

THE URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
Lucas Building, 181 East 56th Avenue, Denver, Colorado 80216. Telephone: (303) 534-0105

National Flood Insurance Protection Now Available

Thanks to HUD, a national flood insurance program has been introduced. One Colorado community—Englewood—already has been approved for this valuable protection. Other communities with known flood hazard areas are eligible, and should lose no time getting approved for national flood insurance.

Private industry and the Federal government are cooperating in this program. Through subsidized rates the government lifts the burden from the property owner, without jeopardizing the company writing the insurance. In addition, the program provides workable incentives to foster intelligent use of lands in *flood plains*—those areas known to be in greatest danger from floods.

HUD (U.S. Dept. of Housing and Urban Development) is now receiving from communities all over the country their applications for insurance against floods caused by hurricanes and other circumstances including "cloudbursts."

Questions and Answers sheets are available from the District office, and have been supplied by the HUD Insurance agency to many cities and towns with a record of floods, or known to be exposed to flood hazards.

For a city or town to be approved by HUD for this insurance protection, there must be a demonstration of public interest. Moreover, a flood-endangered community must show that it is taking steps to adopt adequate land use and control measures. Rate-making studies then are made to work out actuarial tables, but provision is made to go ahead with insurance protection without waiting for these time-consuming studies to be completed.

Several Federal agencies are qualified to make these studies, including the Army Corps of Engineers. This is the agency which has made and is making studies of the gulches and streams in Colorado's Urban Drainage and Flood Control District. *One of its services is to provide maps showing specific flood plain areas along the gulch or stream studied.* The District office has these maps on several well-known flood hazard areas in Denver and the surrounding counties.

Flood insurance will continue to be sold through local insurance agents and brokers. Backing them is the National Flood Insurers Association, a nationwide pool of insurance companies formed to assist the government in carrying out the program. Insurance rates reflect the very significant subsidy provided by the Federal government. Until now, businessmen and homeowners with property in likely flood areas could not obtain insurance at all or had to pay confiscatory rates.

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Monthly News Bulletin Launched by District

"WHAT IS BEING DONE? How can we be sure that another disaster like the 1965 flood won't come this year or or five years from now and again cause damage running into the hundreds of millions of dollars, perhaps with greater peril to the lives and health of the people in the Denver metropolitan area and surrounding counties?"

Communication is needed, and for that purpose this newsletter has been launched by the Urban Drainage and Flood Control District. Important steps have been taken already, but the public has little awareness of them. Nor does the public know anything about the new programs now being undertaken by the District and cooperating agencies on local, state and federal levels. Most of all, the public needs awareness as to practical steps the concerned businessmen and home owners in hazard areas should be taking NOW to protect themselves and to minimize their losses.

Some major engineering problems must be tackled and resolved, but there are other problems in the field of public policy and public information. The sooner the public understands the situation and the steps that must be taken, the sooner the necessary engineering and construction work can be done.

Responsible engineers and public officials developing and conducting the various programs of the District have been hard at work for many months. Now it is time for the public to "sit in" and begin to take an active part in cutting down the hazards from floods. An alerted and aroused citizenry can offset the damage done during years of apathy and neglect, by finding out what needs to be done and how the various aspects of the job are being tackled.

FLOOD HAZARD NEWS will present timely news stories with pictures calling attention to major projects and developments. The first of these appears in this issue; "SARA—What San Antonio is Doing."

One feature of each issue will be a review of publications available. This will report about any new maps of flood plain areas within the District.

Personalities—District Board Members, engineers and others taking responsible action to minimize flood hazards—will be covered in these columns from time to time.

FLOOD HAZARD NEWS will present timely progress reports, but more important, it will sound a call to responsible action on the part of the District's people, as citizens and as voters, as businessmen and home owners—and as the officials entrusted with the responsibility of doing something about it—NOW.

The URBAN DRAINAGE & FLOOD CONTROL DISTRICT

James R. Quinn, Executive Director
Telephone: (303) 534-0151
Lucas Building
181 East 56th Avenue
Denver, Colorado 80216

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Flood Insurance Available

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One *plus* in the flood insurance program is the boost it gives to plans to utilize flood plains for parks and recreational areas, through proper zoning and restriction or prohibition of developments of other types on such lands.

The insurance program is expected to do much to make people aware of *flood plains and* just where these areas are situated within each community. Such knowledge is a basic first step in flood hazard protection, for the guidance of city planners, zoning authorities, subdividers and others.

Cities, towns and other governmental bodies which want to secure flood insurance protection for property owners should write to the Federal Insurance Administration, Dept. of Housing and Urban Development, Washington, D. C. 20410.

Qualifying For Flood Insurance; Busy Time For Local Agents

As one flood-threatened community after another qualifies for national flood insurance, there will be a rush to buy the new subsidized protection. Local agents have been alerted by the 90 to 100 national insurance companies cooperating in the Federal program.

One large segment of business concerns will be prime prospects for the insurance agents. *Every firm that has an SBA loan is required to purchase the flood insurance, where it is available.* This applies to every flood victim that has obtained an SBA loan since the 1965 flood and is still located in a flood plain area. Of course they will want this protection, knowing the danger and possible loss due to floods.

The District's Executive Director, James R. Quinn, estimates that from \$50 million to \$100 million worth of businesses will be insured under the SBA program alone, as soon as the City of Denver is qualified for the flood insurance.

The Colorado Insurers Association and its Director, Don Nabity, have met with District officials concerning flood insurance. The publication of the insurers group has supplied some flood protection information to its state-wide membership. The District will continue to provide the insurance people all the information it obtains.

Neither the District nor the municipalities will write flood insurance, of course. That is the role of the local agents for cooperating insurance companies. The District will continue to pass along the information concerning rules for qualification, along with gathering the necessary technical data and flood history to assist communities in meeting HUD qualifications for flood insurance.

ASSIGNMENT: To Protect YOU from Floods

MEET THE MEMBERS

Following the disastrous floods of June, 1965, the Colorado General Assembly adopted legislation creating the Urban Drainage and Flood Control District. Already 1.2 million people live within this District, and nearly 2.5 million are expected by the year 2000. Here we begin to acquaint the public with the men entrusted with responsibility for an aggressive program to minimize losses from future floods. Watch for biographical sketches of other Board Members in our forthcoming issues.

Chairman of the Board

JOHN J. NICHOLL

Representing Arapahoe County



John lives in Englewood, and since 1964 has devoted his full time to representing his portion of Arapahoe County on the Board of County Commissioners. Trained in civil engineering at the University of Colorado, he has specialized in land surveying. He has an extensive background in zoning, road and airport construction, subdivisions, and drainage problems.

In addition to varied civic responsibilities, he has held high posts in associations of county commissioners. John Nicholl spent four years in the U.S. Navy as an instrumental navigational instructor. He is married and has three children.

CARL N. DE TEMPLE

Representing City of Denver



Carl has been a member of Denver's City Council since 1963. Since 1964 he has been Executive Vice President of the Colorado Association of Commerce and Industry, long known as the Colorado Manufacturers Association. He was Denver's Manager of Welfare for two years, and spent six years with the FBI as a Special Agent. While winning a degree in mathematics from the University of Denver,

he was an All-Conference football star, and he now serves on Denver's Olympic Committee. Carl received numerous awards during his service with the U.S. Navy Air Corps in the South Pacific. He is married and has three children, one a teen-ager.

E. G. "TED" WAYMIRE

Representing Adams County



Ted lives in Brighton and has had a long career in public service. He is also a life insurance underwriter and was once a public school teacher and coach. For seven years he was Deputy County Assessor and then was County Assessor for nine years. Since 1947 he has been a County Commissioner for Adams County. He has served on important committees and organizations of public officials of the State of

Colorado and the Denver Metropolitan Area. He is married, and the Waymires have a married daughter.

MAYOR WILLIAM H. McNICHOLS

Representing City of Denver



"Mayor Bill" McNichols had been Manager of Public Works and Deputy Mayor for three years before becoming Mayor in 1968 after the resignation of Mayor Tom Currihan. He attended the University of Colorado and the University of Alabama, and has engaged in insurance and banking, automobile and aircraft businesses. During his European service with the Armored Infantry in World War II, Bill

was awarded three battle stars and three other medals. When his brother, Stephen L. R. McNichols, was Governor of Colorado (1956-1962), Bill served as his Executive Secretary. He is married and has one son.

The San Antonio River Authority (SARA) is the name given to a district in Texas that is comparable to Colorado's Urban Drainage District. SARA covers a four-county area encompassing the San Antonio SMSA (Standard Metropolitan Statistical Area).

SARA was established by the Texas State Legislature in 1937 and operates quite similarly to the Urban Drainage District in Colorado. SARA is limited to a 2 mill maximum for its program and this must be voted on by the electorate. The Urban Drainage District comparably has a 2½ mill maximum which also must be voted upon by the electorate.

\$25 Million To Date

A report filed by the San Antonio River Authority management in July, 1970 announced that a total of \$12 million dollars had been expended on improvement projects in the area up to that time.

This had been matched by a similar amount from Federal funds, namely the U.S. Army Corps of Engineers. A total of \$25 million has been expended on projects since the inception of the District in 1937.

Unique "Loop" Feature

Most popular of the San Antonio River Authority activities is listed as the "Loop." This is a small area of the river which is not actually part of any flood control project but represents a unique usage of a river as an economic asset when a river runs through the center of a metropolitan area.

Working with the merchants whose property fronted on the river, the San Antonio River Authority many years ago expended an amount of less than one half million dollars and provided for the damming up of a loop of the river which coursed through the heart of the City of San Antonio. This loop is about 5000 yards in length and has provisions for recirculating the water to keep it from be-

coming stagnant. Small dams at both ends of the loop provide for a depth of water sufficient to run barges and sightseeing boats.

Distinctive store fronts and sidewalk cafes as well as unique shops have been developed along the attractive waterway. A noteworthy feature is an outdoor theatre with the stage on one side of the river; the audience sits on the other side on a sloping bank providing for seating, theatre style.

"Loop" Extended to Hemisfair Grounds

With the coming of the Hemisfair held in San Antonio in 1968, the city extended from the loop an additional channel which carried water to the Hemisfair grounds. Beneath one of the permanent buildings of the Hemisfair, the City of San Antonio provided for a storage area for the equipment used in the loop program.

These include barges used for cleanup and maintenance, as well as the 50-passenger barges used to carry passengers on guided tours through the loop area. The passengers pay 60 cents each and the tour barges accommodate a heavy traffic load throughout the entire year. In the summer, the loop portion is shaded and much more comfortable than the hot dry area of San Antonio proper. In the winter, the loop presents a very pleasant and "out of the wind" area for guided tours. Tour boats leave about every fifteen minutes from the sidewalk cafe near the center of the loop. Tours feature a "canned" tape discussion for the one-hour tour.

20 Miles of Flood Control Projects

Flood control activities on the San Antonio River and its tributaries cover approximately 20 miles in the various projects. The river flows from the Olmos Creek flood control dam, created by the Army Corps of Engineers to





This well-managed waterway has become San Antonio's major civic asset.

the northeast of the city. As it moves southward, the river is joined by San Pedro Creek. Before joining the river, San Pedro Creek itself is joined by Apache, Alazan and Martinez Creeks.

SARA Authority Has Board Powers

The San Antonio River Authority has some powers not vested in the Urban Drainage District. In addition to the usual requirements in the area of flood control and flood plain management, SARA also has the function of water conservation, storage, procurement, distribution and supply.

In addition, the River Authority has control over such things as sewage treatment and solid waste disposal, pollution prevention and the development of parks, recreation facilities and preservation of fish for the area through which the river flows. In the case of the Urban Drainage District, the powers for these functions are granted to other agencies in the State of Colorado.

Channelization Chief Program

Only a few flood control facilities have been built on the San Antonio River. The major development on the river and its tributaries has been channelization, as indicated by the photographs herewith. Channelization has included a variety of techniques. One development features a rip-rapped area, and another has grassy slopes. There are also high concrete walls forming vertical banks, where the river turns abruptly or where the acquisition of additional land for sloping the channel was impossible.

Climatic conditions in the San Antonio Area allow the development of the grassy slopes at a much more rapid rate than would be possible in the Denver Metropolitan area. The grass can be planted at almost any season of the year and will take hold and grow during a larger portion of the year. As a result this method of control of the banks to prevent erosion is much more simple in San Antonio than it would be in Colorado.



te slopes with rip-rapping and vertical walls. Sloping banks quickly take durable grass cover in San Antonio.

SOME PROGRAMS UNDER WAY

1. *Urban Drainage Symposium*

A two-day Symposium designed to acquaint legislators, public officials and engineers in the development of "Urban Drainage in a Regional Context," is scheduled for the Regency Rodeway Motel in Denver, January 28-29, 1971. The District has lined up responsible and authoritative individuals to present their input to the urban drainage equation as a Regional Service Authority.

Dr. John Sheaffer, Program Planning Officer who reports to the Secretary of the Army for the Corps of Engineers, is a featured speaker. In addition, Richard Krimm, will present the program of Flood Insurance as sponsored by the Department of Housing and Urban Development (HUD).

Robert Rosenheim, Regional Director for HUD for Region 7, will be the featured Banquet speaker. He will outline the many programs of HUD which are available to communities that align themselves with the urban drainage equation. Ample time has been provided for discussion and an interplay among the professional and technical people who are expected to attend. The meeting will draw approximately 100 persons for the two-day Symposium.

2. *Flood Plain Resolutions*

The District has been meeting with county planning officials and city planning officials and seeking adoption by these people of the zoning resolution as adopted by the District in August of 1970. At the present time, beside the District, a Zoning resolution of one sort or another already exists in the City of Boulder as well as Boulder County, the City of Wheat Ridge and the City of Englewood. The City of Denver has a zoning resolution and some of its streams and gulches were flood plain zoned as long ago as 1959 and 1960.

The District hopes to have flood plain resolutions adopted by its major communities and counties as a significant effort in its 1971 Work Program.

3. *The St. Vrain Flood Plain Study*

The District is cooperating with the Boulder County authorities and the City of Longmont in sponsoring a study on the flood plain of the St. Vrain from Lyons, Colorado to the Weld County Line limit of the District. This \$27,000 engineering study will be handled by Boulder County through Bing Barstow, County Engineer. It is expected that the results of this study will be available by mid-1971.

4. *Rainfall/Runoff Program*

The District has signed a contract with the U.S. Geological Survey for the installation of sixteen new rainfall/runoff gauging stations in the Denver Metropolitan Area. Locations for these sites are expected to be established prior to May 1, 1971. This brings the stations covering the Metropolitan area to a total of thirty. Cost of this program to the District is \$8,500 per year which is matched by the USGS for this program.

5. *Flood Plain Information Series*

The District has taken over the sponsorship of the Flood Plain Information Series, as of January 1, 1971. This series has been sponsored by the Denver Regional Council of Governments. The District has taken it over in that the flood information forms a basis for future action for the District.

It appears that there are more than twenty streams to be surveyed and made a part of a regular flood information booklet. The activity relating to St. Vrain Creek was the last major stream in the District area to be covered in a flood plain information book. What remain are smaller tributaries to the major streams and many gullies which have a potential for flood hazard.

At the same time, the District is supporting the work of the U.S. Army Corps of Engineers which is reviewing its studies and maps of the major streams in the area. These include the Platte River, Clear Creek, Bear Creek, Sand and Tollgate Creeks. Studies made for all of these are to be revised and new data presented in the light of current situations, particularly of the 1965 flood which caused \$300 million damage in the Denver Metropolitan Area.

6. *Clear Creek Committee*

The District is represented in a Clear Creek Committee headed by Tom Ten Eyck, who heads the Natural Resources Division of the State Government.

Purpose of this committee is to seek to develop a program which would involve all of the elements concerned with the Clear Creek drainage channel. These include representatives of communities along the creek, as well as recreation districts, the State Department of Game, Fish and Parks, as well as ecologists and land-use planners.

Out of this committee is expected to come some suggested treatments of Clear Creek. It is likely that these will involve the development of certain areas in the flood plain for park uses to provide parks closer to the concentration of population in the Denver SMSA. The City of Wheat Ridge has already taken a significant program for the development of the flood plain of Clear Creek. Wheat Ridge zoned approximately five miles of Clear Creek and used the 1% flood line as a guide in flood plain zoning. At the same time the City of Wheat Ridge adopted the 17-page Flood Plain Resolution which had been previously adopted by the District.

7. *Clearinghouse for Information*

The District is developing a reference center and library. This will enable the District to act as a clearinghouse for information relating to the flood plains of the area the District serves. Included in this program will be the acquisition of data provided by the series of studies now under way in the District, as well as a variety of informative items from each of the counties and cities which are included in the District.

As a result of this development, the District will be able to provide in one place factual data about flood plains and other specific information needed by county planners, subdivision dividers and others, to enable them to conform with existing regulations regarding the flood plain. This portion of the District's program is expected to be in full operation by April 1, 1971.

QUINN-TESSENCE

BY JIM QUINN

Plain Talk from the District's Executive Director



At one year of age the Urban Drainage District is beginning to walk. Carefully, to be sure. But we are taking those first steps that will determine direction and purpose in the months ahead.

We're already peering intently toward the Fall of 1971 and the program for construction we will present for 1972.

Damage from flooding (from all causes) amounts to an awesome figure, estimated at \$3-\$5 million in the District each year. Exact figures cannot be determined because of the fact that flood insurance has not been available to form a basis for loss computation.

Which brings up another point. One of the contributions made by the District has been to spearhead the action for flood insurance. The program, underwritten by HUD is now available to qualifying cities and counties on an emergency basis.

We have been urging qualification since late fall and believe that we will reach our goal of at least a half-dozen cities by the time the Spring rains come.

Cost of flood insurance under the emergency provisions will cost the average resident less than \$5 per month. It's also available to most businesses in the District.

REUSE is underway. The name is an acronym - Renewing the Environment through Urban Systems Engineering - and it's a joint project of the Denver Regional Council of Governments and the Urban Drainage District. The District Board voted to support it with a commitment of \$60,000 of the \$100,000 total share and agreeing to implement the drainage program.

With maps and data from REUSE, the District will establish a Reference Center for local governments. This type of service on drainage will be available by Spring.

But 1972 looms on the horizon. To be prepared, the 1971 Work Program is developing data on which a construction program can be based. This will be done by planning with local cooperating agencies on detailed engineering of drainage basins. From these studies we will be able to select the basins, or portions of basins, for inclusion in a construction program for 1972. Financing plans will also be developed at that time.

All in all, 1971 promises to be a good year!



TIMELY AND AVAILABLE

Some Current Publications

URBAN DRAINAGE CRITERIA MANUAL
The Urban Drainage District, Reprint 1970.

The most popular manual of its kind, now in use all over the world!

Originally published by the Denver Regional Council of Governments under a grant from HUD, the manual was done under the direction of Wright-McLaughlin Engineers of Denver and involved contributions from both regional engineers and nationally recognized hydrologists.

The first printing of 500 copies was quickly exhausted. As one of the initial actions of The District, a reprinting of 300 sets was ordered. These are being consumed at a rapid rate.

Over 800 pages, the Manual covers 16 sections and discusses engineering data as well as the policy and philosophy so necessary to understand and cope with urban drainage problems today.

Copies are available through the Urban Drainage District. Cost is \$45.00 for the set. Postage is \$.66 per set to domestic purchasers.

Vol. V FLOOD PLAIN INFORMATION SERIES
Denver Metropolitan Area, November, 1970.

This is the latest book in the series published by U.S. Army Corps of Engineers, Omaha District. It covers five streams in Jefferson County, the western suburban county of Denver and one of the ten fastest growing counties in the Nation.

Volume V marks the first time the Corps has used photo-mosaics as the basic map for outlining the flood plain. Early reports indicate this is an improvement in presentation.

Volume V marks the last of the series to be sponsored by the Denver Regional Council of Governments. As of January 1, 1971 the Flood Plain Information series will be sponsored by the Urban Drainage District.

Copies are free—on a limited basis—to those who have a demonstrated need for the information. Sources are either DRCOG or The Urban Drainage District.

Watch this space for other announcements and reviews of publications available.

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