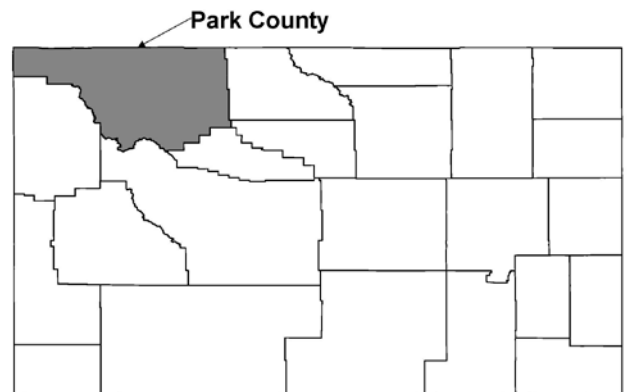


FLOOD INSURANCE STUDY



PARK COUNTY, WYOMING AND INCORPORATED AREAS

Community Name	Community Number
CODY, CITY OF	560038
MEETEETSE, TOWN OF	560039
PARK COUNTY UNINCORPORATED AREAS	560085
POWELL, CITY OF	560040



June 18, 2010



Federal Emergency Management
Agency
FLOOD INSURANCE STUDY NUMBER
56029CV000A

NOTICE TO

FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS report components.

Selected Flood Insurance Rate Map panels for this community contain information that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels (e.g., floodways, cross sections). In addition, former flood hazard zone designations have been changed as follows:

Old Zone(s)	New Zone
B	X
C	X

Initial Countywide FIS Effective Date: June 18, 2010

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FLOOD INSURANCE STUDY
PARK COUNTY and INCORPORATED AREAS, WYOMING

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) investigates the existence and severity of flood hazards in Park County and Incorporated Areas, and aids in the administration of the Nation Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

This FIS revises and updates previous FISs and Flood Insurance Rate Maps (FIRMs) for Park County and Unincorporated Areas, the Cities of Cody and Powell, and the Town of Meeteetse, Wyoming. The previous FIS information has been compiled into a single county wide FIS and will be used by Park County and Incorporated Areas to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP). The information will also be used by local and regional planners to further promote sound land use and floodplain development.

Please note that the Town of Frannie is geographically located in Park and Big Horn Counties. The portions in Park County are not included in this FIS report.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these federally supported studies are based. In such cases, the more restrictive criteria take precedence, and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgements

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This study was performed by ICON Engineering, Inc., for FEMA Region VIII, under contract number EMS-2001-CO-0070-TO15.

The digital base mapping information was provided by the USDS Data Gateway, Federal Center, 501 W. Felix St., Bldg.23, P.O. Box 6567, Fort Worth, Texas. It was downloaded from their website, www.datagateway.nrcs.usda.gov. These files were compiled by remote sensing methods and meet or exceed National Map Accuracy Standards at the original compilation scale of 1:12,000. The primary digital orthophotoquad (DOQ) is a 1-meter ground resolution, quarter-quadrangle (3.75-minute of latitude and 3.75 minute of longitude) image cast on the Universal Transverse Mercator Projection (UTM) on the North American Datum of 1983 (NAD83).

There were no previously printed Flood Insurance Studies for the Cities of Cody and Powell, the Town of Meeteetse, and the Unincorporated Areas of Park County.

1.3 Coordination

The results of this countywide study were reviewed at the final Consultation Coordination Officer (CCO) meeting held on September 23, 2008 at the Park County Courthouse in Cody, WY. The meeting was attended by representatives of FEMA, the State of Wyoming, FEMA contractors and local communities. All issues raised at that meeting have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Park County, Wyoming, including the Cities of Cody and Powell, the Town of Meeteetse, and the Unincorporated Areas of Park County, Wyoming.

2.2 Community Description

Park County is located in the northwest corner of Wyoming and is bordered on the north by Park County, Montana, and Carbon County, Montana; on the east by Bighorn and Washakie Counties; on the south by Hot Springs and Fremont Counties, and to the west by Teton County, Wyoming, and Gallatin County, Montana. The population was 25,786 at the 2000 census (Reference 1). The county seat is the City of Cody. The county contains the majority of Yellowstone National Park's total area, including more than 53% of its land area. The County is 6,969 square miles in total area.

The population of the City of Cody was 8,835 at the 2000 census (Reference 1). The town is at an elevation of 5,016 feet. The City of Cody is 9.5 square miles in total area.

The population of the Town of Powell was 5,373 at the 2000 census (Reference 1). The town is at an elevation of 4,365 feet, and there are 3.7 square miles of total land area.

The population of the Town of Meeteetse was 351 at the 2000 census (Reference 1). The town is at an elevation of 5,797 feet, and there are 0.8 square miles of total land area.

2.3 Principal Flood Problems

Information concerning the principal flood problems for Park County, Wyoming, are not known or were not documented.

2.4 Flood Protection Measures

No structures such as dams, levees, dikes, or other flood control devices were found to provide protection for the 1-percent-annual-chance flood event.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 1-percent-annual-chance flood (1 percent chance of annual occurrence) in any 50-year period is approximately 40 percent (4 in 10), and for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic methods used for the approximate floodplain delineations shown on the original Flood Hazard Boundary Maps (FHBM) for Park County are not available or were not documented.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in the county were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data Table in the FIS report. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in the FIS report in conjunction with the data shown on the FIRM.

Hydraulic methods used for the approximate floodplain delineations shown on the original Park County FHBM panels are not available or were not documented.

3.3 Vertical Datum

All FISs and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the finalization of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are being prepared using NAVD88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be reference to NGVD29. This may result in difference in Base Flood Elevations (BFEs) across the corporate limits between the communities.

For this countywide study, a vertical datum conversion was not completed since the streams were all approximate studies and no BFEs were calculated or shown on the DFIRM.

For more information on NAVD88, see the publication entitled, *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* (FEMA Publication FIA-20/June 1992), or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address <http://www.ngs.noaa.gov>).

Qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical and have a vertical stability classification of A, B, or C are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier.

Bench marks catalogued by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)
- Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutments)
- Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)
- Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line or steel witness post)

To obtain up-to-date elevation information on NGS bench marks shown on the FIRM, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of non-NGS monument elevations when using these elevations for construction or floodplain management purposes.

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with this FIS report and FIRM for this community. Interested individuals may contact FEMA to access this data.

4.0 FLOOD MANAGEMENT APPLICATIONS

The NFIP encourages state and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance flood elevations and delineations of the 1- and 0.2-percent-annual-chance floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing sound flood plain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, and Floodway Data table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community.

The approximate 1-percent-annual-chance flood boundaries for Park County were taken from the FHBMs and FIRMs for Park County.

The 1-percent-annual-chance floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 1). On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zone A). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

4.2 Floodways

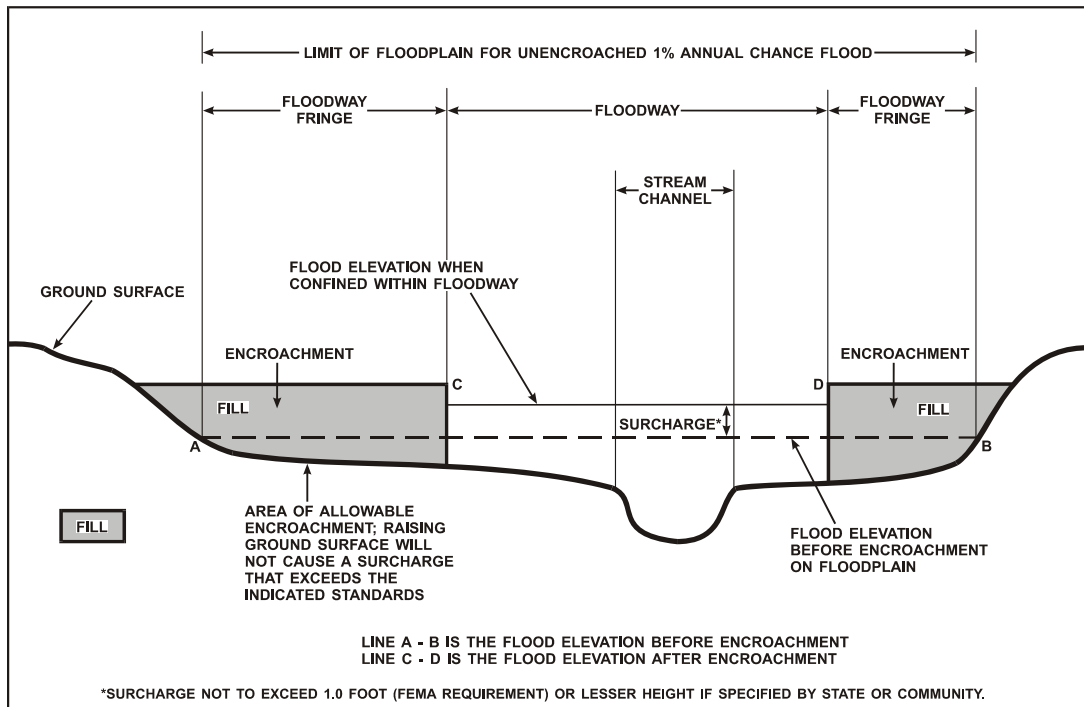
Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of the stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous

velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional studies.

No floodways have been mapped for Park County.

The area between the floodway and the 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe thus encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 1.

Figure 1 - Floodway Schematic



5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

The current FIRM presents flooding information for the entire geographic area of Park County, Wyoming. Previously, separate FIRMs and/or FHBMs were prepared for each identified flood prone incorporated community and for the Unincorporated Areas of Park County. Historical data relating to the maps was prepared for each community and is presented in Table 1.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
City of Cody	6/18/2010	-	6/18/2010	-
Town of Meeteetse	11/22/1974	10/3/1975	10/1/1986	-
Park County Unincorporated Areas	4/25/1978	8/31/1982	8/1/1987	-
City of Powell	6/18/2010	-	6/18/2010	-

T A B L E 1	FEDERAL EMERGENCY MANAGEMENT AGENCY PARK COUNTY, WY AND INCORPORATED AREAS	COMMUNITY MAP HISTORY
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7.0 OTHER STUDIES

FHBMs were previously published for the Unincorporated Areas of Park County and for the Town of Meeteetse. In 1986 and 1987, the FHBMs for Meeteetse and Park County, respectively, were converted to FIRMs via conversion letter. The FIRMs of this study supersede the previous FHBMs and FIRMs.

This FIS report either supersedes or is compatible with all previous studies on streams studied in this report and should be considered authoritative for purposes of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, Federal Emergency Management Agency, Denver Federal Center, Building 710, Box 25267, Denver, Colorado 80225-0267.

9.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Department of Commerce, Bureau of the Census, 2000 Census, <http://factfinder.census.gov/>
2. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Maps, Park County, Wyoming, Unincorporated Areas, August 31, 1982.
3. Federal Emergency Management Agency, Flood Insurance Rate Maps, Park County, Wyoming, Unincorporated Areas, August 1, 1987.
4. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Maps, Town of Meeteetse, Park County, Wyoming, October 3, 1975.
5. Federal Emergency Management Agency, Flood Insurance Rate Maps, Town of Meeteetse, Park County, Wyoming, October 1, 1986.