

FLOODPLAIN INFORMATION REPORT

Rocky Ford, Colorado

96-423
Tabled at
5/13/96
Board Mtg.

Prepared for:
City of Rocky Ford, Colorado



Department of Natural Resources
Colorado Water Conservation Board
Flood Control and Floodplain Management Section
1313 Sherman Street, Room 721
Denver, Colorado 80203

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PREFACE

This report is part of a program by the Colorado Water Conservation Board (CWCB) to make approximate floodplain maps prepared by the Federal Emergency Management Agency (FEMA) easier for local governments to use. This CWCB report provides limited engineering information to support the approximate delineations on the maps, and it provides floodplain management information to guide the local governments in the use of the maps.

The official floodplain information for the Town of Rocky Ford is the Flood Insurance Rate Map (FIRM), dated June 3, 1980. The FIRM was prepared by the Federal Insurance Administration (FIA), however this federal map does not have any published information accompanying it to describe either the engineering basis of the map or the manner in which the town could use it for floodplain management. The initial purpose of this report, therefore, is to provide the community with limited supporting information. The report includes a description of a hydrologic analysis that was performed for the community as part of the CWCB's technical assistance program. The hydrologic analysis is consistent with the map in this report. In addition, the report gives the community some basic information about floodplain management and it gives some alternatives that could be considered in formulating and implementing its floodplain management objectives.

A second function of this report is to assure that the FIRM meets the basic technical requirements for designation and approval by the CWCB. Without a report and without a hydrologic analysis, a map like the FIRM for Rocky Ford cannot qualify for CWCB designation. Colorado statutes require that local governments obtain from the CWCB the designation and approval of floodplain information prior to its use for regulatory purposes. This report provides a means for the FIRM to meet that statutory objective.

The FIRM was prepared prior to the completion of a CWCB document entitled "*Guidelines for Determining 100-year Flood Flows for Approximate Floodplains*" (Guidelines). That document provides the necessary hydrologic information in support of the 100-year floodplain boundaries identified on the FIRM. The hydrologic information contained in the *Guidelines* was used in preparing this report and it supports the subsequent designation of the Rocky Ford FIRM.

INTRODUCTION

Authorization

The CWCB has certain statutory responsibilities relating to the designation and approval of flood water runoff channels or basins as follows:

... "to devise and formulate methods, means, and plans for bringing about the greater utilization of the waters of the state and the prevention of flood damages therefrom, and to designate and approve storm or floodwater runoff channels or basins, and to make such designations available to legislative bodies of cities and incorporated towns, to county planning commissions, and to boards of adjustment of cities, incorporated towns, and counties of this state" ..., Section 37-60-106(1)(c) of the Colorado Revised Statues (CRS).

A CWCB designation and approval of current floodplain information is needed for the incorporated areas of the Town of Rocky Ford, Colorado. The CWCB has prepared this report as a means of designating Rocky Ford's FIRM so that the community can better implement its floodplain management program.

Purpose and Scope

This Floodplain Information Report (FIR) was prepared to provide supporting documentation for the approximate 100-year floodplain boundaries shown on the Rocky Ford FIRM, dated June 3, 1980. The FIRM was prepared using approximate floodplain techniques. It was not accompanied by a report detailing its engineering basis or its uses for floodplain management. This FIR provides limited engineering information to fulfill that need.

This FIR includes:

Authorization for the report and its purpose and scope;

Study area description including information on the community, the watershed, and any known flooding history/flooding problems;

A brief discussion of the community's response to the CWCB's designation and approval process;

Description of hydrologic and hydraulic information;

Floodplain management program; and

Copy of the community's Flood Hazard Boundary Map.

STUDY AREA DESCRIPTION

Community Description

Rocky Ford is located in southeastern Colorado in Otero County. It is located approximately 53 miles east of Pueblo. The area studied for the FIRM is the incorporated areas of the City of Rocky Ford as of June 3, 1980.

Watershed Description

The local drainage ponding areas can overflow during thunderstorm events through Rocky Ford and lie within the Arkansas River Basin Subregion 1, as set forth in the *Guidelines For Determining 100-Year Flows For Approximate Floodplains* and has a drainage area of less than 25 square miles. As a result, the basin size is less than the lower limit for the Arkansas River Basin Subregion 1, as set forth in the *Guidelines For Determining 100-Year Flows For Approximate Floodplains*.

Flooding Problems and Flooding History

Convective type cloudburst storms sometimes lasting for several hours, can be expected to occur in the Rocky Ford area during the summer months. The cloudburst storms can cause high peak flows with a small water volume over a short duration. Flooding has occurred in Rocky Ford as recently as the summer of 1995 due to such storms. The local drainage ponding areas is shown on the Rocky Ford FIRM and has been a source of local flooding problems in the past.

Flooding from general rainstorms may also occur during the months of June through September. General rainfall flooding is characterized by higher peak flows with a moderate volume and a moderate duration. Flooding is more severe when antecedent rainfall has resulted in saturated ground conditions or the ground is frozen and infiltration is minimal.

Research of the study area yielded minimal information regarding major flooding events in Rocky Ford. In spite of the long history of human activity in Otero County, there are no historical accounts of major flooding in Rocky Ford. There have been, however, occurrences of high water in the past.

Community Response to the CWCB Designation and Approval Process

The community was contacted initially by letter. In a follow up phone call a meeting was arranged with local officials to present the CWCB's proposal to designate and approve approximate floodplain information for Rocky Ford. A meeting was conducted by CWCB staff on April 10, 1996. Local officials in attendance included the town manager and building official. Both officials were very receptive to the CWCB's designation and approval of the county's floodplain information.

ENGINEERING METHODS

Hydrologic Analysis

Hydrology information for the stream with an approximate floodplain delineation on Rocky Ford's FIRM should be estimated in accordance with the CWCB's "Guidelines for Determining 100-Year Flood Flows for Approximate Floodplains" (Guidelines). However, the 100-year flow for the streams with approximate floodplains cannot be estimated by utilizing the regression equation for Arkansas River Basin, Subregion Ark-1 because the drainage basin size for the local drainage ponding areas is less than 25 square miles which is less than the lower limit for the Arkansas River Basin, Subregion Ark-1. Additionally, the CWCB has not developed a procedure for determining hydrologic information for local drainage ponding areas. Therefore, a detailed hydrologic and hydraulic study is required prior to any floodplain development. A procedure for determining hydrology information for approximate floodplains of lakes, ponds, and local drainages has not been established. The hydrologic methodology developed in the Guidelines is appropriate for designation and approval of approximate floodplain information and for use in simple floodplain analyses for development such as open space, agriculture, farm bridges, pole barns, and individual single residential structures. The methodology is not appropriate for development involving residential subdivisions greater than 50 lots or occurring on sites greater than 5 acres, commercial construction, industrial construction, construction of public transportation facilities, or construction of flood control facilities.

The Town of Rocky Ford should regulate the approximate floodplains on a case-by-case basis subject to a detailed hydrologic and hydraulic analysis performed by a professional engineer, in accordance with the determinations of the Colorado Water Conservation Board regarding the applicability of the Guidelines.

Hydraulic Analysis

The hydraulic analysis for the preparation of the FIRM likely consisted of interpretation of USGS quadrangle mapping by HUD's engineering consultant, along with telephone discussions with local officials. The telephone discussions addressed any historic flood problems that may

have occurred in Rocky Ford. The FIA did perform and did not have the benefit of any detailed hydrologic and hydraulic analyses for the preparation of the FIRM. Future hydraulic analyses for determining 100-year water surface elevations for approximate floodplains may be computed using FEMA's Quick-2 computer program, the Corps of Engineers' HEC-2 computer program, or other acceptable hydraulic methods.

FLOODPLAIN MANAGEMENT

Local Ordinance/Statutory Requirements

Communities that manage their floodplains in Colorado do so most often through the local regulatory process. This requires a community to adopt an ordinance or regulation that sets forth the performance standards by which development will occur in identified flood hazard areas. Nationwide and in Colorado, regulations are enforced within the area of the 100-year floodplain.

The basic requirement of these regulations is that new development and substantial improvement (50% or greater than current market value) of existing development cannot occur in the 100-year floodplain without a floodplain development permit being obtained. Obtaining such a permit requires compliance with engineering standards. In communities like Rocky Ford that have no detailed floodplain information with water surface elevations, the engineering standards are general. Structures must be built with materials and techniques that "minimize flood damages." In communities that have detailed floodplain information the standards require that residential buildings must be elevated above the 100-year elevation and that non-residential buildings must be either elevated or floodproofed. Other structures or projects (i.e. bridges, culverts or fill) must be constructed in a way that minimizes the potential increase in flood elevations they may cause.

Flood Insurance

Flood insurance is made available to owners and occupants of floodprone property through the federal government's National Flood Insurance Program (NFIP). The NFIP insurance is available to anyone in any community that participates in the NFIP. At the time of this publication, Rocky Ford is participating in the NFIP. The city entered the program on June 3, 1980. Communities become participants by adopting floodplain regulations, adopting an NFIP map (if one exists) and agreeing to cooperate with the federal government in the local implementation of the NFIP. Property owners and occupants can then contact an insurance agent familiar with the NFIP (perhaps their own agent) and purchase insurance through that agent, much like they would purchase homeowner's insurance. Brochures and other information regarding the National Flood Insurance Program can be obtained by calling the Regional Office of the Federal Emergency Management Agency (FEMA) in Denver at (303) 235-4830.

Floodplain Management Alternatives

Besides floodplain regulations and flood insurance, there are many actions that can reduce the risk of flood damage in a community. Generally these actions fall into two classes, structural actions and non-structural actions. Structural actions involve the construction of facilities to separate floodwaters from property that is at risk. They include construction of improved channels, enlargement of crossing structures (bridges and culverts), levees and floodwalls, reservoirs and ponds to detain floodwaters and diversion channels and pipes to direct waters elsewhere. Non-structural actions usually involve removing people and/or structures from the risk without physically altering the floodplain. Actions include regulation of new development, the adoption

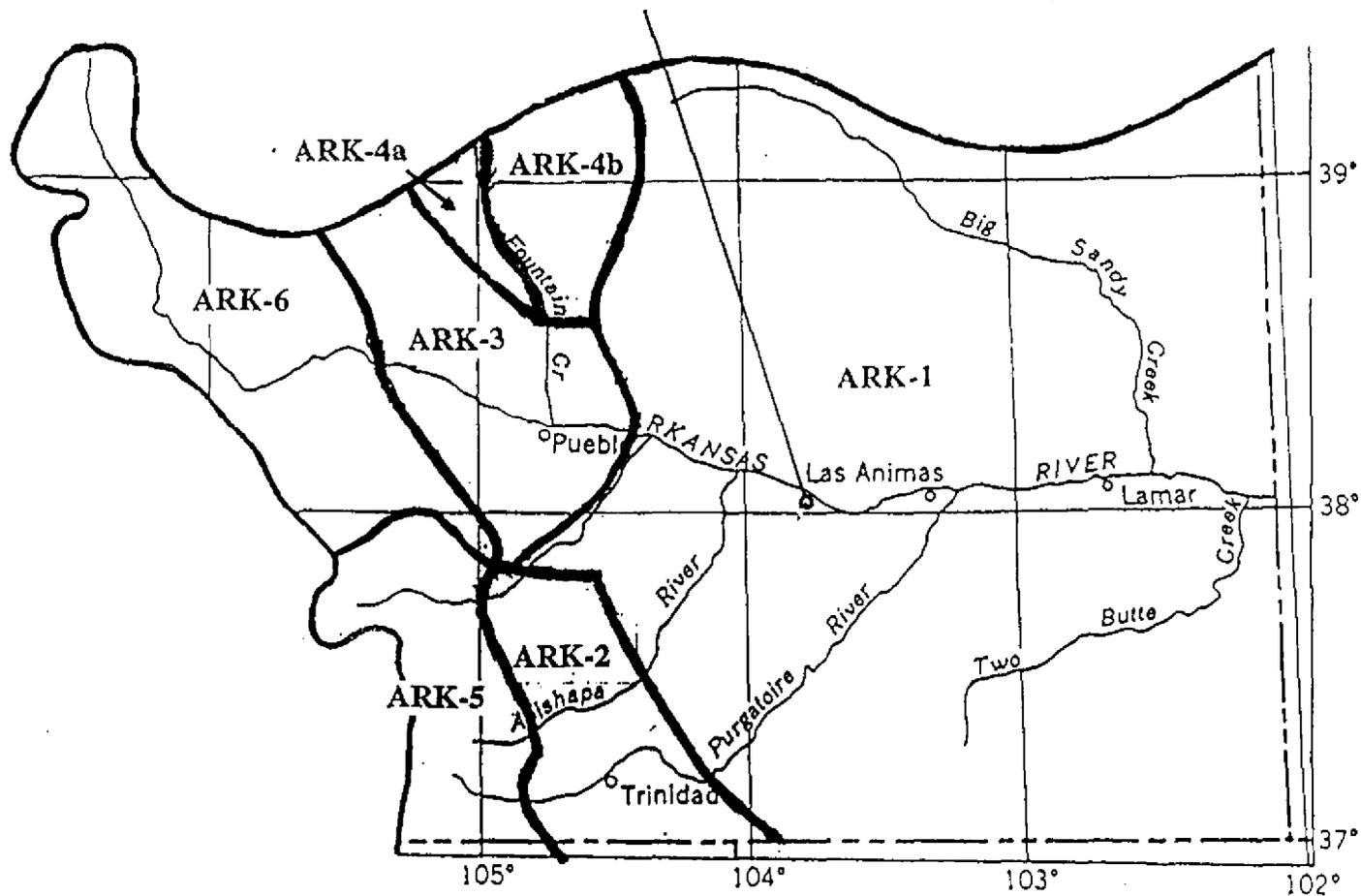
and enforcement of specific building code requirements, floodproofing of existing buildings, relocation of structures to safer sites, acquisition of floodplain (including buildings) for open space or other appropriate land uses, public education, flood warning systems and emergency response programs. New development is regulated in Walsh through a floodplain ordinance adopted on June 3, 1980. The ordinance contains provisions which are set forth in FEMA's model ordinance for approximate floodplains (Ordinance A).

Colorado communities interested in examining or pursuing possible floodplain management alternatives should contact the Colorado Water Conservation Board. Knowing the full range of alternatives can allow a community to develop a program that best addresses its particular flood and storm drainage situation.

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APPENDIX

THE CITY OF ROCKY FORD IS LOCATED IN SUBREGION ARK-1

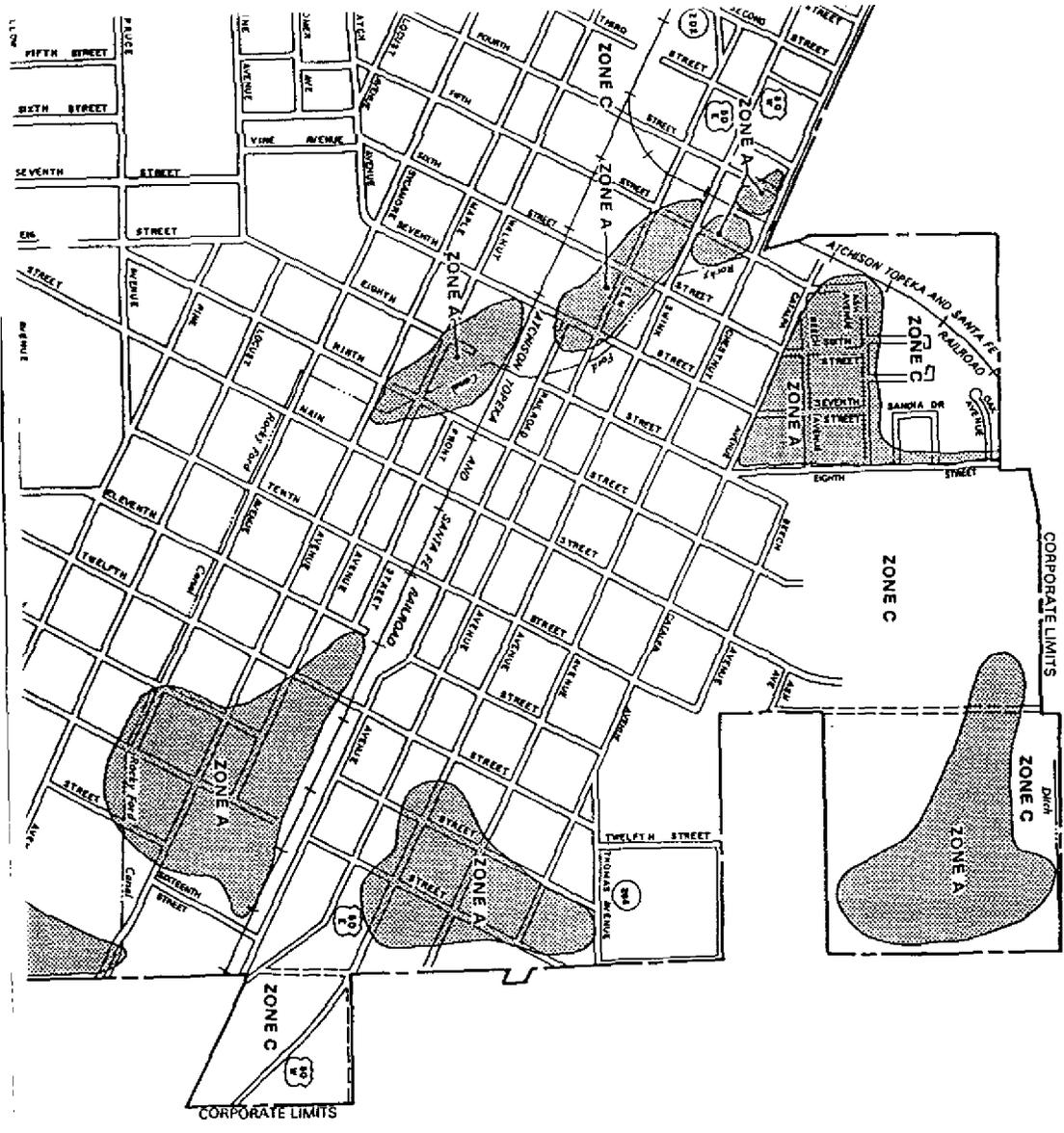


ARKANSAS RIVER BASIN WITH SUB-REGIONS

Determine if flood insurance is available in this community
contact your insurance agent, or call the National Flood Insurance
Program, at (800) 638-6620, or (800) 424-8872.



APPROXIMATE SCALE
600 0 600 FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP
CITY OF
ROCKY FORD
COLORADO
OTERO COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
080135 0001 J

EFFECTIVE DATE
JUNE 3, 198



U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION