

The Guthrie Daily Leader
April 28, 1897

APPALLING CATACLYSM Most Frightful Calamity Ever Known in Territory

Water spout and continued rains cause an overflow of the Cottonwood and Cimarron Rivers. . . . Rushing waters swoop down on sleeping people and bury them from sight.

Within ten minutes it is estimated that one hundred people found watery graves and that property and crops worth \$200,000 were destroyed.

Tulsa World
May 29, 1984

Flood Deaths Hit 12; Property Loss Mounts

As Tulsans cleaned up from the worst flood in the city's history, the grim toll from Sunday's storm mounted to 12 dead (later 14) and the property damage estimate threatened to shoot past \$150 million.

The flooding forced more than 3,000 families from their homes. . . .

OK

Water

NEWS

Board Program Helps Towns Insure Against Flood Losses

Somber newspaper accounts chronicle the devastating role flooding has played in Oklahoma history. Settlers to the territories, powerless to protect themselves from the merciless wrath of nature, were often left down-trodden and homeless in the wake of torrential rains.

Present-day residents of Oklahoma, despite significant technical advances, find state weather patterns to be just as disagreeable—and just as deadly. A flood in Guthrie in 1949 affected 2,500 residents of the flood-prone city, while in Enid, some 24 years later, relentless flooding resulted in the deaths of nine persons and \$78 million in damage. In 1986, Oklahoma was brought to its knees by torrential fall rains that inundated rural and urban areas alike, crippling industry and endangering thousands of

lives. Preliminary estimates of damage to land, crops, roads, homes and businesses amounted to hundreds of millions.

Nationwide, flooding causes more than 90 percent of all property damage attributed to natural disasters. Of 38 major disasters and emergencies in 1984, flooding played a devastating role in 26, affecting more than 33,700 families. In an average year, the sudden, awesome might of floodwaters inflicts 200 fatalities.

Routinely, communities pass zoning and building regulations to maintain orderly, well-planned development. Unfortunately, these measures often ignore problems relating to development within floodplains. As a result, homes, businesses and entire communities grow up in flood-hazard areas. Experts say that six to eight million of the nation's buildings are vulnerable to flooding.

For years, flood control planning focused on existing development through the construction of dams, diversions of levees or through emergency aid to flood victims. Since 1936, the federal government has spent more than \$9 billion on such works. In Oklahoma, the Corps of Engineers and the Bureau of Reclamation have constructed 40 major flood control projects, while the Soil Conservation Service has built more than 2,000 smaller structures. Despite these enormous



Photo Courtesy Muskogee Phoenix

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expenditures, flood losses, like floodwaters, continue to rise. In 1984, flooding inflicted nearly \$4 billion in property damage throughout the U.S.

To avoid immense outlays of tax dollars for flood assistance, The Federal Emergency Management Agency (FEMA) established the National Flood Insurance Program (NFIP) in 1968. The program provides local governments with a mechanism for implementing wise floodplain management. It requires participating communities to adopt and enforce guidelines drawn to reduce or avoid damages in flood-prone areas.

Today, FEMA serves almost two million policy holders in more than 17,000 communities across the U.S.

The Engineering Division of the OWRB coordinates the NFIP in Oklahoma. Division personnel provide communities with flood hazard maps and help them implement sound floodplain management programs.

"So few people realize that flood insurance is not only available, it is affordable as well," said Harold Springer, Engineering Division chief, who has overseen the program for 10 years.

Coverage is available on most commercial and residential buildings (including mobile homes and condominiums) and on almost any above-ground structure with at least two walls and a roof. Contents may be included or covered separately, which enables renters, as well as business and homeowners, to insure personal property. Insurance up to \$185,000 is available on single-family homes and up to \$60,000 on contents. The average annual premium for flood insurance protection is about \$220.

Eligibility depends on the adoption of recommended measures to prevent and mitigate flood losses.

To become eligible for the NFIP, a community first enters the emergency phase of the program by adopting preliminary floodplain management guidelines. The community qualifies for the regular phase after FEMA completes a detailed flood study of the area and local officials enact an acceptable floodplain ordinance.

When FEMA declares a community eligible, tenants and owners of homes and businesses may purchase policies from any local property and casualty insurance agency or licensed broker.

"Flood-prone lands are attractive because of their rich soils, minerals or advantageous locations. As a result, there has been a lot of short-sighted building in floodplain regions," Springer said. "Intelligent management can guide floodplain uses so they are consistent with a community's needs."

Zoning ordinances, subdivision regulations, building codes and health regulations are just a few ways to control development in the floodplain.

"The floodplain ordinance directs development in a variety of ways," Springer pointed out. "It restricts uses dangerous to health and property, limits alteration of the floodplain, controls dredging and other development which may increase flood damage, and regulates the construction of flood barriers which may unnaturally divert flood waters."

A floodplain ordinance cannot accomplish its purpose of reducing flood damage without proper and consistent enforcement, said Springer.

"The ordinance must set standards which require permits for all new construction in the floodplain. The ordinance should authorize periodic inspections by the local administrator to ensure that development continues to meet NFIP standards."

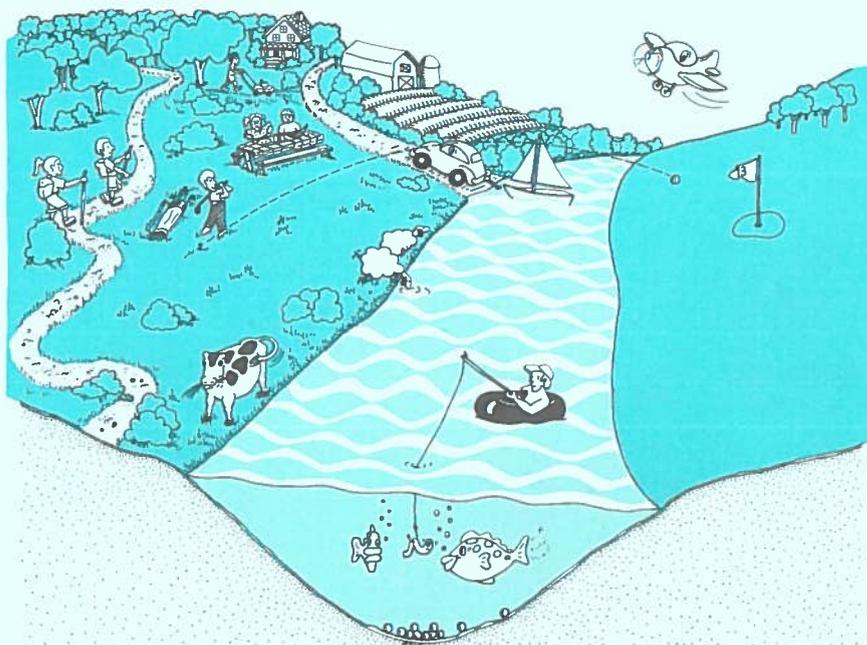
In most cases, it is necessary for the community to reserve the center of the floodplain to carry floodwaters efficiently. This floodway carries and discharges the largest part of the flood flow. The land area adjacent to the floodway must be reserved to discharge the base flood (often called the 100-year flood, which has a one percent chance of being equaled or exceeded in any given year) without increasing the water elevation above a certain elevation. Obstructions in the floodway can contribute to extremely hazardous velocities and back up water which may cause flooding elsewhere.

Development in the floodway must be planned and executed with great care.

"Often, strong floodwaters dislodge mobile homes and wash them into other homes. In some instances, they may become wedged in bridge openings, raising the flood's height and its potential for damage downstream," Springer said.

FEMA and the OWRB recommend the following as ideal floodplain uses, assuming they do not increase base flood elevations and can economically sustain a certain amount of flood

The OWRB suggests that floodplains be reserved for pasture lands, parks, recreation areas, landing strips and other uses where people and structures are sparse.



damage: agriculture; loading and parking areas and airport landing strips (except in flash flood areas); private and public recreational areas such as golf courses, picnic grounds, boat ramps, swimming areas, wildlife and nature preserves, fish hatcheries, target ranges, hunting and fishing areas and hiking trails; and lawns, gardens and playgrounds.

Springer noted that flood insurance may be purchased for any insurable property—even that outside the floodplain.

"In fact," he added, "over a third of all flood insurance claims have come from outside flood hazard areas."

The federal government does not allow federal loans on property in identified floodplains without the issuance of a flood insurance policy and only limited federal disaster aid is available to such areas.

"Citizens in potential flood areas should look into buying flood insurance before the Spring rains. It is so tragic when property owners learn about flood insurance too late," Springer said.

More information on flood insurance and the NFIP is available by calling the OWRB in Oklahoma City (271-2555), branch offices in Tulsa (581-2925), Lawton (248-7762) and McAlester (426-5435).

Ken Morris (left) and Harold Springer, state NFIP coordinators, and artist Marie Weltzheimer look over a flip chart used in presentations to communities interested in participation in the flood insurance program.



Staff Photo by Barry Fogarty



ORWA to Meet March 24–25

Gene Whatley, executive director of the Oklahoma Rural Water Association announces the association's annual meeting March 24–25. The meeting will be held at the Lincoln Plaza Conference Center in Oklahoma City. More information concerning the agenda and exhibits is available by calling ORWA at (405) 672-8925.

Compact Meetings Changed

J.A. Wood, OWRB Stream Water Division chief, announced changes in meeting dates of two river compact commissions in which Oklahoma participates.

The meeting of the Canadian River Compact Commission, originally scheduled for March 2, will be held April 17 at 11 a.m. in Bureau of Reclamation offices in Amarillo. Oklahoma's commissioner to that compact is Bob Johnson of Guymon.

The meeting of the Red River Compact Commission previously scheduled for April 27–28 has been rescheduled for April 29–30. The OWRB will host the meeting at the Park Suite Hotel in Oklahoma City. Representing Oklahoma will be former OWRB member L.L. Males of

Cheyenne and James R. Barnett, who serves as an ex officio member by virtue of his position as OWRB executive director.

Beware of "Purifier" Gadgets

The credibility of an honest water treatment industry is threatened by con men selling a variety of point-of-use (on the faucet or under the sink) water "purifiers."

According to *U.S. Water News*, some fly-by-night salesmen of water treatment devices are out to make a fast buck by preying on the consumers' fears. They slip their sales past the ignorance of their customers and install "purifiers" on perfectly safe, sanitary water supplies. Products are misrepresented by the con men as being the most advanced on the market, capable of solving any water quality problem.

Building on fears instilled by false claims, "general media tend to fan the flames of water quality problems into a raging forest fire that sends all the animals in the forest fleeing in search of treatment equipment to make their water better," reports *U.S. Water News*.

Good advice for homeowners considering the purchase of water treatment devices would be to collect a sample following accepted procedures and take it to a reputable lab for analysis. If there is a quality problem, then the homeowner can seek the right equipment to solve a specific problem.

So prolific were the con men and their products in California that the state passed a pair of stiff new laws. The first one sets a performance level standard for water treatment equipment and requires units to be certified before they can be offered for sale. The second law makes it a crime to use false or misleading advertising in the sale, rental or lease of water treatment devices.

Recycling Answer for Denver?

Planners for the city of Denver believe reused water could supply 15 percent of the city's tapwater requirement by 2000. The \$30 million project to convert wastewater to drinking wa-

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ter now produces one million gallons a day at the demonstration plant on the South Platte River. More encouraging still, say water officials, is the fact that the recycled water satisfies all existing and proposed federal and state drink-

ing water standards.

A two-year program of health testing the treated water on lab animals will follow. The 20-member team of scientists will also seek ways to reduce the \$2.50 per 1000 gallon treatment costs to compete with the 30 cent cost

of treating 1000 gallons of fresh water.

The demonstration plant employs the successive processes of lime clarification and recarbonation, sand and coal filtration, ion exchange, carbon adsorption, ozone disinfection and reverse osmosis.

**ACTIVE CONSERVATION STORAGE IN SELECTED OKLAHOMA LAKES AND RESERVOIRS
AS OF FEBRUARY 23, 1987**

PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (AF)	PERCENT OF CAPACITY	PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (AF)	PERCENT OF CAPACITY
SOUTHEAST			NORTHEAST		
Atoka	106,549	85.8	Eucha	79,567	100.0
Broken Bow	901,316	98.2	Grand	1,491,800	100.0
Pine Creek	77,700	100.0	Oologah	544,240	100.0
Hugo	157,600	100.0	Hulah	30,594	100.0
CENTRAL			Fort Gibson	365,200	100.0
Thunderbird	105,925	100.0	Heyburn	6,600	100.0
Hefner	75,355	100.0	Birch	19,200	100.7
Overholser	15,935	100.0	Hudson	200,300	100.0
Draper	90,003	90.0	Spavinaw	30,000	100.0
SOUTH CENTRAL			Copan	43,400	100.0
Arbuckle	62,571	100.0	Skiatook	295,900	100.0
Texoma	2,637,700	100.0	NORTH CENTRAL		
Waurika	203,100	100.0	Kaw	428,600	100.0
SOUTHWEST			Keystone	616,000	100.0
Altus	132,886	100.0	NORTHWEST		
Fort Cobb	78,423	100.0	Canton	97,500	100.0
Foss	182,760	75.0 ²	Optima	3,000	1 ¹
Tom Steed	88,971	100.0	Fort Supply	13,900	100.0
EAST CENTRAL			Great Salt Plains	31,400	100.0
Eufaula	2,329,700	100.0	STATE TOTALS		
Tenkiller	627,500	100.0		12,497,795.00	96.7³
Wister	27,100	100.0			
Sardis	302,500	100.0			

1. In initial filling stage
2. Temporarily lowered for maintenance
3. Conservation storage for Lake Optima not included in state total

Data courtesy of U.S. Army Corps of Engineers, Bureau of Reclamation, Oklahoma City Water Resources Department, and City of Tulsa Water Superintendent's Office.

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MARY E. WHITLOW, Editor

BRIAN VANCE, Writer

BARRY FOGERTY, Photographer

MARIE WELTZHEIMER, Design

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1000 N.E. Tenth, P.O. Box 53585
Oklahoma City, Okla. 73152

Gerald E. Borelli, Chairman

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