT

1. The WAC shall continue to monitor drought severity levels and forecast weather conditions. Regular reports and recommendations shall be submitted to the Drought Council.
2. Water Resources Department shall convene appropriate agencies for reservoir regulation drought mitigation planning.
3. The Drought Council shall consider meeting monthly to discuss and coordinate drought mitigation activities. All state agencies shall report their drought mitigation activities and plans to the Drought Council. The Chairperson of the Drought Council shall report activities to the Strategic Water Management Group (SWMG).
4. The State Emergency Board shall begin making regular reports on drought developments to the Drought Council. The Drought Council shall continue to communicate state severity levels and forecasts to the State Emergency Board and other appropriate agencies.
5. The Drought Council shall notify local jurisdictions of drought severity levels and forecasts. Local drought plans shall be implemented as appropriate.
6. The Water Resources Department shall publish a water conditions report monthly.

SEVERE DROUGHT

1. The WAC shall continue to monitor drought severity levels and forecast weather conditions. Regular reports and recommendations shall be submitted to the Drought Council.
2. Water Resources Department shall publish a water conditions report monthly.
3. The Drought Council shall meet on a regular basis. Regular reports and recommendations, along with the WAC report, shall be submitted to the SWMG.
4. State Emergency Board shall continue to communicate local impacts and problems to the Drought Council. The Drought Council shall continue to communicate state severity levels and forecasts to the State Emergency Board and other appropriate agencies.
5. SWMG shall consider making recommendations to the Governor that would mitigate drought conditions. These would include:

- General fund reallocation
- Request for federal assistance
- Extraordinary powers allowed under state of emergency

6. Drought Council shall notify local jurisdictions of drought severity levels and forecasts. Local drought plans shall be implemented as appropriate.
7. The Water Resources Department shall publish a water conditions report monthly.

EXTREME DROUGHT

1. The WAC shall continue to monitor drought severity levels and forecast weather conditions. Regular reports and recommendations shall be submitted to the Drought Council.
2. Water Resources Department shall convene appropriate agencies for reservoir regulation drought mitigation planning.
3. Drought Council continues to meet on a regular basis. Regular reports and recommendations, along with the WAC reports, shall be submitted to the SWMG.
4. State Emergency Board shall continue to communicate local impacts and problems to the Drought Council. The Drought Council shall continue to communicate state severity levels and forecasts to the State Emergency Board and other appropriate agencies.
5. SWMG shall make recommendations to the Governor that would mitigate drought conditions. These would include:
 - General fund reallocation
 - Request for federal assistance
 - Extraordinary powers allowed under state of emergency
6. Drought council shall notify local jurisdictions of drought severity levels and forecasts. Local drought plans shall be implemented as appropriate.
7. The Water Resources Department shall publish a water conditions report at least monthly.

EXHIBIT A

DROUGHT SEVERITY INDEX

The Oregon Drought Severity Index level shall be established by the Drought Council. The computation procedure will involve the determination of the Oregon Surface Water Supply Index (SWSI). A procedure for establishing the SWSI is being developed by the Soil Conservation Service. Until that procedure is finalized, a Provisional Severity Index will be established using a modification of the Palmer Index. The modification will depend on the calculated percent of deviation from “normal” for the following parameters: Monthly precipitation, reservoir storage, snow accumulation, and stream flow. Locations for representative samples of those parameters will be chosen and data will be tabulated by the Drought Council.

APPENDIX 3

FEDERAL DROUGHT ASSISTANCE PROGRAMS

Oregon Emergency Management
Executive Department
May 1988

FEDERAL DROUGHT ASSISTANCE AUTHORITIES

BACKGROUND

During the time period of June 17, 1976, through September 6, 1977, the President declared that emergency situations existed, as a result of drought conditions, on thirty-three occasions. Such emergency declarations authorized disaster assistance under Public Law 93-288, the Disaster Relief Act of 1974, be provided to alleviate conditions caused by the drought. Such assistance included implementation of the Hay Transportation Assistance Program, the Livestock Transportation Assistance Program, and the Emergency Livestock Feed Program. Approximately \$103,395,854 was provided from the President's fund for these programs. However, there were widespread allegations of fraud and abuse and the programs were discontinued.

The Federal Emergency Management Agency (FEMA) was effectively taken out of the drought assistance in 1977, when Congress passed legislation that enabled the U.S. Department of Agriculture to acquire more program response capabilities to assist farmers affected by droughts. One such program was the Emergency Feed Program, authorized by the Act of 1977, and implemented at the discretion of the Secretary of Agriculture. This program provides for necessary feed, including hay, on a cost-sharing basis, after stringent criteria have been met.

ADDITIONAL FEDERAL DROUGHT ASSISTANCE

While primary responsibility in water shortage situations rests with state and local authorities, some additional federal assistance, primarily of an advisory nature, may be available to supplement their efforts.

AGRICULTURE, DEPARTMENT OF (USDA)

USDA has a publication titled "Natural Disaster Assistance Available from the USDA" (program aid #1328) which explains the procedures necessary to apply for assistance from them.

(OMB Cat. 10.054, .0-62, 10.063, 10.068, 10.404, 10.414, 10.416, 10.418, 10.419, 10.423, 10.900, 10.901, 10.901, 10.902, 10.906, 10.907, and 10.908)

Soil Conservation Service (SCS)

SCS provides technical assistance through local conservation districts to farmers, ranchers, and local governments under various authorities. In drought-stricken areas, technical assistance emphasis is shifted to drought-related activities.

Farmers and ranchers in drought-stricken counties should contact local SCS or conservation offices to find out the specific technical and financial assistance available to them under SCS programs.

The Resources Inventory Division of the National Headquarters of SCS compiles reports of short-duration natural phenomena, including droughts.

Programs and legislative authorities authorizing these programs are described in the following paragraphs:

Inventory and Monitoring

Authority: PL 74-76; PL 92-419, Title II, Section 302; PL 95-192.

Inventory and monitoring objectives are to provide for the field collection, interpretation, and publication of natural and related resource data. These data and interpretations serve many agency and department needs as well as those of individuals, groups, and units of government. They permit users to examine the relations and interactions of natural and related resources to determine how they are used and how they are managed, to define resource problems, and to identify resource potentials.

Resources Appraisals and Program Development

(Resources Conservation Act) (RCA) Authority: PL 95-152, Soil and Water Resources Conservation Act of 1977.

The objective of RCA is to ensure that USDA Soil and Water Conservation programs administered by the Secretary of Agriculture and responsive to the long-term needs of the nation, and will further conserve, protect, and enhance the nation's soil, water, and related resources.

Snow Survey and Water Supply Forecasting Authority: PL 74-76, Soil Conservation and Domestic Allotment Act.

The program objectives are to provide information on forthcoming seasonal water supplies from streams that derive most of their runoff from snow melt; help farm operators, rural communities, and municipalities use water-supply forecasts in managing water resources; and provide hydrometeorological data for regulating reservoir storage and managing streamflow.

Great Plains Conservation Program Authority: PL 74-76, Soil Conservation and Domestic Allotment Act, as amended by the Great Plains Act of August 7, 1956; PL 84-1021 and other amendments.

The Great Plains Conservation Program Objective is to conserve and develop the soil and water of the Great Plains area by providing technical and financial assistance to farmers, ranchers, and others in planning and implementing conservation practices.

Soil and Water Conservation Authority: PL 74-76, 89-560, and Appropriations Act prior to 1935.

The Soil Survey program objective is to provide published soil interpretations for widespread use by interested agencies, organizations, and individuals.

Watershed Protection and Flood Prevention (Small Watershed/PL 566 Program Authority: PL 83-566, Watershed Protection and Flood Prevention, amended.

The objective of the PL 566 program is to provide technical and financial assistance to local organizations for planning and carrying out watershed projects. Project purposes include watershed protection, flood prevention, agricultural water management, recreation, municipal and industrial water supply, and fish and wildlife development to properly utilize water and related land resources in small watersheds.

River Basin Surveys and Investigations (River Basin Program) Authority: Section 6, PL 83-566, as amended.

The objective of the river basin program is to assist state and local agencies in collecting decision-making information and developing a plan of action regarding water and related land resources for economic development and environmental quality.

FARMERS HOME ADMINISTRATION (FmHA)

Authorities: Consolidated Farm and Rural Development Act of 1972, as amended, and Title II of the Agricultural Credit Act of 1978, as amended.

FmHA has several programs which can alleviate drought and water shortage conditions in rural areas. The Agency's Emergency, Soil and Water, Farm Ownership, Watershed, and Operating loan programs permit loan funds to be used to enable farmers to establish wells. These programs can also be used to help farmers overcome financial difficulties.

FmHA can make emergency (EM) loans in counties (parishes) where physical property damages and/or severe production losses occur as a result of a natural disaster that substantially affects farming, ranching, or aquaculture operations. There are three ways by which EM loans are made available.

1. Under a major disaster or emergency declaration by the President. Em loans will be made available to applicants having qualifying severe physical and/or production losses within a county named by FEMA as eligible for federal assistance (i.e., Individual and/or Public Assistance);
2. Under a natural disaster designation by the Secretary of Agriculture, EM loans will be made available to applicants having qualifying severe physical and/or production losses within a county named by the Secretary.
3. Under a natural disaster designation by the FmHA Administrator, EM loans will be made available to applicants having qualifying severe physical losses only prior to

action by the President or the Secretary. Details of all ASCS programs can be obtained from any county ASCS office.

The Agency's Water and Sewer; Irrigation, Drainage and Soil Conservation; business and industry; and Community Facility loan programs may permit groups, including governmental bodies under some of these programs, to obtain loans for purposes which could contribute to alleviating water shortages in rural areas.

The Agency provides financial guidance to applicants. Technical advice is limited to accessing the feasibility and technical compliance requirements associated with a proposed loan. The Agency provides no technical guidance to the general public or governmental bodies, and does not have sufficient resources to provide significant help in the area.

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE (ASCS)

ASCS provides assistance to farmers and ranchers for drought related disasters by two types of programs: those that address loss of livestock feed production and those that address the prevention or rehabilitation of damages to farmland caused by drought.

The Emergency Feed Program provides for farmers to purchase the necessary feed (including hay) on a cost-share basis.

The Emergency Feed Assistance Programs (EFAP) makes lower grade CCC-owned feed grains and wheat available for sale at reduced prices to eligible livestock producers in counties designated by the Secretary as disaster areas due to drought. This program is administered under Section 407 of the Agricultural Act of 1949.

Cropland acreages are reduced under production adjustment programs and placed in an acreage conservation reserve (ACR) for an entire growing season. Haying and grazing of eligible cover crops is permitted in drought emergencies. Authority to implement haying and grazing of ACR designated under the Agriculture and Food Act of 1981 is vested in the Deputy Administrator, State and County Operations, but may be delegated to State Committees of ASCS.

The Emergency Conservation Program may provide cost-sharing funds during a drought emergency to develop water supplies for grazing livestock, and may also assist in preventing wind-erosion damage to farmland caused by drought. The Agricultural Conservation Program (ACP) allows cost-sharing with agricultural producers for a wide range of measures that conserve and protect water resources as well as provide soil conservation and environmental protection benefits. Authority to approve cost-share assistance rests with the County Committees of ASCS.

Details of all ASCS programs can be obtained from any county ASCS office.

AMERICAN RED CROSS (ARC) Authority: American Red Cross Charter: U.S. Congress, Act of January 5, 1905, as amended, 36 U.S.C.

The disaster services of the Red Cross during a drought or water shortage will be in support of, and in cooperation with, general community-based response efforts initiated to reduce suffering or meet basic human needs. Depending on a community's need, Red Cross activities may include:

Providing technical consultation and guidance to local and state government agencies or officials when planning for the distribution of water from central sites to community residents.

Establishing and staff first-aid stations at community sites designated for the distribution of water to residents.

Coordinating voluntary agency activities designed to support local community response efforts.

Providing voluntary personnel to assist local government response actions.

If drought conditions should lead to the lack of hydrant pressure or sufficient water for fighting residential fires in a community, the Red Cross will provide its normal mass care services and individual assistance to the fire victims.

Red Cross does not provide assistance to commercial, industrial, or agricultural corporations with drought or water-shortage caused losses.

DEPARTMENT OF COMMERCE (DOC)
National Weather Service

The National Weather Service (NWS) provides information on current weather and river conditions, forecasts, and outlooks.

When seasonal precipitation accumulations drop below 70 percent, biweekly statements will be issued by the National Weather Service Forecast Office in Portland, documenting the meteorological and hydrological conditions in the State of Oregon.

When seasonal precipitation accumulations drop below 60 percent, weekly meteorological and hydrological conditions for the State of Oregon will be summarized. This statement will include Northwest River Forecast Center hydrologic forecasts and extended outlooks as available.

Agricultural Stabilization and Conservation Service (ASCS)

ASCS provides assistance to farmers and ranchers for drought-related disasters by two types of programs: those that address loss of livestock feed production and those that address the prevention or rehabilitation of damages to farmland caused by drought.

The Emergency Feed Program provides for farmers to purchase the necessary feed (including hay) on a cost-share basis.

The Emergency Feed Assistance Programs (EFAP) makes lower-grade CCC-owned feed grains and wheat available for sale at reduced prices to eligible livestock producers in counties designated by the Secretary as disaster areas due to drought. This program is administered under Section 407 of the Agricultural Act of 1949.

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The Emergency Conservation Program may provide cost-sharing funds during a drought emergency to develop water supplies for grazing livestock, and may also assist in preventing wind-erosion damage to farmland caused by drought. The Agricultural Conservation Program (ACP) allows cost-sharing with agricultural producers for a wide range of measures that conserve and protect water resources as well as provide soil conservation and environmental protection benefits. Authority to approve cost-share assistance rests with the County Committees of ASCS.

DEFENSE, DEPARTMENT OF (DOD)
(OMB Cat. 12.106 and 12.110)

After all local, non-federal, and federal programs and assistance have been exhausted, the Secretary of the Army, acting through the Chief of Engineers, has the authority to transport water or drill wells for farmers, ranchers, and political subdivisions in areas determined to be drought-distressed. The water is provided for human and livestock consumption only. The transportation of water is a temporary activity that will be taken over by recipients as soon as practicable. Federally-owned equipment and laborers will be used to provide assistance. In addition, the Corps of Engineers has developed policy and guidance for the preparation of drought contingency plans as an integral part of the overall water control management system for Corps-operated and maintained projects.

Technical expertise and guidance on specific water and related land-resource problems may be available from the nearest District Engineers.

HEALTH AND HUMAN SERVICE, DEPARTMENT OF (HHS)
(OMB Cat. 13.808)

Public Health Service personnel from the Food and Drug Administration, the Center for Disease Control, and the Health Resources and Services Administration are prepared to assist state health officials and other federal officials with health-related problems. The officials are located in the HHS Regional Offices or in the states, and can provide advice, guidance, and technical engineering assistance related to the assessment of actual or potential health problems and provisions of appropriate medical care.

Social Security Administration district offices are also located throughout the states and officials work closely with state agencies in providing whatever financial assistance and other human services may be available under existing programs.

The Older American Act authorizes the Secretary to pay for part or all of the costs of developing model projects which show promise of relieving older individuals of the excessive burdens of high utility service and home heating costs. Special consideration is given to projects under which a business concern engages in providing utility services to low-income, older individuals at a cost which is substantially lower than providing utility service to other individuals.

INTERIOR, DEPARTMENT OF THE (DOI)
Geological Survey
(OMB Cat. 15.804)

The Geological survey's Water Resources Division has the principal responsibility within the federal government for providing hydrologic information and appraising the nation's water resources. The legislative authority for this mission is an outreach of the act of March 3, 1879 (43 U.S.C. 31), establishing the Geological Survey has neither regulatory nor developmental authority.

A major part of the work of the Survey's Water Resources Division is accomplished through cooperation with state and local agencies, the "Federal-State Cooperative Program" (OMB Cat. 15.804). These water-resources investigations by the Geological Survey are jointly funded, at least 50 percent of the financial support coming to the survey from the cooperating state and local agency. The objectives are to provide water information for economic development and best use of water resources, and to carry on research in hydrology. The technical information produced in the above investigations provides the physical basis for effective planning of programs for development and management of water resources, and efficient operation of interrelated projects at federal, state, and local levels.

SMALL BUSINESS ADMINISTRATION (SBA)
(OMB Cat. 59.002 and 59.008)

Disaster loans to homeowners and businesses to restore or replace their real and/or personal property damaged or destroyed in a physical disaster, when declared by the President, the Administrator of SBA, or in certain limited circumstances, by the Secretary of Agriculture.

In the event of a declaration by the President, SBA assistance would be limited to providing funds for the drilling of replacement wells (or the redrilling of existing wells) in non-agriculture situations. This would include assistance to private, not public, water companies, provided that eligibility criteria are met. By statute, SBA can no longer provide disaster assistance to agricultural enterprises.

Under SBA's Economic Injury Disaster Loan authority, assistance could be rendered to small businesses without credit elsewhere available to cover additional expenses incurred as a result of

the adverse effect on farmers/ranchers in the area, provided the applicant business can make a showing of substantial economic injury as a result of the disaster declared by the President or the Secretary of Agriculture.

The SBA does not have the means to provide any technical assistance to the states to assist them in coping with this situation.

SBA does not provide financial assistance to restore or replace municipal or other public water facilities.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

While the Disaster Relief Act of 1974 provides the President with the latitude to provide assistance in those circumstances that are warranted, implementation of PL 93-288 at this time is not envisioned. Congress has expanded the programs of other federal agencies, primarily those of USDA, that the President need not enact the provisions of PL 93-288.

APPENDIX 4

GUIDELINES FOR
WATER CURTAILMENT PLANNING
AND PROGRAM DEVELOPMENT

WATER UTILITIES

OREGON WATER RESOURCES DEPARTMENT
April 1988

WATER CURTAILMENT PLANNING AND PROGRAM DEVELOPMENT

- I. General Discussion
- II. Where to Begin
 - a. Data Requirements
 - b. Public Involvement
- III. Water Curtailment Planning Procedure
 - a. Step 1 - Identify System Constraints
 - b. Step 2 - Locate and Assess Alternate Sources
 - c. Step 3 - Assess System Management and Rank Severity of Impacts
 - d. Step 4 - Design Water Curtailment Plan
 - e. Step 5 - Evaluate Procedures and Regulations and Implement Plan
- IV. Assistance

Appendix: Sample Review Checklist

WATER CURTAILMENT PLAN DEVELOPMENT PROCEDURES

I. General Discussion

The development of a good plan requires that a utility consider all aspects of water curtailment carefully. The purpose of the step-by-step procedure presented in these guidelines is to provide a utility with a consistent method that can be used to develop a plan containing all needed elements. The utility should review and consider the contents of each step of the procedure to determine the items that are applicable to its unique situation.

II. Where to Begin

- A. **Date Requirements:** Before beginning the five-step procedure (See III A to E, Page 5) for water curtailment planning, it will be necessary to gather certain information about utility and community service characteristics. Much of this information should be available from the files and records of the utility, but some information may need to be updated. To start the planning process, the following data should be available.

Population and Water Use

1. Population (current estimate):
 - a. Service area of the utility
 - b. Area served by utility but not in city limits or political subdivision
2. Current number and type of connections in the service area.
3. Average rate of new connection additions during the last five years (total number of new connections added during the last five years divided by five);
4. Water-Use Data
 - a. Average annual water production for the last two years and average monthly data for the last two years (in gallons).
 - b. Estimated total monthly and annual water sales in the following user categories (in gallons):
 1. Residential and commercial
 2. Industrial or manufacturing

3. Public and institutional, i.e., schools, public parks, an other public institutions
 4. Sales to other political subdivision
 5. Unaccounted for water use
 6. Other (specify)
- c. Peak daily and pak hourly total use (in gallons) experienced during each of the past few years
 - d. Peak daily to average daily use ratio for each of the six categories listed in 4(b) (peak daily use divided by annual average daily use).

Supply and System Capacity

1. System yield (the amount of water which can be annually withdrawn without depleting the source, exceeding system capacity, or exceeding existing permits or contracts) and total amount of elevated and non-elevated (ground level) storage in gallons.
2. Peak daily capacity of water supply (in gallons).
3. Major high-volume water customers and their annual water use during the last year (in gallons per year).
4. Population and water use volume projections for service area and source of information.
5. Potable water distribution constraints (i.e. distribution lines, pump stations, water towers, etc.).

Financial Information (for use in designing rate structures and calculating conservation benefits)

1. Metering and Billing:
 - a. What percent of system is metered, by user category:
 1. Residential and commercial
 2. Industrial or manufacturing
 3. Public and institutional

4. Other (specify).
- b. Water rate schedule by user category listed in 1. (a) above; and
 - c. Annual revenues by user category.
2. Amount of annual revenue received by the utility from the following sources during the last calendar year:
 - a. Water utility bill
 - b. Subsidies (including use of general tax revenue, etc.)
 - c. Rental income
 - d. Special capacity fees or water availability charges
 - e. Hook-up fees or vital recovery charges
 - f. Other (specify).
3. Total annual costs to run the utility:
 - a. Fixed costs (bond payments, etc.)
 - b. Variable costs (energy, chemicals, repairs, and some labor costs).
4. Community use of water utility revenues for other community purposes and programs.

General Information

1. Copies of applicable local public health, fire department, and other agency regulations pertaining to water supply.
2. Copies of applicable state and federal regulations pertaining to public health, fire, and water quality which place constraints on average or peak system use.
3. Special situations or unique information that may be helpful.

The preceding characteristics of each utility type are important because they determine the relationship between revenues and costs and the groups to which the utility is accountable, and they provide a basis for evaluating the available conservation options.

- B. **Public Involvement:** In addition to basic descriptive data, a list should be developed of the interested groups and individuals in the community that need to be involved in the assessment of water conservation plans and measures. Because experience has shown that the success of a water conservation program is highly dependent on involving local interests, at-large public involvement should begin as early in the planning process as possible. Local involvement is particularly important in a voluntary program where only cooperation from water users is being requested to achieve the conservation goal.

Detailed guidelines are not available on who should be involved or by what means they should become involved in developing the community program. Much of the choice depends on whether service is predominately rural or urban and whether the utility is small or large, a water district, a utility district, or a water supply corporation. However, in most cases, some combination of the following groups, in conjunction with the utility's list of regular contracts, could be used to establish an advisory group.

1. Elected officials from all the jurisdictions directly affected by the process (cities, counties, districts, etc.).
2. Staff employees from the utility and key local, state, and federal government representatives when necessary.
3. Representatives from major local economic interest groups, such as major industries, the chamber of commerce, the builders association, the board of realtors, and financial institutions.
4. Representatives from major community forces, such as civic associations, neighborhood associations, school boards, local press, and environmental groups.
5. Local professionals with creditability such as engineers, geologists, agricultural specialists, architects, etc.

III. Water Curtailment Plan Procedures

Water shortages adversely affect everyone. The entire community, from homeowners to the utility, suffers from curtailed water uses and revenues. The key ingredients to coping with an emergency are advanced planning and community cooperation. Without this any curtailment plan will be only partially effective. Five steps leading to the preparation of an operative water curtailment program include:

1. Identifying system constraints.
2. Locating and assessing alternative sources.
3. Assessing system management and ranking severity of impacts.

4. Designing a water curtailment plan.
5. Evaluating procedures and regulations and implementing the plan.

Each of the five steps is divided into three parts, objective, procedure, and discussion.

A. Step 1. Identify System Constraints

Objective: To determine the constraints on a water supply system to establish trigger conditions.

Procedure: Water supply systems can have a number of limits or constraints that restrict their ability to provide water at certain times and under certain circumstances. Problems can arise if either the supply becomes inadequate because of drought or disaster or if demand increases to a level which is higher than the system can serve. In this discussion, supply considerations are limited to actual source-related problems (i.e. well yield, reservoir yield, or river flow). The most common cause of source-related problems in Oregon is drought. Oregon has experienced a number of minor and several severe droughts that have caused disruptions in local water systems. System-related problems can be caused by a variety of factors, such as inadequate treatment, storage, distribution capacity, or the failure of some part of the system due to natural or human causes. System failures can be extended to sources if a well fails, a dam bursts, or if contamination occurs.

Source-Related Problems

All water supplies are limited. The first consideration in drought contingency planning is to determine if the yield of the water supply is sufficient to meet the maximum demand that may develop. Supplies considered here are limited to ground water or surface water supplies. Because every utility situation is unique, each source-related evaluation will, to a certain extent, be unique. When analyzing ground water sources, the following factors should generally be considered:

1. The yield of the aquifer.
2. The pumping level at which the system's well(s) (a) begin pumping air, (b) begin producing poor quality water; or (c) lower the water level in the aquifer to the point that problems, such as cessation of important spring flow, begin.
3. The capacity of the wells to produce the desired amount of water considering decreased artesian pressure, lowered water levels, and permeability of the formation.

When analyzing surface water sources such as reservoirs or rivers, the following items should be considered:

1. The statistical probability of exceeding the firm yield of the reservoir and the drought of record, which is usually the basis for calculating the yield.
2. The likelihood that reservoir levels, which represent the amount of water the city would normally use until the next rainy season, will fall below an elevation level at which the diversion can properly operate.
3. Recreation, economic, or environmental benefits would be affected by extensive draw down of the reservoir.
4. Water rights.

Many utilities divert their water directly from a river or stream. Although many diversions rely of water released from an upstream reservoir, some must depend solely on the flow of the stream. Some of the factors that should be considered for such sources include:

1. The flow of the river during drought periods if the flow does not depend on a reservoir for supply.
2. River levels below which pumping or other diversion equipment will not operate properly.
3. Water rights of downstream users.
4. Environmental impacts of diminished stream flow.
5. Decreased recreation or aesthetic factors.
6. Water quality problems during low-flow events.

A potential problem common to all sources is the accidental or intentional contamination of a source, thereby making it unusable. Another problem would be the catastrophic failure of a supply, such as a dam failure or a natural event such as a flood that inundated pumps and other facilities. Although some of these problems may appear to be more related to system problems, they still limit or deny the availability of supply to the utility. In addition, utilities that purchase water from other entities should examine the potential emergency constraints on that source.

System-Related Problems

The term “system” as used here refers to the mechanical or non-source related portions of a water system. This includes wells ad diversion facilities, supply pipes and canals, treatment plants, storage facilities, and distribution facilities. Although each of these could be discussed separately, the types of limits experienced are usually the result of design limits or equipment condition. These limits hinder the system’s ability to meet either peak or higher than normal demands, such as those often experienced during a drought. Therefore, important considerations include:

1. Expected peak demand during a drought or other conditions that would place higher than normal demands on the system.
2. The limits of each part or component of the system.
3. The effects on the health and safety of customers if some individual component of the system, such as a critical pump failed or was removed from service.
4. The ability to keep elevated and non-elevated (ground level) storage reservoirs filled to safe capacities during high use periods.

Discussions: The objective of this step is to determine and locate the limits and constraints on the utility's water supply system so that the most adverse possible consequences of a drought or emergency can be anticipated in advance.

B. Step 2 - Locate and Assess Alternative Sources

Objective: To identify temporary sources that may supplement or substitute for an inadequate water supply or assist a water system in delivering water to customers.

Procedure: Potential supplemental sources include:

1. Surface supplies not normally used for municipal use (recreation ponds, golf course ponds, etc.).
2. Reservoir water not now available (i.e. sediment or power pool storage or the use of pumps on rafts).
3. New wells, deeper wells, or users drilling their own wells.
4. Reactivating abandoned wells.
5. Emergency interconnections with other system.
6. Negotiating and building new interconnections.
7. Water from another community's interconnection if it is not being used.
8. Water diverted from other uses, such as power generation, recreation, downstream water users, and recharge.
9. Relaxation of requirements for flow release at dams.
10. Building emergency dams.

11. Reactivating abandoned dams.
12. Using treated wastewater for golf course watering or other acceptable uses to replace freshwater use.
13. Trucking in water.

When evaluating these alternatives, the utility should consider the following factors:

1. Water rights and other legal constraints
2. Cost effectiveness
3. The impact on the economy
4. The impact the measures could have on environmentally sensitive areas
5. Potential water quality problems

Discussion: Any water that can be obtained from unconventional or other sources will most likely be helpful in a drought or emergency situation. However, this should not be the only option considered, even if the alternate temporary supply is adequate. This is especially true if the problem is inadequate system capacity because (1) the problem is likely to recur and (2) the use of the alternate supply may prove to be a hardship on others or the use is more costly to the customers.

C. Step 3 - Assess System Management and Rank Severity of Impacts or Level of Concern

Objective: To determine what water supply or system constraints would have the most severe impact and then to rank these into several levels of concern so that appropriate measures can be determined to handle each stage.

Procedure: Each utility situation is unique. Therefore, the basis for setting levels of concern will be different. The purpose of this step is to first determine what set of conditions would prevent that utility from providing certain levels of service. The first level or stage should be set at a level indicating that the situation warrants concern but in advance of a point associated with an immediate health, safety, or economic threat. Some of the conditions that should be considered for a first level situation include:

1. Water demand is approaching the safe capacity of the system.
2. Lake levels are still high enough to provide an adequate supply, but the levels are low enough to disrupt some other beneficial activity such as a profitable recreational activity.

3. The water supply is still adequate, but the water levels or volumes are low enough that there is a real possibility that the supply situation would become critical if the drought or emergency were to continue.

A second level of concern should include the following:

1. Water levels are still adequate but are declining at such a rapid rate that a more serious problem could result in the very near future.
2. Water demand occasionally reaches what has been determined to be the safe limit of the system beyond which the failure of a pump or some other piece of equipment could cause a serious disruption of service to part or all of the system.
3. Reservoir levels, well levels, or river flows are low enough to disrupt some major economic activity or cause unacceptable damage to a vital ecosystem.

A third level of concern should include the following:

1. Water levels are so low in the lake or river that the supply intake is in danger or a minimum well level is being approached which, if reached, would result in a failure of the system to provide water.
2. Water levels are low enough in the distribution system storage reservoirs to hinder adequate fire protection.
3. Water demand is exceeding the system's capacity on a regular basis and, thus, presenting a real danger of a major system failure.

A fourth level of concern would include:

1. The failure of a major component of the system which causes an immediate health or safety hazard.
2. Lake, river, or well levels are so low that diversion or pumping equipment will not function properly.
3. The contamination of the water supply or the occurrence of some other immediate health consideration.

Discussion: Successful drought contingency and water curtailment programs have been instituted that consider from two to more than four levels of severity. The most important consideration is determining the set of circumstances that are unique to each system. The reason for determining the type of trigger or threshold conditions that will move a utility from one stage of severity to another is to select the control measures that are appropriate for each stage. Many

of the considerations are social in nature and best may be addressed by a citizen's advisory group, task force, or some other forum for obtaining public input. It would also be advisable to keep the general public informed of the utility's efforts during this stage of the drought contingency planning process.

D. Step - 4 Design Emergency Management Program

Objective: To determine which emergency response or demand reduction measures are appropriate for each level of concern as determined by the trigger conditions.

Procedure: In this step, the actual contingency plan is developed. The nature of the population served, the availability of alternate supplies, the characteristics of the individual utility, and the statutory authority of the utility are some of the considerations that need to be taken into account in this step. Public involvement at this stage is essential. In discussing this step, it is important to note that many of the long-term measures considered in a Conservation Plan are also applicable to drought or water curtailment. Long-term conservation measures will not be discussed again in these guidelines but it would be advantageous to examine conservation measures to see if any of them would be applicable. At a minimum, adopted conservation measures should be reiterated.

Both Supply Management and Demand Management options can be incorporated into the water curtailment plan. Specifically, the alternate supply sources that were considered in Step 2 should be evaluated during this step to determine which ones are feasible and to determine the social, economic, and environmental costs for each alternative. If these costs are not high, supply augmentation or substitution may be one of the measures instituted at less severe stages. However, if the cost is high, these measures may need to be reserved for more severe conditions.

Emergency demand management techniques are those practices, regulations, and activities that would result in the temporary reduction of water use in response to a drought or emergency situation. They include both voluntary activities and mandatory components. A good public information program is extremely important at this stage. Deciding on which measures should be used at which level of severity, as established in Step 3, will, in large part, determine how well the public accepts the program. The following list presents examples of some of the measures that could be instituted for mild, serious or critical conditions.

1. Mild Condition Measures
 - a. Inform public by mail and through the news media that a threshold level or trigger condition has been reached, and that they should look for ways to voluntarily reduce water use.
 - b. Establish an information center and actively discuss the situation in the news media.
 - c. Advise the public of the trigger condition situation daily.

- d. Publicize a voluntary daily lawn-watering schedule.
2. Serious Condition Measures
- a. Continue those activities started under the mild condition measures, but make the lawn-watering schedule mandatory.
 - b. Fine water wasters.
 - c. Institute an excessive-use fee.
 - d. Prohibit certain uses, such as water used in ornamental water fountains or other non-essential water uses.
 - e. Ask industries or other non-municipal water users to stop certain uses, find alternate sources, increase recycling, or modify production processes where possible.
3. Critical Condition Measures
- a. Prohibit all outdoor water use.
 - b. Limit the amount of water each customer can use and establish legally binding penalties for those who fail to comply.
 - c. Require industrial or commercial water users to stop operations so that remaining water is available for essential health and safety-related uses.

Discussion: The choices made in this step will, to a large extent, determine the effect the utility's water curtailment plan will have on its water use. Again, it must be stressed that public involvement will be very helpful. It is also very important that the trigger conditions determining the level of concern match the control measures and that the customer understands both the measures and the need for them. In other words, the customer must understand what the trigger conditions are, what the consequences of these different stages of severity are, and how the emergency measures will help relieve or control the problem.

E. Step 5 - Evaluate Procedures and Regulations and Implement Plan

Objective: To develop those procedures, regulations, and documents that are necessary to complete the plan and implement the program.

Procedure: The primary reason for developing a plan is to have a guide for implementing the water curtailment program. The goal is to have an implementable plan that provides a utility with a well conceived, workable process that customers understand and that can be used in the event it

is needed. In order to accomplish this, each utility will have to develop legal, regulatory, and procedural documents or guides that are unique to their situation. The purpose of the first four steps is to develop the technical, engineering, and physical components of the drought contingency or water curtailment plan. The purpose of the last step is to develop the institutional components of the plan so that it can be implemented when needed. Examples of procedural considerations and legal or regulatory components that are necessary for implementation are listed below.

Procedural Considerations

1. Procedures that notify the public that an emergency exists, include predetermined steps for media notification or direct customer notification.
2. Public information and education programs that make the public fully aware of the provisions of the plan, including the reason for each of the trigger conditions and the measures that go with each level of concern.
3. A method for updating the plan when needed.
4. A guidebook or checklist for utility employees to follow.

Legal or Regulatory Considerations

1. Ordinances, bylaws, resolutions, or other implementing legal documents.
2. New or revised contracts with existing or alternate water supplies.
3. Amend contracts with industries or commercial water users who may have water supplies cut off or curtailed.
4. Changes to water rights permits or contracts with current water suppliers.

Discussion: This is the final step in the procedure to design a drought contingency or water curtailment plan. It is also the step that puts the legal documents in place for implementing the program. All information needed for the development of the five required elements of the plan is now available. Public involvement at this point is strongly recommended.

IV. Assistance

Any water utility may contact the Oregon Water Resources Department for assistance. Also the Emergency Management Division is available. The following organizations may also have assistance or materials available; The League of Oregon Cities, The Oregon Association of Water Utilities and the American Water Works Association.

APPENDIX: SAMPLE REVIEW CHECKLIST
for Water Curtailment Plan Development

The following checklist provides a convenient method to insure that the most important items that are needed for the development of a water curtailment plan are considered.

1. Utility Evaluation Data

A. Population of Service Area _____ (Number)

B. Area of Service Area _____ (Sq. mi.)

C. Number and Type of Connections in Service Area
_____ (Res.) _____ (Comm.) _____ (Ind.)

D. Rate of New Connection Additions per Year
_____ (Res.) _____ (Comm.) _____ (Ind.)

E. Water Use Information

1. Average Water Production for Last Two Years _____ (gal./yr.)

2. Average Monthly Water Production for Last Two Years _____
(gal./mo.)

3. Estimated Monthly Water Sales by User Category (gal.) (Use latest typical year)

	Residential	Commercial- Institutional	Industrial	Total
January	_____	_____	_____	_____
February	_____	_____	_____	_____
March	_____	_____	_____	_____
April	_____	_____	_____	_____
May	_____	_____	_____	_____
June	_____	_____	_____	_____
July	_____	_____	_____	_____
August	_____	_____	_____	_____
September	_____	_____	_____	_____
October	_____	_____	_____	_____
November	_____	_____	_____	_____
December	_____	_____	_____	_____
Total	_____	_____	_____	_____

4. Peak Daily Use _____ (gpd).

5. Peak to Average Use Ratio (average daily summer use divided by annual average daily use) _____

F. Safe Annual Yield of Water Supply _____ (gal)

G. Peak Daily Capacity of System _____ (gal)

H. Major High-Volume Customers (List) _____

I. Population and Water Use or Wastewater Volume Projections (List) _____

J. Percent of Water Supply Connections in System Metered
 _____ (Res.) _____ (Comm.) _____ (Ind.)

K. Water or Wastewater Rate Structure
 (Flat, Increasing Block, Etc.) _____

- L. Average Annual Revenues from Water or Wastewater Rates _____ (dollars)
 - M. Average Annual Revenue from Non-Rate Derived Sources _____ (dollars)
 - N. Average Annual Fixed Costs of Operation _____ (dollars)
 - O. Average Annual Variable Costs of Operation _____ (dollars)
 - P. Average Annual Water or Wastewater Revenues for Other Purposes (if applicable) _____ (dollars)
 - Q. Copies of Applicable Local Regulations (List) _____
 - R. Copies of Applicable State, Federal or Other Regulations (List) _____
 - S. Special Information (List)
2. Public Involvement in Planning Process
- A. Public at Large (List) _____
 - B. Special Interest Groups (List) _____
3. Water Curtailment

		Incorporate/Address		
		<u>Considered</u>	<u>Yes</u>	<u>No</u>
A.	Step 1 - Identify System Constraints			
	(1) Source-related problems			
	(a) Aquifer and well yield	_____	_____	_____
	yield	_____	_____	_____
	level	_____	_____	_____
	well capacity	_____	_____	_____
	(b) Reservoirs (specific)			
	yield	_____	_____	_____
	level	_____	_____	_____

		specific concerns	_____	_____	_____
	(c)	Surface water diversion (general)	_____	_____	_____
		flow variation	_____	_____	_____
		levels	_____	_____	_____
		water rights	_____	_____	_____
		environmental	_____	_____	_____
		recreational	_____	_____	_____
		water quality impacts	_____	_____	_____
	(2)	System-related problems	_____	_____	_____
	(a)	Peak or high demands	_____	_____	_____
	(b)	System limits	_____	_____	_____
	(c)	Public health & safety	_____	_____	_____
B.	Step 2 - Locate and Assess Alternate Sources				
	(1)	Existing wells, ponds, or reservoirs	_____	_____	_____
	(2)	Reactivate abandoned wells or dams	_____	_____	_____
	(3)	Purchase water from others on emergency basis	_____	_____	_____
	(4)	Build emergency facilities	_____	_____	_____
	(5)	Reuse wastewater	_____	_____	_____
C.	Step 3 - Assess System Management and Rank Severity of Impacts		_____	_____	_____
	(1)	Determine impacts drought or emergency conditions would have	_____	_____	_____

- | | | | | | |
|----|-----|--|-------|-------|-------|
| | (2) | Rank impacts by order of severity | _____ | _____ | _____ |
| | (3) | Group causal condition by order of impact severity | _____ | _____ | _____ |
| | (4) | Set “Trigger Conditions” | _____ | _____ | _____ |
| D. | | Step 4 - Design Emergency Management Program | | | |
| | (1) | Evaluate measures | | | |
| | (a) | Information | _____ | _____ | _____ |
| | (b) | Media programs | _____ | _____ | _____ |
| | (c) | Economic incentives | _____ | _____ | _____ |
| | (d) | Fines | _____ | _____ | _____ |
| | (f) | Prohibition of certain uses | _____ | _____ | _____ |
| | (g) | Legal penalties | _____ | _____ | _____ |
| | (2) | Rank measures by order of severity of conditions determined in Step 3. | _____ | _____ | _____ |
| E. | | Step 5 - Evaluate Procedure and Regulations and Implement Plan | | | |
| | (1) | Procedural considerations to address in the plan | | | |
| | (a) | Notification procedure | _____ | _____ | _____ |
| | (b) | Public information on “Trigger Conditions” | _____ | _____ | _____ |
| | (c) | Method to update plan | _____ | _____ | _____ |
| | (d) | Utility guidebook or check list | _____ | _____ | _____ |
| | (2) | Legal or regulatory considerations | | | |
| | (a) | Utility ordinances or by laws | _____ | _____ | _____ |

- (b) Changes to plumbing codes _____
- (c) Revised or alternate contracts with suppliers _____
- (d) Amended contracts with major customers to provide for cut-off procedures _____
- (e) Changes to water rights or other contracts _____

APPENDIX 5

MODEL WATER CURTAILMENT MEASURES FOR CITY WATER UTILITIES

OREGON WATER RESOURCES DEPARTMENT
April 1988

WATER CURTAILMENT MEASURES

First Level of Concern -

Voluntary Reduction in Water Use

The governing board (mayor, city council, board of directors) of the agency should issue a general request for a voluntary reduction in water use by all water users. The request should be made at a time when there is a strong indication that the agency's water supply will be reduced beyond the capacity to provide adequate service to all water customers.

The request should include a summary of the current water situation, the reason for the request cutback in use, and a warning that mandatory cutbacks will be required if the voluntary measures do not sufficiently reduce water usage. (Suggest a percentage reduction).

The request for voluntary reduction of water use should be widely distributed to water users to assure public knowledge of the request. Local radio and TV stations, as well as newspapers, should be asked to run periodic announcements of the request. Leaflets should also be distributed either house to house, or to banks, stores, supermarkets, and public buildings. Water conservation suggestions should be included with the announcements and leaflets.

WATER CURTAILMENT MEASURES

Second Level of Concern

Ordinance Prohibiting Times and Types of Outside Water Use

The governing body of the agency should pass an ordinance which restricts the irrigation of lawns, gardens and landscaped areas according to odd-even water days. (Potentially for only limited hours).

The ordinance should also prohibit certain outside uses of water, such as car washing, washing down sidewalks or parking lots, filling swimming pools, using water for dust control, and other uses.

The ordinance should discontinue the addition of water service connections to the water system for the term of the ordinance.

The ordinance should include penalties for violation of the ordinance, including a warning, the installation of a flow restrictor, and the disconnection of water service.

A sample ordinance follows.

MODEL ORDINANCE PROHIBITING NONESSENTIAL USES OF WATER

ORDINANCE NO. _____

An Ordinance of the _____(agency), Declaring a Water Shortage Emergency, Establishing Rules and Regulations Prohibiting or Limiting Nonessential Uses of Water, and Providing Penalties for Violation Thereof.

The _____(governing body) of _____ (agency) does enact at follows:

Section 1. Purpose and Intent. The _____ (governing body) of _____ (agency) hereby declares that a water shortage (agency) due to drought conditions prevailing throughout this region and that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the _____ (agency) to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

In order to conserve the water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection, this _____ (governing body) adopts the following regulations and restrictions on the delivery and consumption of water to take effect immediately and remain in effect until rescinded by ordinance.

The specific uses regulated or prohibited in the Ordinance are nonessential, if allowed would constitute wastage of water, and should be prohibited.

Section 2. Definitions. For the purpose of the Ordinance, the following terms have the meaning given:

“Customer” any person using water supplied by the _____ (agency).

“Chief Officer” the _____ (Chief Officer) of the _____ (agency)

“Person” any person, firm, entity, partnership, association, corporation, company, or organization of any kind.

“Water” water from the _____ (agency), unless expressly provided otherwise or required by the contract.

Section 3. Application. The provisions of this Ordinance shall apply to all customers using water provided by the _____ (agency).

Section 4. Regulation of Sprinkling and Watering. No person or customer shall sprinkle, water, or irrigate any shrubbery, trees, lawns, grass, ground covers, plants, vines, gardens, vegetables, flowers, or any other vegetation except as follows:

- (a) Such irrigation, sprinkling, and watering shall be permitted by _____ (even-numbered addressed residences or certain locations) or even-numbered days of the calendar.
- (b) Such irrigation, sprinkling, and watering shall be permitted by _____ (odd-numbered addressed residences or certain locations) on odd-numbered days of the calendar.

Section 5. Nonessential Residential Water Use. The following residential water uses are hereby determined to be nonessential and are prohibited:

- (a) The use of water to wash any motorbike, motor vehicle, boat, trailer, airplane, or other vehicle, except at a commercial fixed washing facility.
- (b) The use of water to wash down any sidewalks, walkways, driveways, parking lots, tennis courts or other hard surfaced area, or building or structure.
- (c) The use of water to fill, refill or add to any indoor or outdoor swimming pools or Jacuzzi pools except for neighborhood fire control, where the pools have recycling water systems and evaporative covers, or where the use of the pool is required by a medical doctor's prescription.
- (d) The use of water in a fountain or pond for aesthetic or scenic purposes except where necessary to support fish life.

Section 6. Nonessential Commercial or Industrial Use. The following commercial or industrial water uses are hereby determined to be nonessential and are prohibited:

- (a) The use of water to serve a customer in a restaurant unless requested by the customer.
- (b) The use of water for scenic and recreational ponds and lakes, except for the minimum amount required to support fish life.
- (c) The use of water from hydrants for construction purposes, fire drills, or any purpose other than firefighting.
- (d) The use of water by a golf course to irrigate any portion of its grounds except those areas designated as tees and greens.
- (e) The use of water for dust control.

- Section 7. Gutter Flooding. No person or customer shall cause or permit water to run to waste in any gutter or drain.
- Section 8. Regulation of Applications for New Water Service. No applications for new, additional, further expanded, or increased-in-size water service connections, meters, service lines, pipelines extensions, mains, or other water service facilities of any kind shall be allowed, approved, or installed.
- Section 9. Discontinuance of Service The _____ (Chief Officer) may, after one warning by certified mail or in person by staff, disconnect the water service of any person or customer whenever he determines that such person or customer has failed to comply with any provisions of this Ordinance. Service so disconnected shall be restored only upon payment of the turn-on charge, hereby fixed at \$10.00 during office hours or \$20.00 after office hours, or as otherwise specified by law, and any other costs incurred by the _____ (agency) in the discontinuance of service and the giving of suitable assurance to the _____ (agency) that the action causing the discontinuance will not be repeated.

In addition to the foregoing, the _____ (agency) may, prior to restoration of service, install a flow-restrictive device on the customer's service.

- Section 10. Variances. The _____ (Chief Officer) may, in writing, grant temporary variances for prospective uses of water otherwise prohibited after determining that due to unusual circumstances to fail to grant such variance would cause an emergency condition affecting health, sanitation, or fire protection of the applicant or the public.

The _____ (governing body) shall ratify or revoke any such variance or adjustment at its next scheduled meeting. Any such variance or adjustment so ratified, may be revoked by later action of the _____ (governing body).

No such variance shall be retroactive or otherwise justify any violation of this Ordinance occurring prior to issuance of said temporary variance.

- Section 11. Emergency Ordinance. This Ordinance is hereby declared to be necessary for the immediate preservation of the public peace, health, and safety and shall take effect and be in force upon its adoption by the members of the _____ (governing body). Due to severe drought conditions in the area, it is imperative that this Ordinance become effective immediately to protect existing water supplies for human consumption, sanitation, and fire protection.
- Section 12. Ordinance Controlling. The provisions of this Ordinance shall prevail and control in the event of any inconsistency between this Ordinance and any other rules or regulations of the _____ (agency).

Section 13. Severability Clause. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be unconstitutional, such decision shall not affect the remaining portions of this Ordinance. The _____ (governing body) of the _____ (agency) declares that it would have passed each phrase thereof, irrespective of the fact that any one or more such provisions be declared unconstitutional.

Section 14. Publication. The _____ (Clerk's full title) is hereby directed to publish this Ordinance for the period and in the manner required by the _____ (appropriate legal reference).

ORDER PUBLISHED THIS _____ day of _____ 19 _____.

ADOPTED THIS _____ day of _____ 19 _____, (by the following vote):

AYES:

NOS:

ABSENT:

Signed: _____

Attest: _____

(Clerk)

WATER CURTAILMENT MEASURES

Third Level of Concern

Ordinance Prohibiting All Outside Uses of Water

The governing body of the agency should pass an ordinance which restricts all outside use of water, including watering lawns, gardens, or other landscaped areas.

The ordinance should follow the same format as the ordinance in Step 2, except for Section 4, which should read as follows:

“Section 4. Prohibition on Sprinkling and Watering. No person or customer shall sprinkle, water or irrigate any shrubbery, trees, lawns, grass, ground covers, plants, vines, gardens, vegetables, flowers or any other vegetation.”

WATER CURTAILMENT MEASURES

Fourth Level of Concern

Ordinance Reducing All Water Uses

The governing body of the agency should adopt an ordinance requiring the mandatory reduction of water usage.

For residential customers, the ordinance would set a maximum daily allotment for the amount of water used per resident. If a resident used more than its allotted number of gallons per day, the resident could have water service disconnected or be fined.

An allotment for commercial water users would be set at 75% of the water used during the same time period of the previous year.

Along with the implementation of such an ordinance, the agency should make available to the water users, either free or for a nominal fee, water conservation kits (including shower flow restrictors and toilet damming devices) to help reduce the amount of water used.

MODE ORDINANCE REDUCING ALL WATER USES

ORDINANCE NO. _____

An Ordinance of the _____ (agency), Declaring a Water Shortage Emergency, Establishing Rules and Regulations for Allocating Available Water Resources, and Providing Penalties for Violations Thereof.

The _____ (governing body) of _____ (agency) does enact as follows:

Section 1. Purpose and Intent. The _____ (governing body) of _____ (agency) hereby declares that a water shortage emergency condition prevails in the area served by the _____ (agency) due to drought conditions and that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the _____ (agency) to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

In order to conserve the _____ (agency) water supply for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection, this _____ (governing body) adopts the following regulations and restrictions on the delivery and consumption of water to take effect immediately and remain in effect until rescinded by ordinance.

The specific uses regulated or prohibited in the Ordinance are nonessential, and if allowed would constitute wasted water, and should be regulated.

Section 2. Definitions. For the purpose of the Ordinance, the following terms shall have the meaning given herein:

“Customer” any person using water supplied by the _____ (agency).

“Chief Officer” the _____ (Chief Officer) of the _____ (agency).

“Person” any person, firm, entity, partnership, association, corporation, company, or organization of any kind.

“Water” water from the _____ (agency), unless expressly provided otherwise or required by the contract.

Section 3. Application. The provisions of this Ordinance shall apply to all customers using water provided by the _____ (agency).

Section 4. Prohibiting Nonessential Water Use. Uses of water for residential purposes in excess of the following daily usage allotment are determined to be nonessential and are prohibited.

Section 5. Nonessential Residential Uses Defined. Uses of water for residential purposes in excess of the following daily usage allotment are determined to be nonessential:

(1) One or two residential units - Daily usage allotment

- a. one permanent resident _____ gallons
- b. two permanent residents _____ gallons
- c. three permanent residents _____ gallons
- d. each additional permanent resident _____ gallons

(2) Multi-residential units - Daily usage allotment

(three or more) for each permanent residence _____ gallons

Each customer in whose name water is supplied to a residence, or residences or apartments or other dwelling units, shall upon request of the _____ (Chief Officer) advise the utility under penalty of perjury the number of permanent residents using water supplied to the residence, residences, apartments, or other dwelling units. If the customer fails to advise the _____ (Chief Officer), each residence, apartment or dwelling unit shall be permitted the water allocation herein provided for one permanent resident.

(The usage allotments established for three or more residential units should be based on the number of residential units rather than number of persons because the method of computation of allotments will more accurately reflect the true number of permanent residents living in the units over a period of time in light of the turnover and vacancy rates, the difficulty of ascertaining the true number of permanent residents residing and the available census and other statistical data).

Section 6. Nonessential Commercial uses Defined. Uses of water for commercial purposes in excess of the following amounts are determined to be nonessential and are prohibited:

- 1. The use of water for schools, parks, recreation areas, golf courses, community food gardens, residential gardens, cemeteries, and similar recreation or memorial type facilities in excess of 75% of the amount consumed in (the same time period of the previous year).
- 2. The use of water for nursery facilities, restaurants, shopping centers, filling stations, health and swim clubs, and all other commercial uses in excess of 75% of the amount consumed in (the same time period as the previous year).

Section 7. Nonessential Industrial Uses Defined. Uses of water for industrial purposes in excess of the following amounts are determined to be nonessential:

1. The use of water for manufacturing, food processing, cooling or cleaning of equipment in excess of 75% of the amount consumed in (the same time period as the previous year).
2. The use of water for agricultural irrigation in excess of 75% of the amount consumed in (the same time period as the previous year).

Section 8. Other Nonessential Uses. All other uses of water not expressly set forth in this Ordinance in excess of 75% of the amount consumed in (the same time period as the previous year) are determined to be nonessential.

Section 9. Determination of Amount of Prior Water Consumption. The amount of water consumed in (the same time period as the previous year) shall be determined by _____ (agency) from its records. Where no such records exist, the amount shall be the average use of similar existing services as determined by the _____ (agency) from its records.

Section 10. Regulation of Applications for New Water Service. No applications for new, additional, further expanded, or increased-in-size water service connections, meters, service lines, pipeline extensions, mains, or other water service facilities of any kind shall be allowed, approved, or installed during the time this Ordinance is in effect.

Section 11. Penalties and Discontinuance of Service. Violations of any provision of this Ordinance shall be punished as follows:

First violation	Fine - _____
Second violation within 6-month period	Fine - _____
Third violation, and subsequent violations	Fine - _____

The _____ (Chief Officer) may, after written or personal warning disconnect the water service of any customer that repeatedly violates this ordinance. Water service disconnected shall be restored only upon payment of any turn-on charge and any other costs incurred by the _____ (agency) and suitable assurances that the action causing the discontinuance will not be repeated.

In addition to the foregoing, the _____ (agency) may, prior to restoration of service, install a flow-restrictive device on the customer's service.

Section 12. Enforcement. Each _____ (appropriate law officer) of the _____ (appropriate police force) shall diligently enforce the provisions of this Ordinance.

The _____ (Chief Officer) and all employees of the _____ (agency), Public Works Department, and Fire Department, have the duty and are hereby authorized to enforce the provisions of this Ordinance.

Section 13. Variances. The _____ (Chief Officer) may, in writing, adjust any consumer's usage allotment if it is determined that due to unusual circumstances to fail to do so would cause an emergency condition affecting health, sanitation, or fire protection of the applicant or the public; and may grant such adjustment in the case of a mixed residential and nonresidential use if it is found that such adjustment is necessary to place an equivalent allotment burden on consumers.

The _____ (governing body) shall ratify or revoke any variance or adjustment. Any variance or adjustment so ratified, may be revoked by later action of the _____ (governing body).

No variance or adjustment shall be retroactive or otherwise justify any violation of this Ordinance occurring prior to issuance of temporary variance or adjustment.

Section 14. Emergency Ordinance. This Ordinance is hereby declared to be necessary for the immediate preservation of the public peace, health, and safety and shall take effect and be in force upon its adoption by the members of the _____ (governing body). Due to severe drought conditions in the area _____ (agency), it is imperative that this Ordinance become effective immediately to protect existing water supplies for human consumption, sanitation, and fire protection.

Section 15. Ordinance Controlling. The provisions of this Ordinance shall prevail and control in the event of any inconsistency between this Ordinance and any other rules or regulations of the _____ (agency).

Section 16. Severability Clause. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be unconstitutional, such decision shall not affect the remaining portions of this Ordinance. The _____ (governing body) of the _____ (agency) declares that it would have passed each phrase thereof, irrespective of the fact that any one or more such provisions be declared unconstitutional.

Section 17. Publication. The _____ (Clerks full title) is hereby directed to publish this Ordinance for the period and in the manner required by the _____ (appropriate legal reference).

ORDERED PUBLISHED THIS _____ DAY OF _____. 19____.

ADOPTED THIS _____ DAY OF _____. 19____, (by the following vote):

AYES:

NOS

ABSENT

Signed: _____

Attest: _____

(Clerk)