



Oregon

Theodore R. Kulongoski, Governor

Department of Land Conservation and Development

635 Capitol Street, Suite 150
Salem, OR 97301-2540
(503) 373-0050
Fax (503) 378-5518
www.lcd.state.or.us

NOTICE OF ADOPTED AMENDMENT

December 11, 2007



TO: Subscribers to Notice of Adopted Plan or Land Use Regulation Amendments

FROM: Mara Ulloa, Plan Amendment Program Specialist

SUBJECT: Morrow County Plan Amendment
DLCD File Number 002-07

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. Copies of the adopted plan amendment are available for review at DLCD offices in Salem, the applicable field office, and at the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: December 26, 2007

This amendment was submitted to DLCD for review prior to adoption with less than the required 45-day notice. Pursuant to ORS 197.830 (2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

***NOTE: THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAN IT WAS MAILED TO DLCD. AS A RESULT YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE DATE SPECIFIED ABOVE.**

Cc: Doug White, DLCD Community Services Specialist
Jon Jinings, DLCD Regional Representative
Mark Darienzo, Dlcd Flood Map Modernization Program Coordinator
Carla McLane, Morrow County

<paa> ya/email

FORM 2

DEPT OF

DLCD NOTICE OF ADOPTION

This form must be mailed to DLCD within 5 working days after the final decision
per ORS 197.610, OAR Chapter 660 - Division 18

DEC 07 2007

(See reverse side for submittal requirements)

LAND CONSERVATION
AND DEVELOPMENT

Jurisdiction: Morrow County

Local File No.: AZ-001-07
AC(M)-001-0.7
(If no number, use none)

Date of Adoption: 11/28/2007
(Must be filled in)

Date Mailed: 12/5/2007
(Date mailed or sent to DLCD)

Date the Notice of Proposed Amendment was mailed to DLCD: 6/14/07

☐ Comprehensive Plan Text Amendment

☒ Comprehensive Plan Map Amendment

☒ Land Use Regulation Amendment

☐ Zoning Map Amendment

☐ New Land Use Regulation

☐ Other: _____
(Please Specify Type of Action)

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached."

Amended Morrow County Zoning Ordinance Section 3.100 Flood HAZARD
Overlay Zone to meet current FEMA Requirements. Also adopted updated FEMA
FIRM maps

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "Same." If you did not give notice for the proposed amendment, write "N/A."

Same

Plan Map Changed from: 1981 & 1984 FIRMS to 2007 FIRMS

Zone Map Changed from: NA to N/A

Location: Other Creeks & Drainage
Willow Creek & tributaries, Columbia River Areas Involved: Unknown

Specify Density: Previous: N/A New: N/A

Applicable Statewide Planning Goals: GOAL 7

Was an Exception Adopted? Yes: ☐ No: ☒

DLCD File No.: 002-07

Did the Department of Land Conservation and Development receive a notice of Proposed

Amendment **FORTY FIVE (45) days prior to the first evidentiary hearing.** Yes: X No:

If no, do the Statewide Planning Goals apply. Yes: No:

If no, did The Emergency Circumstances Require immediate adoption. Yes: No:

Affected State or Federal Agencies, Local Governments or Special Districts: FEMA, DLCD,
Morrow County Cities (UGB), Port of Morrow

Local Contact: Carla McLane Area Code + Phone Number: 541 922 4624

Address: PO Box 40 City: Irrigon

Zip Code+4: 97844 Email Address: cmclane@co.morrow
.or.us

ADOPTION SUBMITTAL REQUIREMENTS

This form must be mailed to DLCD within 5 working days after the final decision
per ORS 197.610, OAR Chapter 660 - Division 18.

1. Send this Form and TWO (2) Copies of the Adopted Amendment to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

2. Submit **TWO (2) copies** the adopted material, if copies are bounded please submit **TWO (2) complete copies** of documents and maps.
3. Please Note: Adopted materials must be sent to DLCD not later than **FIVE (5) working days** following the date of the final decision on the amendment.
4. Submittal of this Notice of Adoption must include the text of the amendment plus adopted findings and supplementary information.
5. The deadline to appeal will not be extended if you submit this notice of adoption within five working days of the final decision. Appeals to LUBA may be filed within **TWENTY-ONE (21) days** of the date, the "Notice of Adoption" is sent to DLCD.
6. In addition to sending the "Notice of Adoption" to DLCD, you must notify persons who participated in the local hearing and requested notice of the final decision.
7. **Need More Copies?** You can copy this form on to 8-1/2x11 green paper only ; or call the DLCD Office at (503) 373-0050; or Fax your request to: (503) 378-5518; or Email your request to Mara.Ulloa@state.or.us - ATTENTION: PLAN AMENDMENT SPECIALIST.

BEFORE THE MORROW COUNTY COURT
OF MORROW COUNTY

AN ORDINANCE ADOPTING THE FEDERAL
EMERGENCY MANAGEMENT
ADMINISTRATION (FEMA) FLOOD
INSURANCE RATE MAP (FIRM) TO BE PART
OF THE MORROW COUNTY
COMPREHENSIVE PLAN MAP AND TO
ADOPT AMENDMENTS TO THE FLOOD
HAZARD OVERLAY ZONE

COUNTY ORDINANCE
NO. MC - 03 - 2007

WHEREAS, ORS 203.035 authorizes Morrow County to exercise authority within the county over matters of County concern; and

WHEREAS, Morrow County adopted a Comprehensive Land Use Plan which was acknowledged by the Land Conservation and Development Commission on January 15, 1986; and

WHEREAS, the Federal Emergency Management Administration (FEMA) adopted new Flood Insurance Rate Maps (FIRMs) for Morrow County and requested Morrow County adopt those new FIRMs; and

WHEREAS, FEMA also requested that Morrow County update our Flood Hazard Overlay Zone to correspond with the new FIRMs and meet current Federal regulations; and

WHEREAS, the Morrow County Planning Commission held a hearing to review the request on July 31, 2007, at the Morrow County School District Building in Lexington, Oregon, and on August 28, 2007, at the North Morrow County Annex Building in Irrigon, Oregon; and

WHEREAS, the Morrow County Planning Commission unanimously recommended approval of the request and adopted Final Planning Commission Findings of Fact; and

WHEREAS, the Morrow County Court held a hearing to consider the recommendation of the Morrow County Planning Commission on September 26, 2007, at the Morrow County Courthouse in Heppner, Oregon; and

WHEREAS, the Morrow County Court did consider the testimony and evidence presented to them;

NOW THEREFORE THE COUNTY COURT OF MORROW COUNTY ORDAINS AS
FOLLOWS:

Section 1 Title of Ordinance:

This Ordinance shall be known, and may be cited, as the "FEMA FIRM and Flood Hazard Overlay Zone 2007 Update."

Section 2 Affected Documents

1. FEMA has provided an electronic copy of the FEMA FIRMs with an effective date of December 18, 2007, which have been printed on standard paper and are attached as Exhibit 1
2. FEMA has provided an electronic copy of the Flood Insurance Study with an effective date of December 18, 2007, which has been printed on standard paper and is attached as Exhibit 2.
3. Section 3 Use Zones Article 3.100 Flood Hazard Overlay Zone of the Morrow County Zoning Ordinance, amended by this action, is attached as Exhibit 3.

Section 3 Effective Date

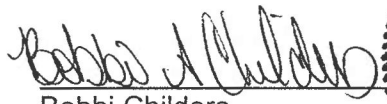
This ordinance shall be effective on December 18, 2007, the Federal effective date.

Date of First Reading: November 21, 2007

Date of Second Reading: November 28, 2007

DONE AND ADOPTED BY THE MORROW COUNTY COURT THIS 28th DAY OF NOVEMBER, 2007.

ATTEST:

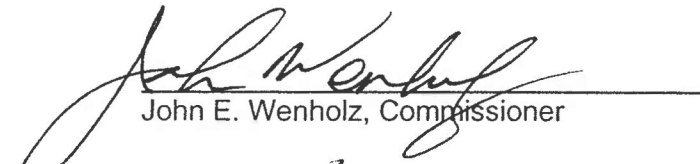

Bobbi Childers
County Clerk



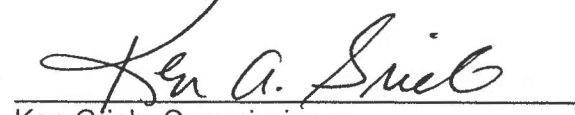
MORROW COUNTY COURT:


Terry K. Tallman, Judge

APPROVED AS TO FORM:


John E. Wenzel, Commissioner


Ryan M. Swinburnson
County Counsel


Ken A. Grieb, Commissioner



PLANNING DEPARTMENT

P. O. Box 40 • Irrigon, Oregon 97844
(541) 922-4624 or (541) 676-9061 x 5503
FAX: (541) 922-3472

NOTICE OF DECISION

December 5, 2007

Morrow County Comprehensive Plan Map and Zoning Ordinance Amendment

This notice is to inform you that on November 28, 2007, the Morrow County Court adopted Ordinance Number MC-03-2007 amending the Morrow County Comprehensive Plan Map and Zoning Ordinance. Specifically Morrow County adopted Flood Insurance Rate Maps depicting the affected property in Morrow County and the associated Flood Insurance Study, both provided by the Federal Emergency Management Administration. Also amended was Section 3 Use Zones Article 3.100 Flood Hazard Overlay Zone of the Morrow County Zoning Ordinance incorporating requirements of the Federal Emergency Management Administration.

The requirements for filing an appeal of the decision to the Land Use Board of Appeals (LUBA) are set forth in ORS 197.830 to 197.845. State law and associated administrative rules promulgated by LUBA describe the period within which any appeal must be filed and the manner in which such an appeal must be commenced. Presently, ORS 197.830(9) requires that a notice of intent to appeal plan or land use regulation amendments adopted pursuant to ORS 197.610 to 197.625 "shall be filed not later than 21 days after notice of the decision sought to be reviewed is mailed or otherwise submitted to parties entitled to notice under ORS 197.615." Notice of this decision was mailed on December 5, 2007. The deadline to appeal is December 26, 2007.

Cordially,

A handwritten signature in cursive script, appearing to read "Carla McLane".

Carla McLane
Planning Director

I certify that on December 5, 2007, I mailed a copy of this Notice of Decision by first class mail to all persons entitled to notice of this decision.

A handwritten signature in cursive script, appearing to read "Marked".

Signature

12-5-07

Date

Year	Population	Population 15 years and over	Population 18 years and over	Population 21 years and over	Population 25 years and over	Population 30 years and over	Population 35 years and over	Population 40 years and over	Population 45 years and over	Population 50 years and over	Population 55 years and over	Population 60 years and over	Population 65 years and over	Population 70 years and over	Population 75 years and over	Population 80 years and over	Population 85 years and over	Population 90 years and over	Population 95 years and over	Population 100 years and over
1950	1,000,000	400,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	5,000	2,000	1,000	500	200	100	50	20
1955	1,100,000	450,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	5,000	2,000	1,000	500	200	100	20
1960	1,200,000	500,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	5,000	2,000	1,000	500	200	20
1965	1,300,000	550,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	5,000	2,000	1,000	500	20
1970	1,400,000	600,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	5,000	2,000	1,000	20
1975	1,500,000	650,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	5,000	2,000	20
1980	1,600,000	700,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	5,000	20
1985	1,700,000	750,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	10,000	20
1990	1,800,000	800,000	700,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20,000	20
1995	1,900,000	850,000	750,000	700,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	30,000	20
2000	2,000,000	900,000	800,000	750,000	700,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	50,000	20
2005	2,100,000	950,000	850,000	800,000	750,000	700,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	70,000	20
2010	2,200,000	1,000,000	900,000	850,000	800,000	750,000	700,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	100,000	20
2015	2,300,000	1,050,000	950,000	900,000	850,000	800,000	750,000	700,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	150,000	20
2020	2,400,000	1,100,000	1,000,000	950,000	900,000	850,000	800,000	750,000	700,000	650,000	600,000	550,000	500,000	450,000	400,000	350,000	300,000	250,000	200,000	20

[illegible]

MAP DATES

This final issue displays the fact that the EARTHlink page at the top does not contain the information you may not be seeking. For a detailed comparison in which EARTHlink is compared to the "new" map data, visit our homepage at www.earthlink.com. For more information on visiting the EARTHlink Service Center website at www.earthlink.com or by calling the Map Service Center at 1-800-564-6616.

MOTIV. TO. USE.

Future revisions to this FIRM index will only be allowed to: correct errors that are located on the FIRM patch being revised. This FIRM index will not be revised to reflect changes in the FIRM patch data for FIRM patch dates subsequent to December 18, 2007 or earlier. Please refer to the MOST RECENT FIRM PANEL DATE column in the List of Companies page to determine the most recent FIRM index date to which you should refer.

RELEVANT DATA

From elsewhere in this issue are referenced by The North American Vertical Datum of 1988. These four editions must be compiled to produce a ground elevation referred to the same vertical datum. For example, regarding contouring, Leaman and Taylor's "Geodetic Vertical Datum of 1929 and the English Vertical Datum of 1888," state that "National Geographic Society and the International Geophysical Survey" were the agencies

Also information barriers
 NOAA, NODIST
 National Geographic Society
 SLAC, J. 07-02
 1315 Eastwood Highway
 Silver Spring, Maryland 20910-2062
 (301) 714-3242
 (301) 714-3772 (fax)

BASET WAS SCORING

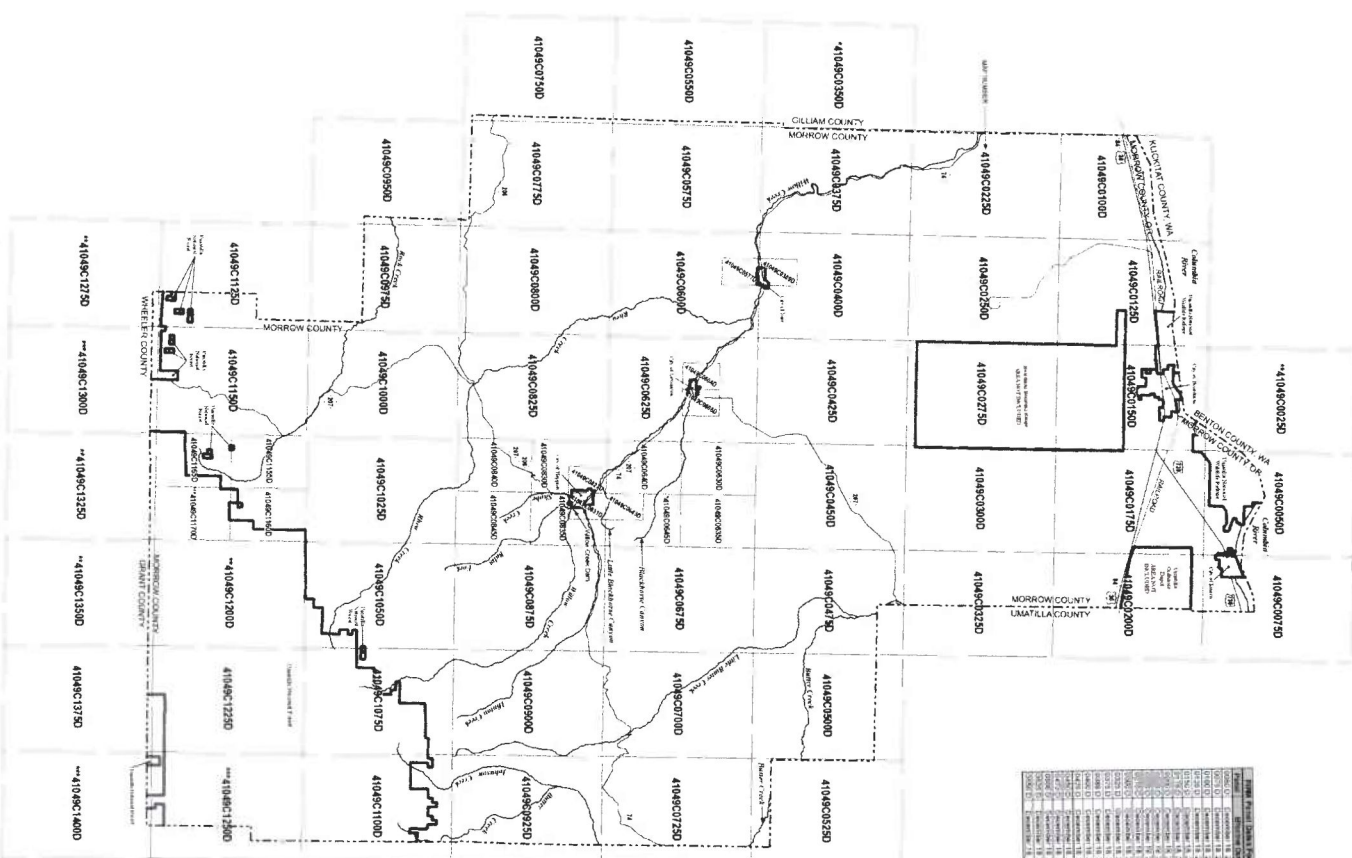
[illegible]

Exhibit 1

NFP

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
MORROW COUNTY,
OREGON
AND INCORPORATED AREAS

MAP INDEX

MAP LISTING OF COMMUNITIES (FIRM)

MAP INDEX

MAP NUMBER
1000-OR-000A

EFFECTIVE DATE
OCTOBER 16, 2007

Federal Emergency Management Agency

Businesses and industry are creating new products and processes that are more efficient and effective, and that are more environmentally friendly. These new products and processes are being used to improve the quality of life and the environment. For example, the use of renewable energy sources such as wind, solar, and hydro power is increasing. The use of recycled materials in construction and manufacturing is also increasing. The use of biotechnology in agriculture and medicine is also increasing. The use of nanotechnology in electronics and medicine is also increasing. The use of artificial intelligence in business and industry is also increasing. The use of robotics in manufacturing is also increasing. The use of virtual reality in education and entertainment is also increasing. The use of 3D printing in manufacturing is also increasing. The use of cloud computing in business and industry is also increasing. The use of big data in business and industry is also increasing. The use of social media in business and industry is also increasing. The use of mobile devices in business and industry is also increasing. The use of wearable devices in business and industry is also increasing. The use of smart homes in business and industry is also increasing. The use of smart cities in business and industry is also increasing. The use of smart grids in business and industry is also increasing. The use of smart transportation in business and industry is also increasing. The use of smart agriculture in business and industry is also increasing. The use of smart manufacturing in business and industry is also increasing. The use of smart healthcare in business and industry is also increasing. The use of smart education in business and industry is also increasing. The use of smart entertainment in business and industry is also increasing. The use of smart infrastructure in business and industry is also increasing. The use of smart energy in business and industry is also increasing. The use of smart water in business and industry is also increasing. The use of smart waste in business and industry is also increasing. The use of smart security in business and industry is also increasing. The use of smart defense in business and industry is also increasing. The use of smart justice in business and industry is also increasing. The use of smart government in business and industry is also increasing. The use of smart society in business and industry is also increasing. The use of smart world in business and industry is also increasing.

The study shows that a balanced diet containing vitamins, minerals and essential fatty acids can reduce the risk of heart disease. The researchers warn that those who do not eat enough of these nutrients may be at a higher risk of developing heart disease. The study also found that a diet high in saturated fats and cholesterol can increase the risk of heart disease. The researchers recommend that people should eat a diet that is low in saturated fats and cholesterol, and high in fruits, vegetables, and whole grains. They also recommend that people should exercise regularly and avoid smoking.

This map is for use in administering the National Flood Insurance Program. It does not necessarily certify that areas subject to flooding, particularly from local drainage sources of small size. The community map preparator should be consulted for possible updated or additional flood hazard information.

[illegible][illegible]

The population used in the preparation of the map was Universal Transverse Mercator (UTM) zone 18Q, datum WGS 84, projected UTM Easting 653,000 m. Eridemas for each segment, segmented population of 1000 m, were calculated. Eridemas for adjacent lineaments are shown in light grey, whereas the eridemas for the lineaments are shown in dark grey. The lineaments are shown in black. The lineaments are shown in black. The lineaments are shown in black.

Please direct all correspondence to the North American Vertical Datum of 1988 (NAVD83) project office at the National Geospatial-Intelligence Agency, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. For information on current status of NAVD83 conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geospatial Survey website at <http://www.ngsa.mil/gov/> or contact the National Geospatial Survey at the following address:

NCS Information Services
NCAA UNIC632
Telecom Support Survey

SSM&C 3, #9020
1315 East-West Highway
Silver Spring, MD 20910-2602

To obtain current elevation, description, outline location information for specific locations on this map, please contact the Information Systems Branch of the National Ocean Service at (202) 713-2942 or visit the website at <http://www.nautical.gov>

Base Map Information shown on this chart was derived from multiple sources. This map has been provided in digital form by the Chicago Geological Engineering and Construction (GEC). This information was compiled from many local sources and is not intended to be used as a substitute for official hydrographic information provided by the National Ocean Service Hydrographic Survey (USNOS).

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIPd for this jurisdiction. The floodway and floodway boundaries were transferred from the previous FIPd may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on this map.

Corporate labels shown on this map are based on the best data available at the time of publication. Because changes due to acquisitions or divestitures may occur, please refer to the company's annual report for the most current information.

Contact the FEMA Map Service Center at 1-800-358-0616 for information on available products associated with this Flood Insurance Study, and/or previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of the map. The FEMA Map Service Center may also be reached by FAX at 1-800-358-0620 and its website at <http://mssc.fema.gov/>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-282-6344 or visit the FEMA website at <http://nrmc.fema.gov>.



**SPECIAL FLOOD HAZARD AREAS (SFHA) SUBJECT TO INUNDATION
BY THE 1% ANNUAL CHANCE FLOOD**

TABLE A
The Mean F and F standard error for the 1% annual chance flood. Areas at Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Mean Flood Elevation is the water surface elevation of the 1% annual chance flood

[illegible][illegible]

ROADWAY AREAS IN ZONE A2

OTHER FLOOR AREAS

Areas of 0.25 sq. ft. or less, e.g., areas of 1/4 sq. ft. around doors, floor at average height of less than 1 foot, or any drainage areas from 1/4 sq. ft. to 1 sq. ft. are not subject to the 1/4 sq. ft. rule.

OTHER AREAS

Approximately 1% of the population is affected by genetic defects in the following areas:

- Zellweger Syndrome
- Phenylketonuria
- Galactosemia
- Maple Syrup Urine Disease
- Homocystinuria
- Albinism
- Phenylthiocarbamide (PTC) sensitivity
- Albinism
- Phenylthiocarbamide (PTC) sensitivity

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPMA)

CBRS areas and OPMA are primarily located north or adjacent to State of Oregon dunes.

18. 2002 and 2003 checklist inventories

[illegible][illegible]

From within the
 "Target" box
 (being double-clicked) reference to "North Center" in "Domain of
 [SIC] (SIC2.B3)"
 [2000-United Universal "Universal" Developer grid version 11]

0000000 FT
MC3810
#M1 5
5000 lead and steel Chicago 50000 range compass system, North
to 17502000 3601 (1) center (center of 1000 ft)
Range maps (part registration in 1000 ft) (part of 1000 ft)
part of 1000 ft

MAIL RECOGNITION
equal to being of legal age in all states
EFFECTIVE DATE OF SIGNATURE
GOOD INSURANCE RATE MAIL
October 1, 1997

64 EFFECTIVE DATE: 01/01/2008 01:00 PM

Map Scale 1" = 2000'

1000 0 2000 4000

Panel 01000

FIRM
FLOOD INSURANCE RATE MAP

**MORROW COUNTY,
OREGON
AND INCORPORATED AREAS**

PANEL 0100 OF 1400
SEE MAP SHEET FOR PANEL LAYOUT
CONTAINS: MINOR SETS
COMPLETION

NOAH ON CLARK
"RECOMMENDED AREA" 10713 C-000

FLOOD

MAP NUMBER
41069C01000
EFFECTIVE DATE

NAT
DECEMBER 11, 2007
Federal Emergency Management Agency

The *rule* is to be *assessing the total risk reduction*. Program *desires* or *necessary* *cost* *is* *not* *related* to *locking* *reduction* *from* *the* *baseline* *to* *the* *desired* *level* *of* *risk*. The *community* *may* *imposed* *be* *on* *the* *operator* *to* *provide* *costs* *to* *achieve* *total* *risk* *reduction*.

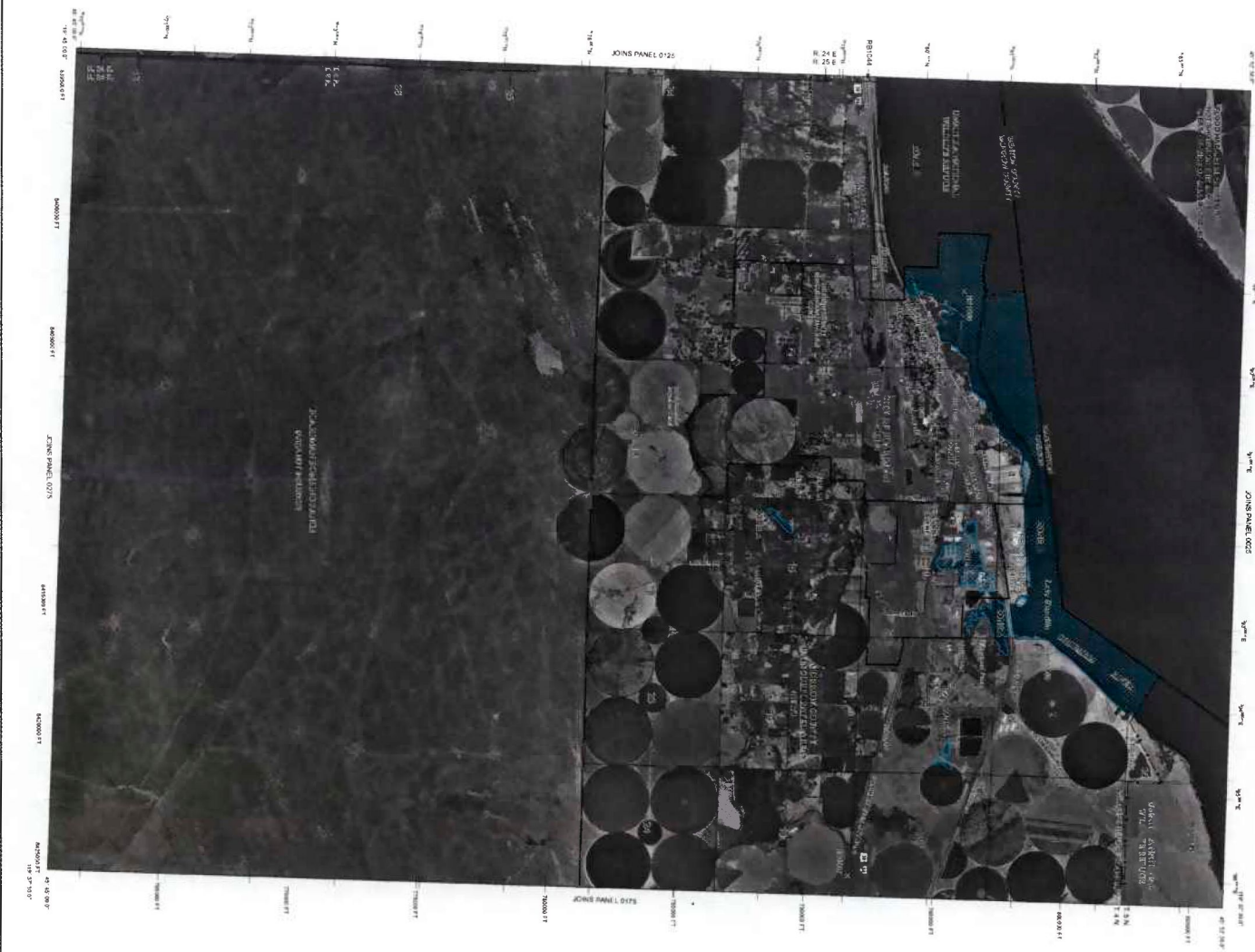
Coastal Sea Food Imports refers to the total gross value, measured in U.S. dollars, of all food imports from non-U.S. countries, excluding imports from non-U.S. countries that are landlocked. Imports from non-U.S. countries that are landlocked are excluded from this variable because they are not subject to the same trade policies as imports from non-U.S. countries that are coastal. Imports from non-U.S. countries that are coastal are included in this variable because they are subject to the same trade policies as imports from non-U.S. countries that are landlocked. Imports from non-U.S. countries that are coastal are included in this variable because they are subject to the same trade policies as imports from non-U.S. countries that are landlocked.

[illegible]

Natural product library
1315 Eastway Ave
P.O. Box 10000
St. Louis, MO 63110-1000
Tel: 314/772-3000
Fax: 314/772-3000
http://www.gsk.com

To obtain current version, click on "Product Information" for search results. You can also click on "Product Information" for the full text of the abstracts. The abstracts are available in HTML or PDF format. The full text of the abstracts is available in HTML or PDF format. The full text of the abstracts is available in HTML or PDF format.

Basic Data Information shown in this table and several other tables are available in the "Basic Data" section of the "Product Information" page. The information is organized into several sections: "Basic Data", "Chemical Structure", "Biological Activity", "Pharmacokinetics", "Toxicology", "Safety", "References", and "Other Information". The information is organized into several sections: "Basic Data", "Chemical Structure", "Biological Activity", "Pharmacokinetics", "Toxicology", "Safety", "References", and "Other Information".

[illegible][illegible]

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO FLOODATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood most likely to be caused by being equated or exceeded in any given year. The Special Flood Hazard areas are the areas subject to flooding by the 1% annual chance flood. Areas at Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Special Flood Elevation is the average surface elevation of the 1% annual chance flood.

Zone A
No base flood elevation information.

[illegible]

	FLOODPLAIN AREAS IN ZONE A2 The floodplain is the category of a subcategory are adjacent to the water and the land is subject of the flood. The floodplain is the area of the water body that is subject to the flood. The floodplain is the area of the water body that is subject to the flood. The floodplain is the area of the water body that is subject to the flood.
	OTHER FLOODPLAIN AREAS The floodplain is the category of a subcategory are adjacent to the water and the land is subject of the flood. The floodplain is the area of the water body that is subject to the flood. The floodplain is the area of the water body that is subject to the flood.
	OTHER AREAS The floodplain is the category of a subcategory are adjacent to the water and the land is subject of the flood. The floodplain is the area of the water body that is subject to the flood. The floodplain is the area of the water body that is subject to the flood.
	COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS The floodplain is the category of a subcategory are adjacent to the water and the land is subject of the flood. The floodplain is the area of the water body that is subject to the flood. The floodplain is the area of the water body that is subject to the flood.

[illegible]

* Referenced to the March 2000 survey, reported results of 1998
 survey are in parentheses.
 City or town has
 1. Financial data
 2. 1990-1999 population (estimated) or 1990 Census of 100,000
 3. 1990-1999 average annual precipitation (inches) or 30"-40"
 4. 1990-1999 average annual temperature (in degrees Fahrenheit)
 5. 1990-1999 average annual snowfall (inches) or 30"-40"
 6. 1990-1999 average annual wind speed (in miles per hour) or 10-15
 7. 1990-1999 average annual humidity (in percent) or 60-70%
 8. 1990-1999 average annual rainfall (in inches) or 30"-40"
 9. 1990-1999 average annual number of days with precipitation or 100-120
 10. 1990-1999 average annual number of days with snow or 10-20
 11. 1990-1999 average annual number of days with ice or 10-20
 12. 1990-1999 average annual number of days with fog or 10-20
 13. 1990-1999 average annual number of days with hail or 10-20
 14. 1990-1999 average annual number of days with tornado or 10-20
 15. 1990-1999 average annual number of days with earthquake or 10-20
 16. 1990-1999 average annual number of days with volcanic activity or 10-20
 17. 1990-1999 average annual number of days with drought or 10-20
 18. 1990-1999 average annual number of days with flood or 10-20
 19. 1990-1999 average annual number of days with wildfire or 10-20
 20. 1990-1999 average annual number of days with other weather event or 10-20

[illegible]

PANEL 0150 OF 1400
 (SEE ALSO INDEX FOR PANEL LAYOUT)

CONTINUE	COMPOSITE	NUMBER	PANEL	OFFICE
Continued 2nd of	01513	0152	0	0
(SEE ALSO INDEX FOR PANEL LAYOUT)				
Continued 3rd of	01513	0153	0	0

NATIONAL FLOOD

Area 11-100-74, Map 100-74-1, Community Number 11100
This map is a reproduction of the original map on file with the
Federal Emergency Management Agency, Washington, D.C.
The map is a reproduction of the original map on file with the
Federal Emergency Management Agency, Washington, D.C.

MAP NUMBER
4106C01500

EFFECTIVE DATE
DECEMBER 18, 2007

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily create an area subject to flooding, particularly from sea level or other sources of small scale. The community map responsibility should be obtained for possible updated or additional flood hazard information.

the FRSI and the Faculty Club under the aegis of the Student Government. The FRSI has been the focal mechanism for the food management program, and has coordinated the various school-wide activities. The FRSI has also been responsible for the various programs and has avoided the use of the school for food management. The FRSI has been the focal mechanism for the food management program, and has coordinated the various school-wide activities. The FRSI has also been responsible for the various programs and has avoided the use of the school for food management. The FRSI has been the focal mechanism for the food management program, and has coordinated the various school-wide activities. The FRSI has also been responsible for the various programs and has avoided the use of the school for food management.

[illegible]

Food elevations on this map are referenced to the North American Vertical Datum of 1988. These food elevations may be compared to structure and ground elevations referenced to the same vertical datum. For information regarding coordination between the National Coastal Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Coastal Survey website at <http://www.ngs.noaa.gov> or contact the National Coastal Survey at the following address:

NCS Information Services
NOAA/NANO112
National Climatic Survey
SSAC 3 #2202
1315 East-West Highway
Silver Spring, MD 20910-3282

¹³ For other current deviation, description, and/or location information, see benchmarks shown on this map; please contact the Information Services Branch of the National Geographic Society at (202) 773-5262 or <http://www.ngs.noaa.gov>.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The boundaries were derived from aerial photography taken between 1980 and 1984.

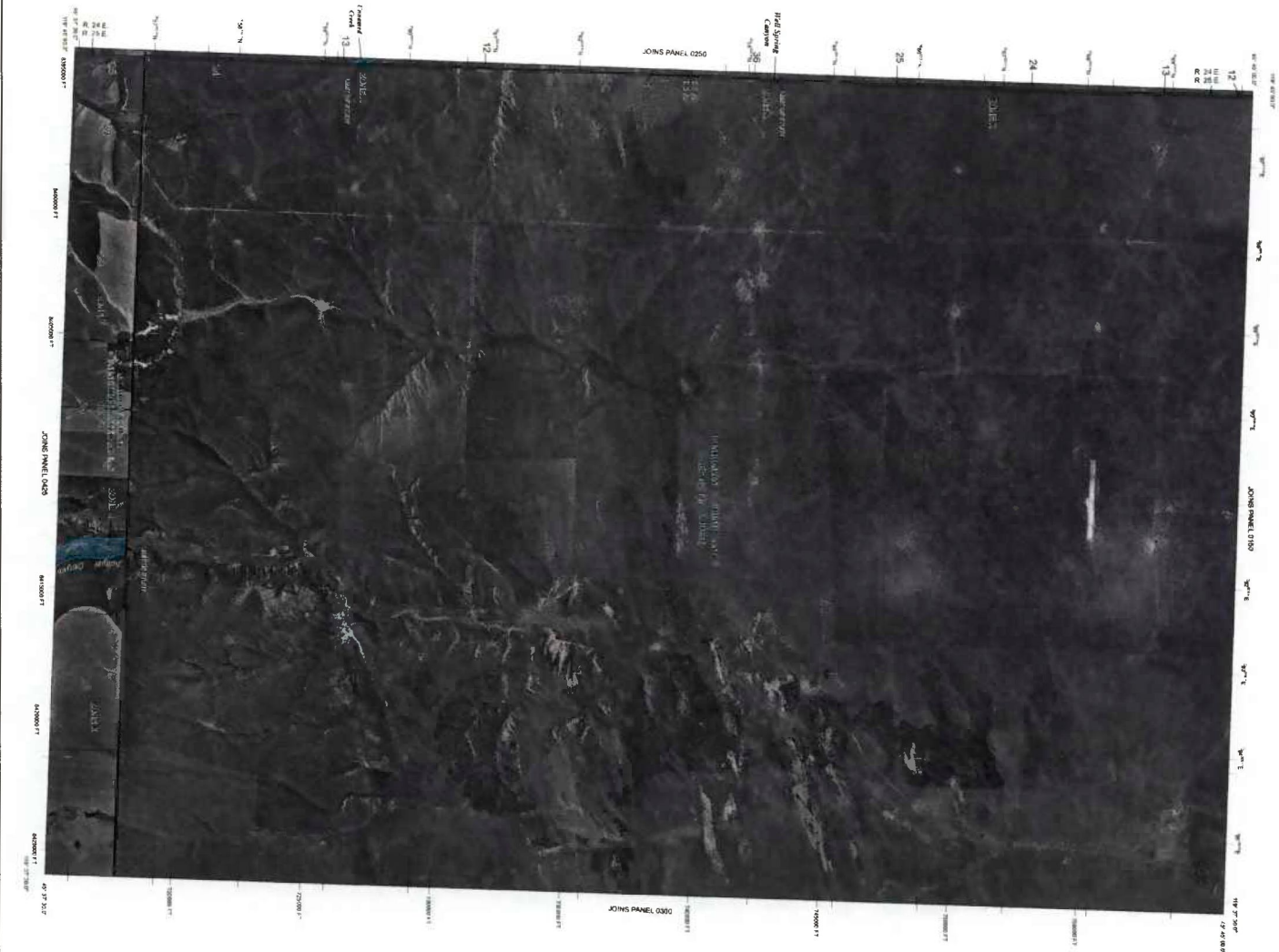
The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The boundaries were derived from aerial photography taken between 1980 and 1984.

Corporate levels shown on this map are based on the best data available at the time of publication. Because changes due to acquisitions or divestitures may occur, this information may not be current on this map.

Please refer to the *SPOTCHECK* publication, *Map Index* for an overview map of the county showing the layout of map panels. Community map locational addresses, and a Listing of Communities Within confining National Flood Insurance Program, and for each community as well as a listing of the streets on which each community is located.

If you have questions about this map or questions concerning the National Flood

The "profile base line," depicted on this map, represent the hydraulic modeling base line(s) that match the flood profiles in the FIS report. As a result of increased hydrologic data, the "profile base line," is shown closer to the design significantly from the channel centerline or deeper outside the SRHA.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INFORMATION
BY THE ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, M, X, Y, and V and VE. The base flood elevation is the mean water elevation of the 1% annual chance flood.

Zone	Soil description
Zone A	No Stone 1 and 2 (average estimated)
Zone A2	Base First (Estimated average)
Zone A3	1 and 2 (average of 1 to 2) Soil 1 (average estimated)
Zone A4	1 and 2 (average of 1 to 2) Soil 1 (average estimated)
Zone A5	1 and 2 (average of 1 to 2) Soil 1 (average estimated)

relationships: two areas of altered brain function, which are also differentially affected by the two types of stressors.

ZONE V
Coastal flood zone in the vicinity of the coastal protection dyke. No flood protection is required.

ZONE VI
Coastal flood zone in the vicinity of the coastal protection dyke. Flood protection is required.

FLODWAY AREAS IN ZONE III

OTHER IN-FOOD AID:

Asks if the animal owner's "other" source of 1% animal blood feed is an average of 100% animal blood feed, 50% animal blood feed, 25% animal blood feed, or made mostly of human blood. (5, 10, 25, and 50% animal blood)

OTHER AREAS

FORM X
FORM D
FORM B

Area statements to be outside the 24-hour Office Protection Area in which they have no involvement, but within the 24-hour Office Protection Area in which they have involvement.

☐ **OTHEPANTISE PROTECTED AREAS (OPAs)**
 (OPAs within the CPAs are normally located either on adjacent littoral areas or rivers.
 It is essential to change floodplain boundaries
 of the area a change floodplain boundaries

Fanning boundary
Zone D boundary
CMBs at OPA boundary

513
 (L 1275)
 Since "Good" stands on the east side of the "bad" direction in "Yes" -
 Since "Bad" stands on the west side of the "good" direction
 in the 2074:6 position in "Yes"
 * Adapted to 2074:6 North American Vertical Dialects of 1968
 Copyright written here

Geographic coordinates referred to North American Datum of 1983 (NAD 83)

1900-mm diameter $\times$ 75-mm vertical grid tubes, zone 11

5000-hm grid size, Oregon State Range coordinate system, North zone 11 (PNTD, 2007), U.S. Army Center of Geospatial

[illegible]

EFFECTIVE DATE OF 2010 PROPOSED
 15,000 VOLUME GRIFFIN
 December 16, 2007
 EFFECTIVE DATES OF NEW BIDDING TO THIS PANEL

For community and senior centers, please call 1-800-455-5555 for the Community Mail Order Catalog. For more information, call 1-800-455-5555. For the product catalog, please call 1-800-455-5555. For the product catalog, please call 1-800-455-5555.

 	PANEL 02750 FIRM
---	---------------------------------------

**FLOOD INSURANCE RATE MAP
MORROW COUNTY,
OREGON
AND INCORPORATED AREAS**

PANEL 0275 OF 1400
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTINUED

INSUR	COMMON TO	RESEARCH	PANEL SURVEY
	UNIVERSITY COLLEGE		
	INDEPENDENT RESEARCH	40779	Q78

FLOOD

It's not a "war" — the Gulf Warship never takes shots at Iraq's oil rigs — but *Expendable* Number 2 is an action war (no pun) for the *Expendable* Number 2 crew.

MAP NUMBER
41068C0275D

EFFECTIVE DATE

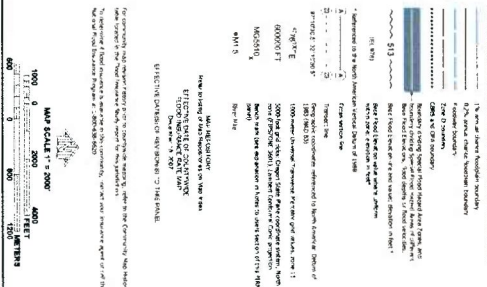
 **AMERICAN SOCIETY OF MECHANICAL ENGINEERS**

REGIONAL

DECEMBER 18, 2007

Federal Emergency Management Agency

LEGEND

[illegible][illegible]

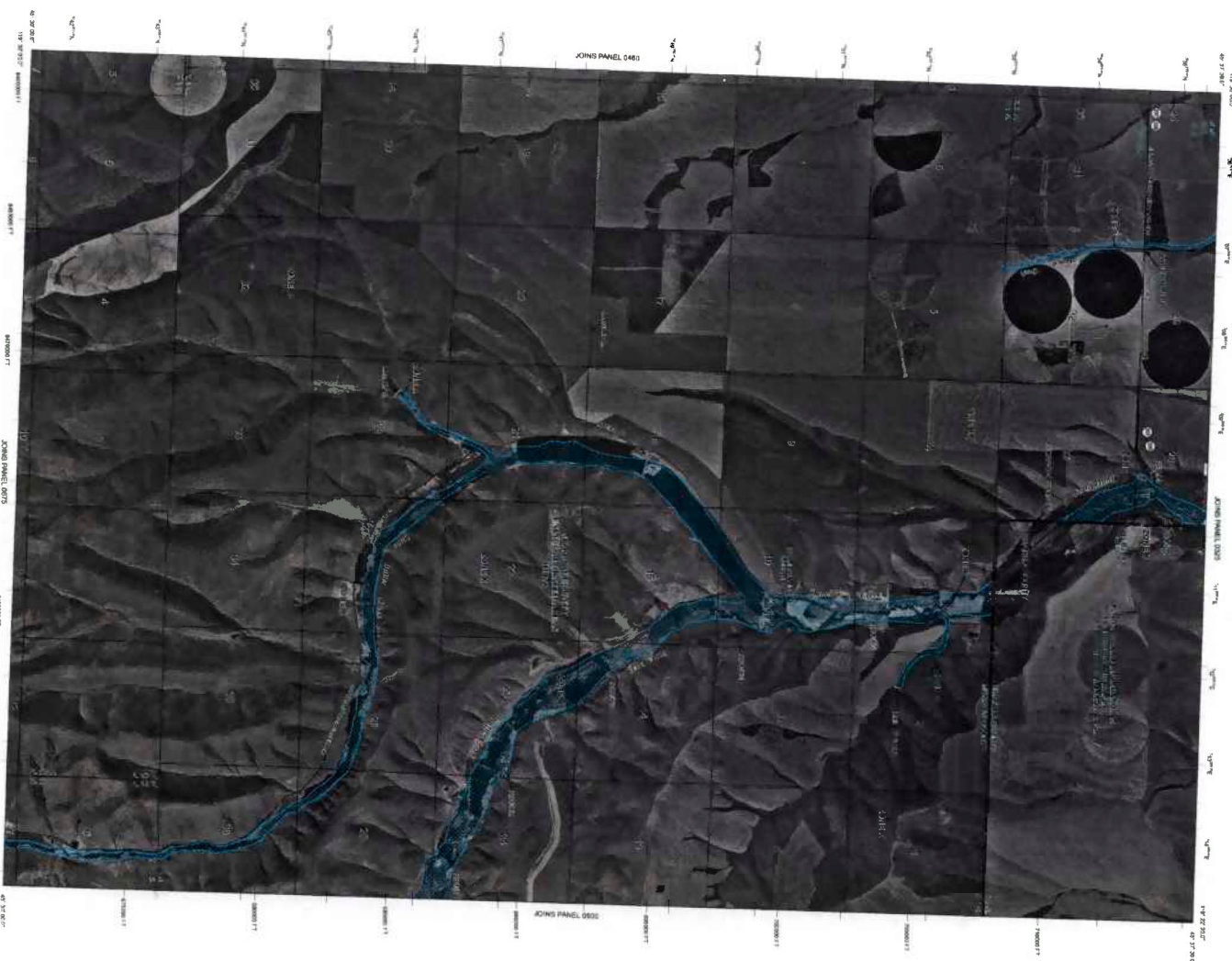
The top two issues in interviewing the business food management programs are the **food safety** and **food quality** issues. The food safety issues are the most critical, and the food quality issues are the most important. The food safety issues are the most critical, and the food quality issues are the most important. The food safety issues are the most critical, and the food quality issues are the most important.

[illegible]

NCS Information Services
NCIA/NAOS12
National Genetic Survey
SSAC, 3, 40202
1315 East-West Highway
Silver Spring, MD 20910-3202

To obtain the *in vitro* and *in vivo* data, blood samples were collected from 100 patients with various types of cancer (breast, prostate, colon, stomach, lung, and pancreatic cancer) and 100 healthy donors. The blood samples were collected from the patients and donors at the National Cancer Institute (NCI) and the National Institutes of Health (NIH) and were stored at -80°C until use. The blood samples were then analyzed for the presence of the *in vitro* and *in vivo* data.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-800-453-4343 or visit the FEMA website at <http://www.fema.gov/>

[illegible]

FLOODWAY MEETS IN 2004

The flooding is the culture of a firm that are adept floodway, which that must be kept free of encroachment to the firm. The annual floodway must be kept free of encroachment to the firm.

OTHER FLOODWAY

☐ **OTHER AGENTS**
 Agency of U.S. Postal Office, 600, pages of 1/2, service three days a week
 decided to use them 1/2 for use in Chicago area and 1/2 in New York, the price
 estimated by agent from 1/2, about 1/2 and 1/2.

OTHERWISE PROTECTED AREAS (OPWA)	COASTAL BARRIER RESOURCES SYS (CBRS) AREAS	ZONE D AREAS IN WHICH SOME HAZARDS ARE UNDETERMINED, BUT PROBABLE

[illegible]

1985 and CIA boundary

Boundary defining Special Interest Areas (SIA), and Boundary defining Special Interest Areas of different size. (See Table 1, page 10, for details on SIA.)

513

[illegible][illegible][illegible]

1000 NEQUANCE AVE UNIT 200
DENVER, CO 80202
EFFECTIVE DATE OF REVISION: 07-20-2008

For information on flood insurance in Louisiana in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-485-6436.

MAP SCALE = 1" = 200'

1900 0 200 400

1000 0 400 1200

FEET METERS

NEP
MM
FIRM
PANEL 04750

**FLOOD INSURANCE RATE MAP
MORROW COUNTY,
OREGON**

PANEL 04/75 OF 1400

CONTACT COMMUNITY	MEMBER	PAVEL	SAFETY
NORTON COUNTY UNINCORPORATED AREA	412173	6475	3

OOD II

MAP NUMBER
41040C DATED

EFFECTIVE DATE
DECEMBER 18, 2007

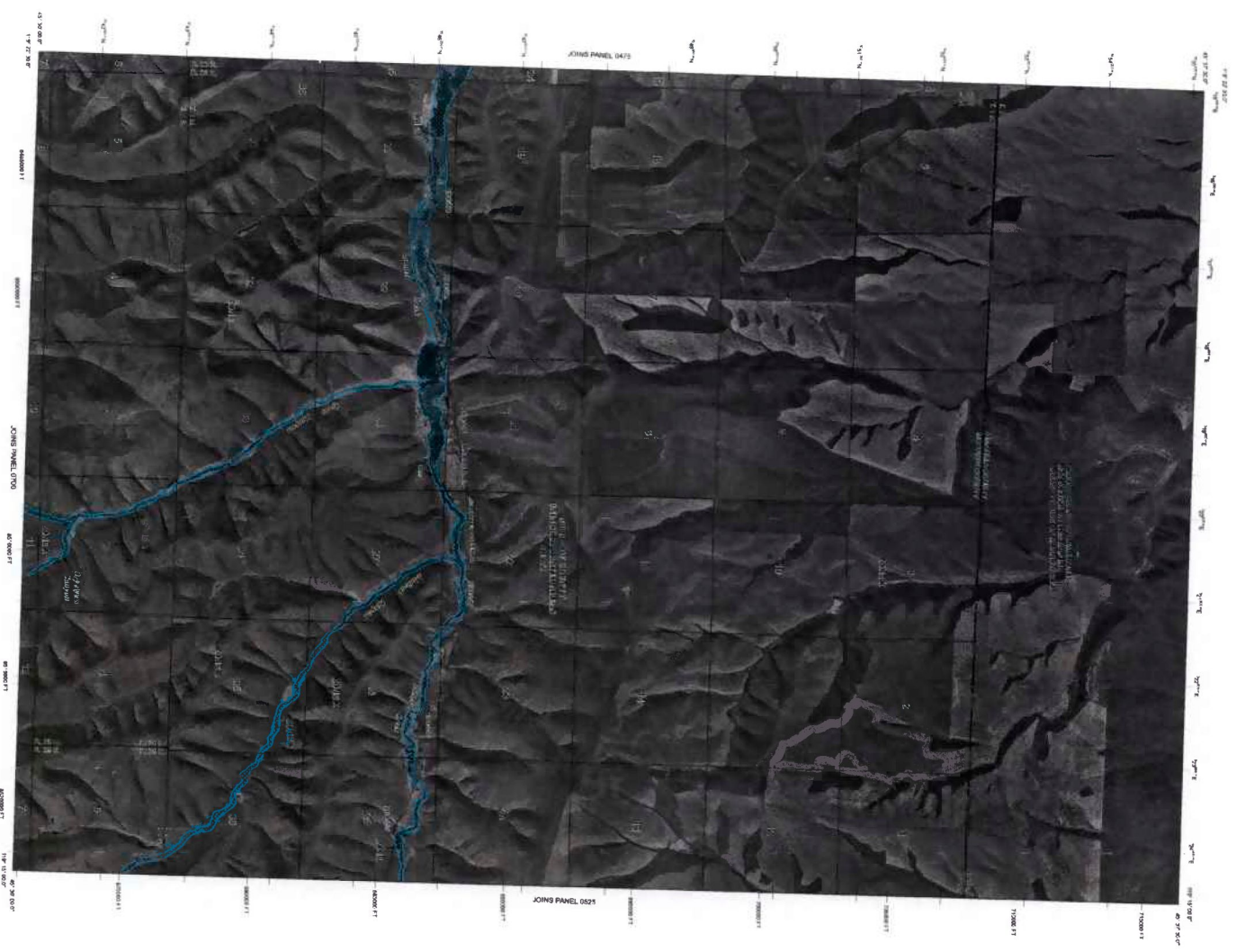
1000

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify an area subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for more detailed information.

the 1980s, the 1990s, and the 2000s, and the 2010s. The 1980s were a time of great change for the world, and the 1990s were a time of great change for the United States. The 2000s were a time of great change for the world, and the 2010s were a time of great change for the United States. The 1980s were a time of great change for the world, and the 1990s were a time of great change for the United States. The 2000s were a time of great change for the world, and the 2010s were a time of great change for the United States.

[illegible]

If you have questions about this map or questions concerning the National Flood Insurance Program, please call 1-877-4-NEHA (toll free) or 1-817-335-2677 or visit the FEMA website at <http://www.fema.gov>.



SPECIAL FLOOD HAZARD AREAS (SFHA#) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

[illegible][illegible][illegible]

bioRxiv preprint doi: <https://doi.org/10.1101/2017.04.11.128000>; this version posted April 11, 2017. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

MAP SCALE - 2000
1 IN. = 1000 FEET

5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0

PROGRAM

NFP

FIRM

PANEL M000D

FLOOD INSURANCE RATE MAP
MORROW COUNTY,
OREGON
AND INCORPORATED AREAS

[illegible]

NATIONAL

FEDERAL EMPLOYMENT MANAGEMENT AGENCY

EFFECTIVE DATE
DECEMBER 18, 2007

AAW NUMBER
4446005900

ISSUE NO.
1

DATE OF ISSUE
12/18/07

ISSUED BY
FEMA

REVISIONS
None

APPROVED BY
[Signature]

DATE OF REVIEW
12/18/07

REVIEWED BY
[Signature]

REVIEW COMMENTS
None

REVIEW DATE
12/18/07

REVIEWER'S NAME
[Name]

REVIEWER'S TITLE
[Title]

REVIEWER'S ORGANIZATION
[Organization]

REVIEWER'S ADDRESS
[Address]

REVIEWER'S PHONE
[Phone]

REVIEWER'S FAX
[Fax]

REVIEWER'S E-MAIL
[Email]

REVIEWER'S SIGNATURE
[Signature]

REVIEWER'S DATE
12/18/07

REVIEWER'S LOCATION
[Location]

REVIEWER'S COUNTRY
USA

REVIEWER'S CITY
Washington, DC

REVIEWER'S STATE
DC

REVIEWER'S ZIP
20540

REVIEWER'S COUNTY
District of Columbia

REVIEWER'S DISTRICT
District of Columbia

REVIEWER'S SUB-DISTRICT
District of Columbia

REVIEWER'S OFFICE
District of Columbia

REVIEWER'S DIVISION
District of Columbia

REVIEWER'S BRANCH
District of Columbia

REVIEWER'S SECTION
District of Columbia

REVIEWER'S UNIT
District of Columbia

REVIEWER'S POSITION
District of Columbia

REVIEWER'S GRADE
District of Columbia

REVIEWER'S PAY PLAN
District of Columbia

REVIEWER'S PAY RANGE
District of Columbia

REVIEWER'S PAY BAND
District of Columbia

REVIEWER'S PAY POINT
District of Columbia

REVIEWER'S PAY STEP
District of Columbia

REVIEWER'S PAY RATE
District of Columbia

REVIEWER'S PAY ADJUSTMENT
District of Columbia

REVIEWER'S PAY INCREASE
District of Columbia

REVIEWER'S PAY DECREASE
District of Columbia

REVIEWER'S PAY FREEZE
District of Columbia

REVIEWER'S PAY THROTTLE
District of Columbia

REVIEWER'S PAY CAP
District of Columbia

REVIEWER'S PAY FLOOR
District of Columbia

REVIEWER'S PAY CEILING
District of Columbia

REVIEWER'S PAY MAXIMUM
District of Columbia

REVIEWER'S PAY MINIMUM
District of Columbia

REVIEWER'S PAY MIDDLE
District of Columbia

REVIEWER'S PAY AVERAGE
District of Columbia

REVIEWER'S PAY MEDIAN
District of Columbia

REVIEWER'S PAY MODE
District of Columbia

REVIEWER'S PAY MEAN
District of Columbia

REVIEWER'S PAY STANDARD DEVIATION
District of Columbia

REVIEWER'S PAY VARIANCE
District of Columbia

REVIEWER'S PAY COEFFICIENT OF VARIATION
District of Columbia

REVIEWER'S PAY SKURTNESS
District of Columbia

REVIEWER'S PAY KURTOSIS
District of Columbia

REVIEWER'S PAY SKEWNESS
District of Columbia

LEGEND

[illegible]

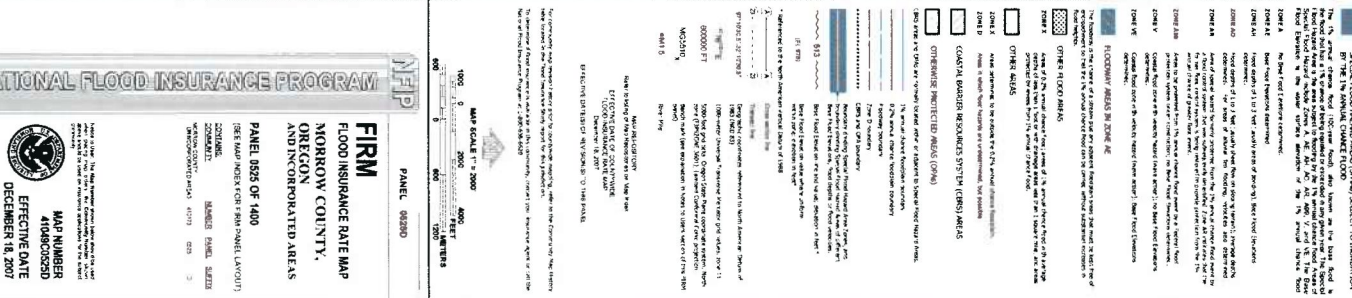
Zone D boundary
LEDS and GFA boundary

[illegible][illegible]

To determine if a road may be in a state of disrepair, create a 2000-foot buffer around a road.

Map Scale = 2000 Feet

1000 0 2000 4000 FEET

[illegible]

NOTES TO USERS

[illegible]

Certain areas not in Special Flood Hazard Areas may be protected by flood control levees. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The applicability of the use of the population of this region (United States) as the reference zone is 11. The hypothetical dataset in Table 3, CIRS 30, shows differences in outcome (age, proportion of U.S. born) in the production of RPLs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the map.

NCIS Information Services
National Center for
National Center, Survey
SSWC, 3, 68202
135 East West Highway
Silver Spring, MD 20910, USA
Tel: 301 715-3248

Base map information shown on this ECD was derived from multiple sources. Base map data were provided in digital format by the United Geological Enterprises Office (UEO). The information was compiled from many local sources and includes transportation features, water features, political boundaries, and other Survey System features. Aerial photography dated 2000-2007 were provided by the United States Geological Survey (USGS).

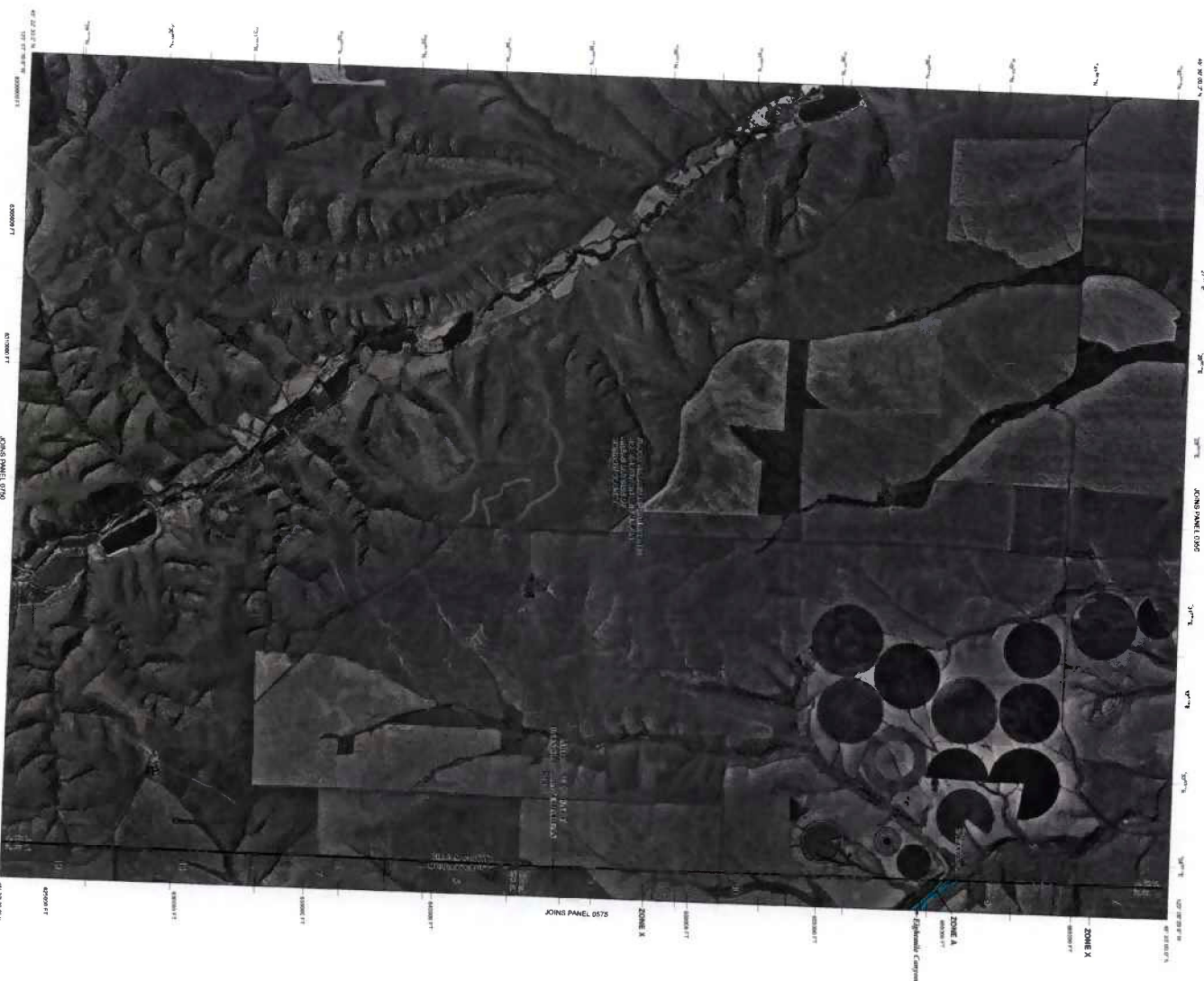
The map is not a statistical or up-to-date stream channel configuration. It was drawn on the grounds of the jurisdiction. The floodplains and flood-prone areas are shown in a way that is not intended to conform to these new stream configurations. As a result, the floodplains and flood-prone areas may reflect stream channel deviations that differ from what is shown on the map.

Corporate lands shown on the map are based on the last data available at the time of publication. Because changes are in transition or de-administration have taken place, the designated project map shows for a specific map of the county during the period of the map. The map is not a statistical or up-to-date stream channel configuration. It was drawn on the grounds of the jurisdiction. The floodplains and flood-prone areas are shown in a way that is not intended to conform to these new stream configurations. As a result, the floodplains and flood-prone areas may reflect stream channel deviations that differ from what is shown on the map.

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Contact the FEMA Map Service Center at 1-800-368-9616 for information on available products associated with this flood. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by fax at 1-800-368-9620 and its website at <http://fema.mtc.gov>

If you have questions about this study or questions concerning the National Food Insurance Program in general, please call 1-877-4REDA MAP (1-877-336-2627) or visit the E-MA web site at <http://www.fema.gov>



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood) also becomes the base flood. The flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include: (a) AE, A1, A2, AR, AR1, V, and VE. The Base Flood Elevation is the average elevation of the 1% annual chance flood.

ZONE A	Base (or 100 ft) top of gravel.
ZONE B	100 ft top of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE C	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE D	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE E	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE F	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE G	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE H	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE I	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE J	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE K	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE L	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE M	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE N	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE O	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE P	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE Q	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE R	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE S	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE T	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE U	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE V	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE W	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE X	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE Y	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.
ZONE Z	Base of 1 to 1/2" (usually many of pebbles). Base is sand, no gravel.

Zone V

As a result of the 1998 earthquake, the zone was partially destroyed. The zone is located in the center of the city and is the most densely populated area. The zone is located in the center of the city and is the most densely populated area. The zone is located in the center of the city and is the most densely populated area.

ZONE VE
Copper Road (one-way) vehicle travel (west); Shaw Road (two-way) travel (west)
Department

ZONE VI
Floodway Areas in Zone AE

The floodway is the area of a stream flow or adjacent floodway that must be kept free of obstructions so that the full natural channel flow can be carried without unduly increasing the water level.

OTHER FLOOD AREAS

Areas of the project channel, dikes, levees, or the annual flood flow at any average depth of less than 1 foot or up to 10 feet above the dike top; dikes, levees, and areas protected by levees from 1 to 5 annual flood flow.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

ZONE D Areas in which the hazards are not immediate, but significant.

ZONE X Areas determined to be outside the 250 ft zone of wave flood (40 ft).

UNDEVELOPED

OTHERWISE PROTECTED AREAS (OPWA)

Which species are OPWA are no more than listed either as Sensitive or Species at Risk?

_____ I'm not a Nature Protection Area

_____ I'm not a Nature Protection Area

_____ I'm not a Nature Protection Area

*** Recovery indicator**

Form D Summary

CMS and CPA boundary

Boundary showing Special Flood Hazard Areas Zone A1, boundary dividing Special Flood Hazard Areas of different types Flood Plain areas, Special Damages or Flood reduction.

[illegible]

Sheng, H. H. *et al.* (2000) *Journal of the American Water Resources Association*, **36**, 1035-1047.

MBS2010
 X
 Date: 27/07/2010
 09:07:5
 Bower: 10/07/2010
 MBS: 10/07/2010
 Date: 27/07/2010
 09:07:5
 Bower: 10/07/2010
 MBS: 10/07/2010

EFFECTIVE DATE OF COLLAPOSE
11:00:00 INSTANT GATE WAY
December 18, 2007
@ FIVE DATE OF REVISIONS TO THIS DATA

To determine if food insurance is available in this community, contact your insurance agent or call the National Food Insurance Program at 1-800-833-0450.

MAP SCALE 1" = 2000'

0 1000 2000 3000 4000 5000 6000

FEET METERS

NFP	PANEL 0660D
FIRM	

**FLOOD INSURANCE RATE MAP
MORROW COUNTY,
OREGON**

PANEL 0550 OF 1400
[SEE MAP INDEX FOR FIRM PANEL LAYOUT]

CONTAINER COMMENTS	NUMBER	PAVEL	SEITE
WORKON COUNTY JANUARY 1985	412119	0000	

LOOD I

MAP NUMBER
41048C0550D

EFFECTIVE DATE
DECEMBER 18, 2007

NOTES TO USERS

[illegible]

MOCA Information Services
MOCA, INC. 2512
Falcon Creek Survey
SSMC, #3702
13115 Eastview Highway
Silver Spring, MD 20910-7252

Base Map: Information shown on the E-Find was derived from multiple sources. In certain street locations, description, activity location information for benches marked shown on this map, please contact the Information Services Branch of the National Crime Survey at (800) 713-5242 or visit the website at <http://www.ncs.mcgill.ca/gis/>.

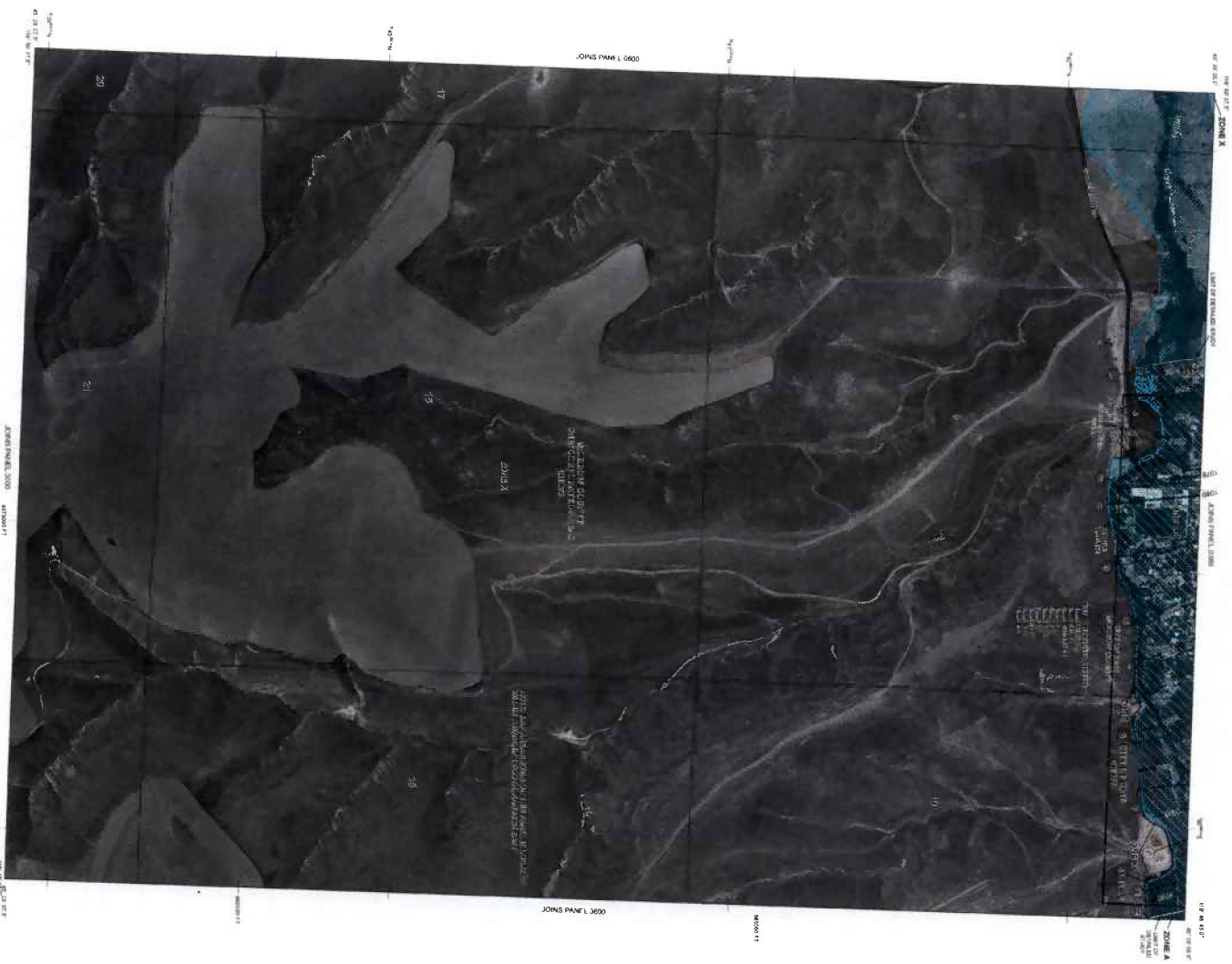
The map reflects data obtained and up-to-date stream channel configurations. Office (CEC). The information was compiled from many local sources and includes transportation features, water bodies, political boundaries, and Public Land System features. Arc/View software dated 2000-2001 was provided by the United States Geological Survey (USGS).

Modifications that were transferred from the previous FPA say, have been related to criticisms of these new data sources. For example, as a result the Food Profiles and Foodday Data tables may reflect somewhat skewed estimates that differ from what is shown on this map.

Please refer to the separately printed map index for an overview map of the country showing the layout of 700 parks, community map repository addresses, and a listing of Conservation Areas within National Park Initiative Program areas. For each community, we used the location of the nearest park, and we provided the park's coordinates, when the map was available, and we provided the park's name, when possible.

Contact the FEMA Map Service Center at 1-800-368-5858 for information on available products associated with this FEMA. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital version of this map. The FEMA Map Service Center may also be reached at 1-800-368-5858 and the website at <http://www.fema.gov>.

If you have questions about this map or anything concerning the National Flood Insurance Program in general, please call 1-877-FEMA-Map (1-877-362-6271) or visit the FEMA website: <http://www.fema.gov>



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

Food Hazard A, a 1% chance of being exposed or exceeded in any given year. The Specific Food Hazard A, as it was subject to flooding by the 1% annual chance flood. Assess Specific Food Hazard on the Zones A, AE, AH, AD, AR, ADV, V, and VC. The Basic Flood Elevation is the water elevation of the 1% Annual Chance Flood.

ZONE A	ZONE B	ZONE C	ZONE D	ZONE E	ZONE F	ZONE G	ZONE H	ZONE I	ZONE J	ZONE K	ZONE L	ZONE M	ZONE N	ZONE O	ZONE P	ZONE Q	ZONE R	ZONE S	ZONE T	ZONE U	ZONE V	ZONE W	ZONE X	ZONE Y	ZONE Z

ZONE A/B

Azela is located primarily protected from the 1% annual chance flood event by a flood control system that was successfully designed. Zone A/B includes part of the lower flood control system is being modified to provide protection from the 1% annual chance of greater flood events.

Storms are characterized from 1% annual chance storm event by a Probable Flood

ZONE V	Coastal flood zone with density hazard (wave action); no Red Flood Elevations determined
ZONE VI	Coastal flood zone with velocity hazard (wave action); Red Flood Elevations determined

[illegible]

OTHER FLOOD AREAS

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depth of less than 1 foot; or with discharge areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Also determined to be outside the 2.5% annual change threshold
Agencies with insufficient or no information but positive

OTHERWISE PROTECTED AREAS (OPAs)

[illegible]

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PROGRAM (continued) referred to north Atlantic Ocean of 1962 (LAW 83)

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MAP RECORDARY
Refer to listing of Map Projections on Map n:an
EFFECTIVE DATE OF COUNTRY DE
FIGURE RESOLUTION DATE MAPS
1/2/2007 12:30:17

SEE BEYOND PATTERNS OF REFINANCING TO THE FAMILIES

⁷ Information on food assistance available in the community (current food distribution agency or all the existing food assistance programs at 1-800-638-5622).

MAP SCALE = 500'

FEET

METERS

NEIP

PANEL 0677D

FIRM
FLOOD INSURANCE RATE MAP

**MORROW COUNTY,
OREGON
AND INCORPORATED AREAS**

PANEL 0577 OF 1400
SEE MAP INDEX FOR FRONT PANEL LAYOUT

[illegible]

OOD I

And to User: The Map Number three below should be used when pricing a vehicle in the Community between whom there should be used an increase in adjustments for the third category.

MAP NUMBER
41049C0577D
EFFECTIVE DATE
02/01/2007

DECEMBER 19, 2007

NATIONAL

Federal Emergency Management Agency

This map is for use in administering the National Flood Insurance Program and is not necessary for liability. All areas subject to flooding, particularly from sea level rise, are shown in the map. The community map inventory should be consulted for possible updates or additional notes about flood elevation.

Coastal Stress Impact Elevations shown on the map apply only to a band of 0.3 North American Vertical Datum of 1988 (NAVD83) waters of the F-181 and do not include the elevation of the F-181. The elevation of the F-181 is 10.0 feet above the mean low coastal flood elevation of 1988 (MLLW) also provided in the Summary of Stakeholder Input to the Flood Insurance Study report for the jurisdiction. Stakeholder input to the Summary of Stakeholder Input table should be used to corroborate other floodplain management practices when they are higher than the elevations shown on the FIRM.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 Flood Protection Measures of the Flood Insurance Study report for information on flood control structures in the jurisdiction.

The projection used in the preparation of the map was Universal Transverse Mercator Zone 11. The ellipsoid used was the International 1965 (IAD 65, GRS 65) spheroid. Differences in datum, spheroid, and projection in the IAD 65, GRS 65 projection of Florida for indicator jurisdiction may result in slight horizontal offsets. The map features assume jurisdiction boundaries. These differences do not affect the accuracy of the Florida

NCE Information Services
 1986 These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988 visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following addresses:

INDIAN TRIBES &
NATIONAL ANTHROPOLOGICAL SURVEY
SUSAN C. BARNES
1315 East 10th Street
Beverly Hills, CA 90210-3292

To clarify current operation, description and/or location information for objects
marked shown on this map, please contact the Information Service Branch of the
National Geographic Society at (202) 775-3292 or visit the website at
www.national-antropological-survey.org

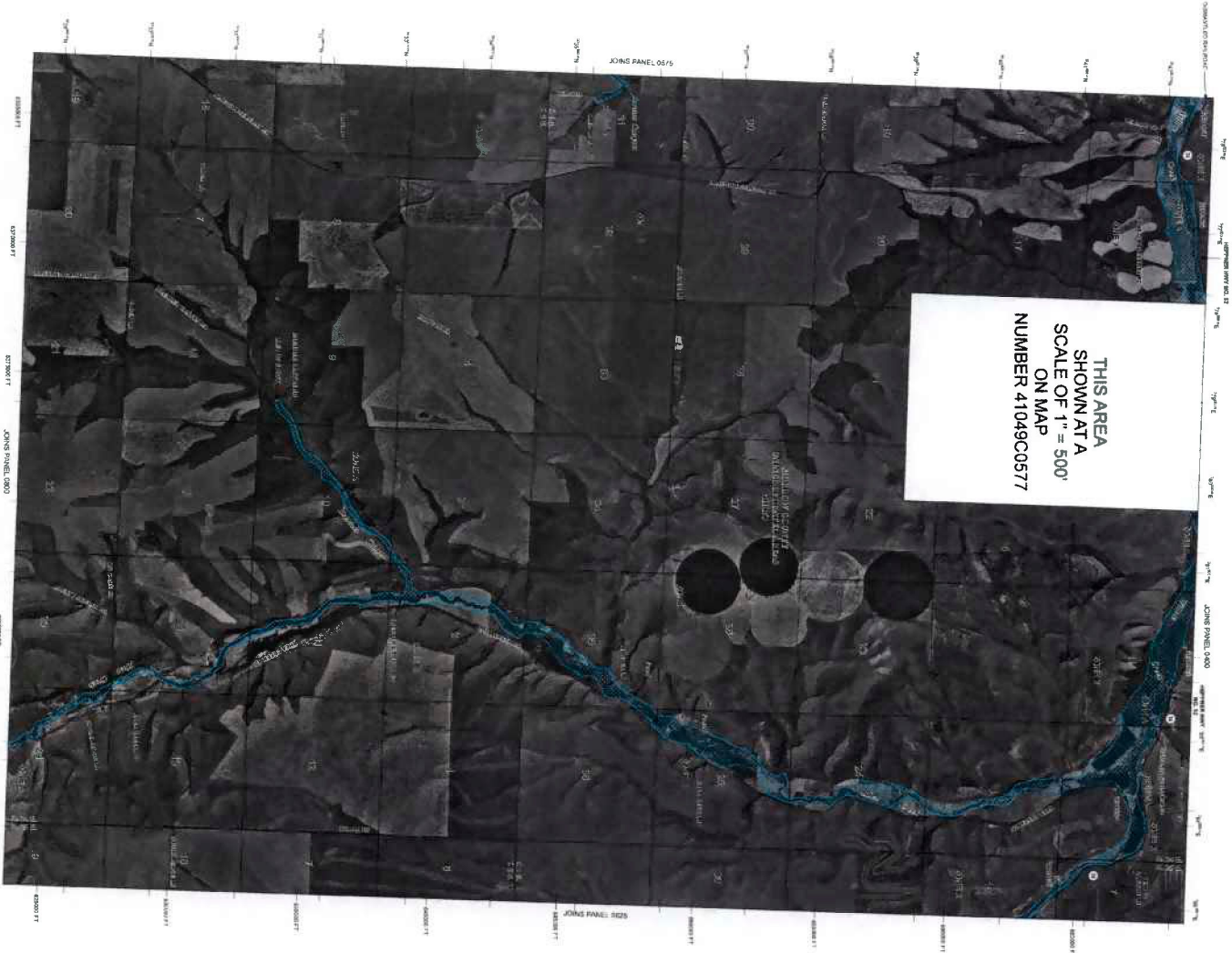
Basic map information shown on this FPA was derived from multiple sources. Base map were taken in digital format by the Chicago Geological Engineering Dept (GEO). This information was compiled from many local sources and includes transportation features, water features, political boundaries, and other land use. System features: ArcView (desktop version) 3.2a/2004 were used by the United States Geological Survey (USGS).

This map reflects lake level and up-to-date stream channel configurations that trace almost to the previous fifth for the jurisdiction. The floodwaters and floodways that were transferred from the previous Fifth may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on this map.

Please refer to the separately printed **Index** located for an overview map of the country, showing the location of the various research and production programs and a listing of Communities (the existing NABU and the new ones) and of the dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Service Center at 1-800-358-6176 for information on available products associated with this FIRL. Available products may include: Flood Insurance Study/Report, Flood Insurance Rate Map, Flood Hazard Data, digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-6220 and its website at <http://mhc.fema.gov/>.

The "profile base rate" depicted on the map represents the hydraulic modeling results that match the flood problem in the FIS report. As a result of improved hydrologic data, the "profile base line" is shown as it may derive significantly from the channel cartography or inquest conducted by the S-MA.



PEOPLE WHO HAD AIDS (SPHAs) SUBJECT TO INMUNITION BY THE 1% ANNUAL CHANCE FOOD

The 1% annual chance food (100-year flood, also known as the base flood, or the flood that has a 1% chance of being equaled or exceeded in any given year) The Special Flood Hazard Areas (SFHAs) were mapped according to the 1% annual chance flood. The Special Flood Hazard Areas (SFHAs) were mapped according to the 1% annual chance flood. The Special Flood Hazard Areas (SFHAs) were mapped according to the 1% annual chance flood.

[illegible]

ZONE A-01
A short (100 ft) system that was subsequently derelictified. Zone A-01 took over the former flood (700 ft) system, a being retained to provide storage from 1% to 10% annual chance of flood (100 ft).

ZONE A-02
Aren't to be protected from the loss of storage flood event by a Federal Storage Control System under construction. No flood plain storage determined.

ZONE A-03
Partial flood zone with safety hazard (levee area); no flood plain. Derelictified.

FLUORONARY AREAS IN ZONE AE

The floridity in the crumple of a stream close to my subject's floodplain means that there must be high flow of groundwater to this part of the floodplain. The floodplain is a part of the floodplain, and the floodplain is a part of the floodplain.

ZONE 1 ☐ **OTHER AREAS**

Areas determined to be suitable for 0.2% annual chance flooding.

ZONE 2 ☐ **OTHER AREAS**

Areas of 0.2% annual chance flooding, areas of 1% annual chance flooding with average depths of less than 1 foot or with openings over the 1 square yard; and areas protected by levees from the annual chance flood.

ZONE D	Areas in which flood hazards are undetermined, but possible
	COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
	OTHERWISE PROTECTED AREAS (OPAs)
	CBRS areas and OPAs are specially located within or adjacent to Special Flood Hazard Areas.

1% annual share buyback boundary
 0.2% annual share buyback boundary
 Random boundary
 Type D boundary
 CMB and CMB boundary
 Boundary shading: Special Risk Insurance Area Zones, anti
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+71 8771

base: fixed iteration, fixed inputs / fixed stochastic  
base: fixed iteration, we and 'value' deviation in feet \*  
base: fixed iteration, we and 'value' deviation in feet \*  
base: fixed iteration, we and 'value' deviation in feet \*

\* Adapted to fit a Markov process via the Chain of 1999  
\* Adapted to fit a Markov process via the Chain of 1999  
\* Adapted to fit a Markov process via the Chain of 1999

Cross section base

**Keywords:** 3D printing; additive manufacturing; digital fabrication; rapid prototyping; rapid tooling

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 Refer to listing of Video Recorders on stamp from  
 EFFECTIVE DATE OF COURT ORDER

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MAP SCALE 1" = 200'

1000 0 2000 4000  
FEET

PANEL 0860D

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY,  
OREGON

AND INCORPORATED AREAS  
PANEL 0600 OF 1400  
(SEE MAP INDEX FOR PANEL LAYOUT)

|          |            |
|----------|------------|
| CONTACT: | NAME:      |
| COMPANY: | PAUL SLECH |
| ADDRESS: |            |
| CITY:    |            |
| STATE:   |            |
| ZIP:     |            |
| PHONE:   |            |
| FAX:     |            |
| EMAIL:   |            |
| DATE:    |            |
| TIME:    |            |
| BY:      |            |
| FOR:     |            |
| REMARKS: |            |

**FLOOD**

WICK'S LOW The Big Bend River basin dried in 1995 after years of rain. By Glenwood Canyon, where the river is called on its way to the Gulf of Mexico, the water is low.

**MAP NUMBER**  
4106C06000

**EFFECTIVE DATE**  
DECEMBER 18, 2007

**Federal Emergency Management Agency**



## NOTES TO USERS

This topic was used in implementing the National Food Insecurity Program (NFIP) in the United States. The NFIP was a federal program that provided average income of about \$10,000 per year to low-income households. The program was designed to provide assistance to a national food distribution network. The program was designed to provide assistance to a national food distribution network. The program was designed to provide assistance to a national food distribution network.

The projection used in the preparation of the map was Universal Transverse Mercator zone 11. The horizontal datum was NAD 83. Data for streamflow were obtained from stream gauging stations and the product of flow rate and stream cross-sectional area. The vertical datum was mean sea level. The map was prepared using ArcView 3.2a and ArcMap 3.2a. The map was prepared using ArcView 3.2a and ArcMap 3.2a. The map was prepared using ArcView 3.2a and ArcMap 3.2a.

NSA Information Services  
NOAA/USCIS  
International Geophysics Survey  
http://www.ngs.noaa.gov or contact the National Geophysics Survey at the following address.

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1335 Elmwood Drive  
Stam Spring, MD 20706-1335

To obtain current elevation, direction and/or location information for benchmarks marked on this map, please contact the Information Services Branch of the National Geographic Society at (301) 712-5242 or visit its website at <http://www.ngs.noaa.gov/>.

**Base Map** information shown on this *© FIM* was derived from multiple sources. Base map data was provided in digital format by the Oregon Geospatial Ecosystem

The map details were obtained and left-right channel configurations from the station on my personal ERM for the project in the Bogwanan and Roodhyskirk that were transferred from the personal ERM by a team lead to a database. I realized it may have been easier to get the data for a small lake in Scotland, but unfortunately it was not the case. I was able to find the Floods in the Bogwanan and Roodhyskirk, but the other river system channel, reservoir that flows from the lake is shown on the map.

Corporate leaders' support on the map are spread on the third table available at <http://www.earthwatch.org>. The map also shows the type of business or industry of the company. The map is a work in progress. Inevitably, some gaps in representation are inevitable. Some companies may have occurred after this map was published; map users should contact earthwatch@earthwatch.org for the latest version.

If you have questions about this map or Ontario's general Fire Insurance Program in general, please call 1-877-EMMA MAP (1-877-336-2627) or visit the EMMA website at [emma.gov.on.ca](http://emma.gov.on.ca).

lens that meet the food priorities in the FS (2001). As a result, 27 improved households in the FS (2001) were able to meet their food priorities, compared to 14 in the baseline survey. In the FS (2001), 10 improved households were able to meet their food priorities, but were unable to meet their other needs, compared to 10 in the baseline survey. In the FS (2001), 17 improved households were able to meet their other needs, but were unable to meet their food priorities, compared to 10 in the baseline survey. In the FS (2001), 10 improved households were able to meet their food priorities and other needs, compared to 10 in the baseline survey.



LEGEND

[illegible][illegible]

|                                                                                       |                                                  |                                                                                                                             |
|---------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|  | <b>ZONE A</b>                                    | Area designated to be outside the 0.1% Annual Chance Floodplain. Areas in which flood hazards are infrequent, but possible. |
|  | <b>ZONE B</b>                                    |                                                                                                                             |
|  | <b>CONSERVATION RESOURCES SYSTEM (CRS) AREAS</b> |                                                                                                                             |
|  | <b>OTHERWISE PROTECTED AREAS (OPAs)</b>          |                                                                                                                             |

Figure 1: A schematic diagram of a 2D rectangular domain representing a food web. The domain is divided into several regions by different boundary types. From top to bottom, the regions are: a top boundary (solid line), a region labeled "2.2% annual (static) food web boundary" (dashed line), a region labeled "Resource boundary" (dotted line), a region labeled "Type C boundary" (dash-dot line), a region labeled "C3R5 and C3R6 boundary" (long-dashed line), a region labeled "Resource quality space in food network from Trophic and Resource quality space in food network from Trophic and Resource quality space in food network from Trophic" (horizontal wavy line), and a bottom boundary (solid line). The left and right boundaries are also solid lines.

[illegible]

www.jstor.org/stable/303111. Content downloaded from 91.229.248.116 on Tue, 20 Jun 2017 13:45:40 UTC  
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Journal compilation © 2007 Blackwell Publishing Ltd



**PANEL 0040**

**NEP**

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY.

**OREGON  
AND INCORPORATED AREAS**

| RANGE     | PANEL 0004 OF 1800 | (SEE MAP INDEX FOR FRM PANEL LAYOUT) |
|-----------|--------------------|--------------------------------------|
| COUNCIL   |                    |                                      |
| COMMUNITY | NUMBER             | PANEL                                |
|           |                    | SUFFIX                               |

**INSURANCE COMPANY**  
UNION NATIONAL BANK 40175 0564

**Flow**

MAP NUMBER  
41049C060AD  
EFFECTIVE DATE

DECEMBER 18, 2007

Federal Emergency Management Agency







## LEGEND

[illegible]

1. World of three Neolithic boundaries  
0.2% versus native Neolithic boundaries  
Food boundaries  
Zone D boundary  
Cells and Gap boundaries

**013**

After the already heavily damaged state, we have been able to speed up the pace of reconstruction. The speediest and the most successful sector of the economy has been the construction of housing.

Now, the 1992-1993 and 1993-1994 have been the best years for the construction sector.

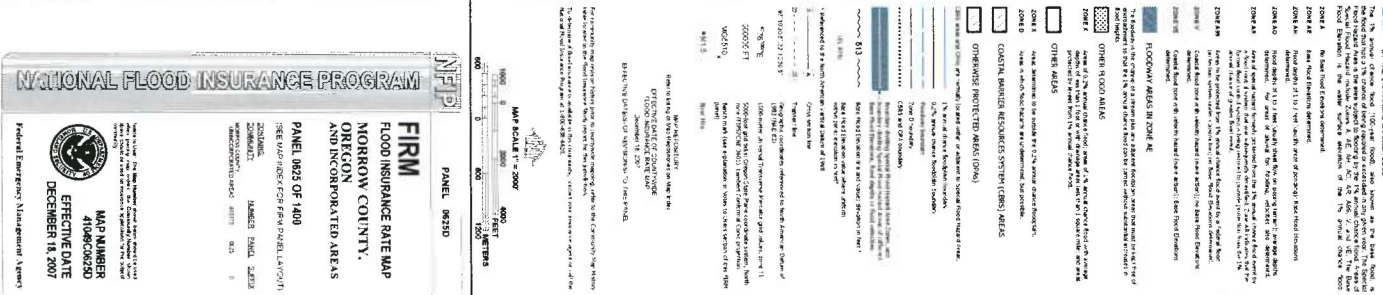
Now I would like to show some pictures of the reconstruction of the city.

27-00000-27-12835

© 1994-1995, International Center for the Study of the Holocaust and the Shoah

[illegible]

Take a walk in the field. Measure. Study, report the results. Find out what you can about the place. Then, draw a map. To determine if that sketch is useful to others, first, ask them, "What do you know about it?" Then, ask them, "What do you think it is?" If you're right, you're good.



## NOTES TO USERS

<sup>7</sup>To obtain more detailed information in areas where Base Flood Elevations (BFE's) does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, the community map repository should have been consulted for possible posted or additional flood hazard information.

[illegible][illegible]

Certain areas not in Special Flood Hazard Zones may be protected by flood control structures. Refer to Section 2.4 Flood Protection Measures of the Flood Insurance Study, report reference in bold to see details in this publication.

The population living in the jurisdiction of this report was 1,049,350. The sex ratio was 100 males per 100 females. The median age was 35 years. The median income was \$14,000 per year.

Differences in urban, suburban, and rural areas in the production of floods for adjacent jurisdictions may result in water level differences in major flood areas across jurisdiction boundaries. These differences do not affect the accuracy of this report.

blood elevations in the group are referenced to the North American Vertical Datum of 1985. These three elevations must be converted to relative sea level elevations to be used in the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1955 and the North American Vertical Datum of 1985, see the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

National Cancer Survey  
SSMC-3, #9202  
1315 East-West Highway

To obtain current elevation, direction and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the National Geospatial Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>

**Base Map:** Information shown on this map was derived from multiple sources. Please note that we have provided a digital format for the *Map of Cultural/Ethnic Diversity* (CEOD). This information was compiled from many local sources and includes transportation features, water features, political boundaries, and Political Survey Station features. Aerial photographs dated 2003-2004 were provided by the United States Geological Survey (USGS).

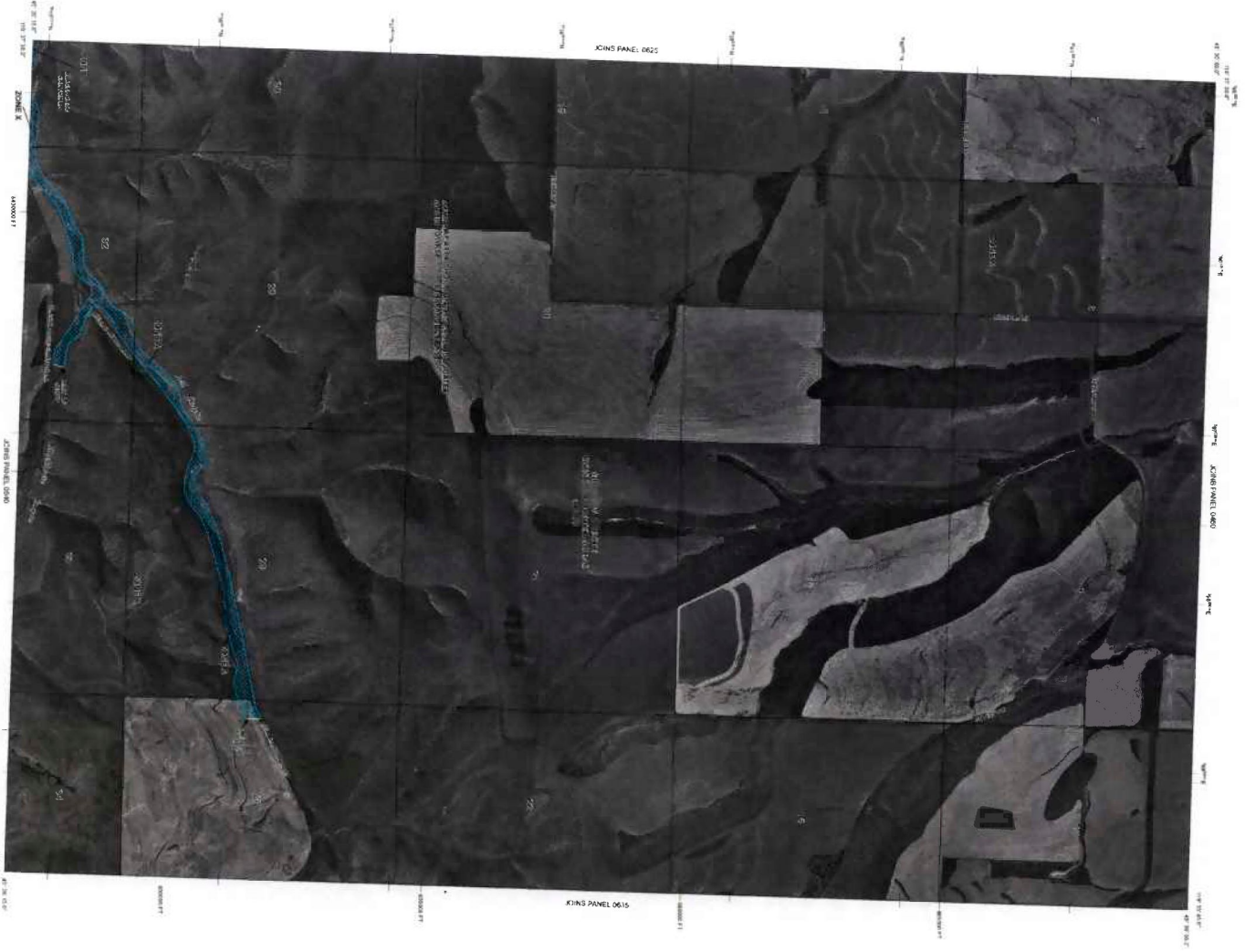
The map reflects more detailed and up-to-date stream channel configurations than the known topographic field for this watershed. The location and floodage that were identified from the private field map have been adjusted to conform to these new stream channel configurations. As a result, the Flood Prediction and Flooding Data tables may reflect stream channel distances not other from what is shown on the map.

Corporate listings shown on this map are based on the best data available at the time of publication. Because changes due to acquisitions or re-arrangements may have occurred since the map was published, map users should contact 800/200/0000.

Contact the **FEMA Map Service Center** at 1-800-368-5848 for information on available products associated with this FEMA Assistance program; they will point you to the nearest Federal Emergency Management Agency office and/or nearest Letter of Map Change or Flood Insurance Study report and/or community as well as a listing of the parcels on which each community is located.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-366-2627) or visit the FEMA website at <http://www.fema.gov>.

The profile base lines depicted on this map represent the hydrologic modeling base lines that match the flow profiles in the FIS report. As a result of improved hydrologic data, the profile base line, "in some cases may deviate significantly from the channel centerline or appear outside of the SFHA."



## LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

**Zone A** is a low flood elevation segment. The 1% annual chance flood (100-year flood) and beyond as the case flood. The 1% annual chance flood has a 1% chance of being exceeded in any given year. The Special Flood Hazard Zone in this area subject to flooding by the 1% annual chance flood. Areas Special Flood Hazard within Zones A, AE, AH, AD, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

| ZONE A6                                                                                                                                      | ZONE A8                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Road density of 2 to 3 trees (urban areas or parkways); 1 tree Road E equivalent determined.                                                 | Road density of 1 to 2 trees (rural areas or parkways); average density determined.                                                          |
| Mean density of 1 to 2 trees (urban areas or parkways); average density determined. For areas of mixed low-lying vegetation also determined. | Mean density of 1 to 2 trees (rural areas or parkways); average density determined. For areas of mixed low-lying vegetation also determined. |
| Aerial survey of land formerly used shows the 1% wetland (Zone F) overlies by                                                                |                                                                                                                                              |

**ZONE V**

A road to the west end of the site subsequently created. Zone A indicates that the former Road could follow a path intended to provide protection from the potential damage of greater flood risk.

A road to the east end of the site, Zone C, was a Flood zone by a Flood Risk protection system which constituted a Flood Protection derivative.

(former Road zone - an artery, where there were no other roads [Bavaria]).

**PLACEMENT AREAS IN ZONE A/C**

**OTHER FACTORS**

A study of 2,700 small and large flood areas of 17th century France found that average depths of 2.5m (8ft) or more caused more deaths than 1.5m (5ft) or less. Deaths were also predicted by levels from 1 to 2m above flood.

☐ OTHER AREAS

☐ ZONE A  
A type determined to be within the 0.7% ground shock exception.  
Areas within ground hazard are under review. But possible.

☐ ZONE D  
COUNTRYSIDE RESOURCES SYSTEM (CURS) AREAS

**OTHEWYSE PROTECTED AALAS (OPMA)**

OTMA and OPMA are normally used when it is desired to spread food reward across all of the subjects in a study.

OTMA and OPMA are normally used when it is desired to spread food reward across all of the subjects in a study.

[illegible][illegible][illegible]

MAJESTIC  
 180-7702 303 L. 1st Ave. (between Grand and  
 River) near New Richmond in North End Section of the Fifth  
 Ward.  
 • M-  
 River Side

**WATER RESISTANT CARPET**  
new to today's home markets as Vinyl Planks  
**EFFECTIVE DATE OF CONTRACT**  
**FLOORING/DANCE FLOORS MADE**  
Date: **March 18, 2007**

For company's coverage policy, contact your broker to learn details or apply online to the CenturyLink Health Insurance Plan. Under the plan, you may be able to get a \$1,000 credit for a health savings account (HSA) if you have one. To determine if your insurance is available in the community, contact your insurance agent or call toll-free the Health Insurance Program at 1-800-633-6420.

MAP SCALE 1" = 1000'



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PANEL 0630D

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY

THE RO  
BORN IN OREGON  
OREGON  
AND INCORPORATED AREAS  
DATE 05/01/07 11:00

| INSURANCE                           |         |
|-------------------------------------|---------|
| USE MAP INDEX FOR FIRM PANEL LAYOUT |         |
| CONTAINS                            | NUMBER  |
| COMPLETES                           | PANEL   |
| SERVICE COUNT                       | PERCENT |

GOOD INSURANCE

Number 14/1971 The *Shipping Handbook* for the year 1971-72 is a new edition. It may replace the Community Handbook as the source should be 1980 (a thousand opportunities for the ship) (continued)

MAP NUMBER  
4104SC0630D  
EFFECTIVE DATE  
DECEMBER 18, 2007

NA  
Federal Emergency Management Agency



## NOTES TO USERS

This model was used in identifying the "second tier" insurance programs that may be necessary, given at least subject to financing particularly for small businesses. The model was used to estimate the potential impact of a tax credit for the purchase of flood insurance, and to estimate the potential impact of a tax credit for the purchase of flood insurance. The model was used to estimate the potential impact of a tax credit for the purchase of flood insurance.

Coastal Base Flood Elevations shown on this map apply only inland of 0.7 North American Vertical Datum of 1988 (NAVD 88). Users of the FIRM should be aware that coastal base flood elevations are also provided as the primary of elevations shown in the Flood Insurance Study report for its jurisdiction. Elevation elevations shown in the Summary of Extreme Elevations table could be used for consultation with local government purposes when they are higher than the elevation shown on the FIRM.

**The population and sex** appearance of the male and female T. tracheatus was similar (Table 1). The population studied was collected in the area of the city of Moscow, Russia. Differences in the adult, unpaired, T. tracheatus sex ratio in the population were not observed. The sex ratio of the population was 1.0, which is close to the sex ratio of the population of T. tracheatus from other regions of Russia (Korotkiy et al. 2002).

Food shed locations on this map are referenced to the North American Vertical Datum of 1988. These food elevations must be corrected to structure and ground elevations referenced to the same vertical datum. For information regarding elevations referenced to the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NIDS Information Services  
 NIDA 444K0912  
 National Geographic Society  
 SSMC-3, #0002  
 1315 FORT WARD HIGHWAY

To obtain current elevation, description, and/or location information for bench marks on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.noaa.gov>.

**Base Map** information shown on this FIRM was derived from multiple sources. Base maps were provided in digital format by the Oregon Geographic Enterprises Office (OGE). This information was compiled from many local sources and includes transportation features, water features, political boundaries, and population. © Susan S. Latham, Portland, Oregon, 2004. All rights reserved.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for the jurisdiction. The flood zones and floodways that were transferred from the previous FIRM may have been adjusted to

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to applications or developments may occur, and Floodway Data labels may reflect stream channel obstacles that differ from what is shown on this map.

Please refer to the separately printed **Map Index** for an overview map of the county, showing the layout of map panels, community map repository addresses, and a listing of communities, their containing National Flood Insurance Program

Contact the FEMA Map Service Center at 1-800-368-5858 for information on available products associated with this FEMA. Available products may include, but are not limited to, the following: Flood Insurance Study report, including previously issued Letters of Map Change; a Flood Insurance Study report, without

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP, 1-877-236-7627, or visit our website at <http://fema.gov>.

The 'profile basic lines' depicted on the map represent the hydraulic modelling have been that match the flood profiles in the FIS report. As a result of improved hydrologic data the 'profile basic line' in some cases may deviate significantly from the channel centreline or ancient (old) bed of the SFHA.



## LEGEND

- [illegible]

**Figure 1** Schematic representation of the different components of the FPGC.

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**NPJP**  
PANEL 06361

**FIRM**

**MORROW COUNTY,  
OREGON**

SALE PRICE \$149.00

SEE MAP INDEX FOR FULL PANEL LAYOUT  
CONTAINS[illegible][illegible]

MAP NUMBER  
410460636D

**EFFECTIVE DATE**  
**DECEMBER 18, 2007**

**Federal Emergency Management Agency**

The map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding potential; there were storage locations of great size. The community map repository should be consulted for possible updates or additional flood hazard information.

To obtain more detailed information or access either the Flood Elevation (FE) or Shallow Flooding (SF) maps have been delineated users are encouraged to consult the National Oceanic and Atmospheric Administration's National Water Research Institute (NWRI). Users must be aware that FE's report on the flood inundation caused by tropical storms may not be used as the sole source of flood elevation information. Accuracy of flood elevation data contained in the FE report should be verified in conjunction with the FEMA's Flood Insurance Rate Map (FIRM).

[illegible]

The projection used in the preparation of the map was Universal Transverse Mercator zone 11. The horizontal datum was NAD 83. GRS 80 spheroid. The vertical datum was mean sea level. The location of the boundaries shown in the map were obtained from the cadastral maps of the city. These drawings do not affect the accuracy of this FPM.

Food establishments on this map are referenced to the North American Vertical Datum of 1988. "Taper road" designations must be compared to state and/or road designations identified to the same vertical datum. For information regarding the National Vertical Datum of 1988, visit the National Center for Geomatics and Earth Information Science at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

To obtain current elevation, description, and location information for beach monitoring stations on the map, please contact the Information Services Bureau at the National Oceanic and Atmospheric Administration, 15001 York Road, Silver Spring, MD 20910-3282.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The boundaries and floodway elevations were transferred from the previous FIRM map have been added to those new stream channel configurations. As a result, the Flood Profiles and the Flood Hazard areas may reflect stream channel alterations that differ from what is shown on the map.

Before the 1990s, the most common way to get information about a community was by looking at the Yellow Pages. Community map-making programs are now available on the Internet, and many communities have their own Web pages. The **ESRI Map Service Center** at 1.800.343.6672, for example, provides a list of Web pages associated with the 1990 Census. The **ESRI** (Environmental Systems Research Institute) Web site at <http://www.esri.com> also provides a list of Web pages associated with the 1990 Census. The **ESRI** Web site also provides a list of Web pages associated with the 1990 Census. The **ESRI** Web site also provides a list of Web pages associated with the 1990 Census.

The "credit" has been made and it may represent the "average" number of years that match the flood return in the FEMA map. As a result, the "credit" may also indicate that the flood return is the 1% return, which may be more significant.

[illegible][illegible]

**ORDER TODAY!**

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| ZONING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ZONING | OTHER AREAS |
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**OPTIONAL: PROTECTED MODE (OPM)**

CRS areas and OPMs are normally located either in adjacent or separate field stream flows. The usual three boundary types are:

- 1. Two parallel lines: Riparian boundary
- 2. One parallel line: Riparian boundary
- 3. One line: Riparian boundary

Other boundary types:

- 4. One line: Riparian boundary
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MAP SCALE 1" = 100'

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FEET METERS

**PANEL 0440D**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**MORROW COUNTY.**

**ORIGON  
AND INCORPORATED AREAS**

**PANEL 0640 OF 1400**

(SEE MAP INDEX FOR PANEL LOCATION)

**CONTAINS:**

**COMPONENTS:**

**NUMBER PANEL, LIST**

**WILLIAM C. COULTER**  
 VICE CHAIRMAN AND SENIOR  
 VICE PRESIDENT

**MAP NUMBER**  
4106060400

**EFFECTIVE DATE**  
DECEMBER 18, 2007



**NATIONAL F**

**Federal Emergency Management Agency**











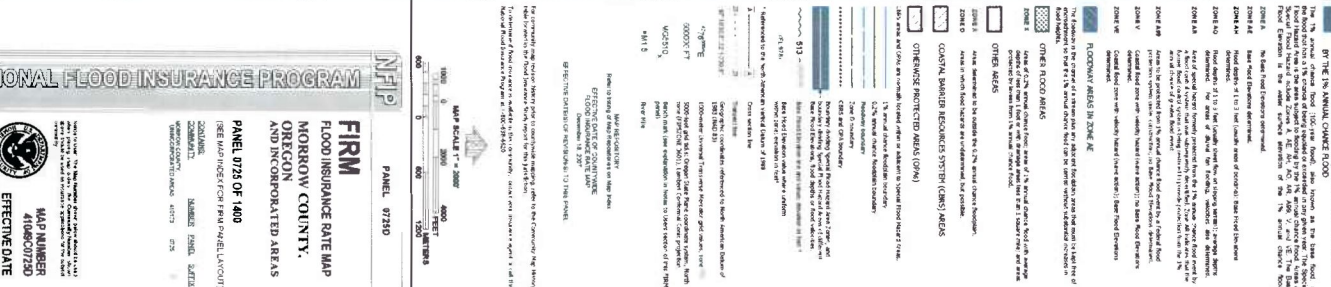




## LEGEND

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## NOTES TO USERS

the long run, the environmental impact of a new, less-polluting power plant will be less than the environmental impact of a new, more-polluting power plant. The environmental impact of a new power plant will be less than the environmental impact of a new power plant.

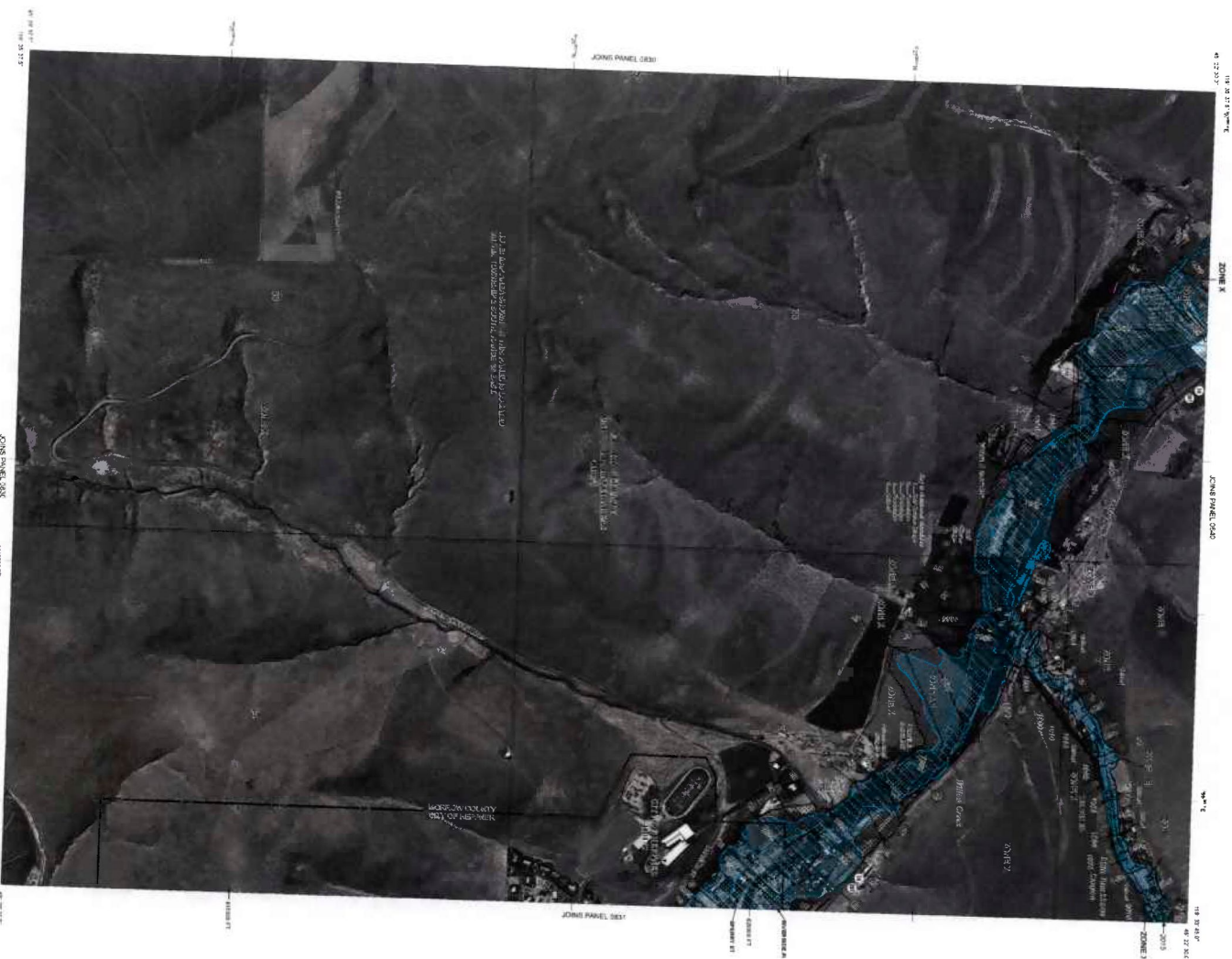
[illegible]

NGS Information Service  
 NOAA/NMFS12  
 National Oceanic Survey  
 SSAC-3 #9202  
 1315 East-West Highway  
 Silver Spring, MD 20910

To obtain any additional information and a free CD-ROM containing the book, please contact the publisher, contact the information service or contact the National Geographic Society at (800) 737-3242. Or visit the website at <http://www.ngs.national.gov>

This book reflects on the development of a modern statistical computing language, with the focus on the R language. The book is written for people who are interested in the development of the R language, and it is a good reference for people who are interested in the development of the R language. The book is written for people who are interested in the development of the R language, and it is a good reference for people who are interested in the development of the R language.

If you have questions about this study or questions concerning The National Flood Insurance Program, in general, please call 1-877-FEMA-HELP (1-877-362-5277) or visit the FEMA website at [www.fema.gov](http://www.fema.gov).



### LEGEND

|      | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |      |
| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |      |

**FLOODWAY AREAS IN ZONE AF**

This floodway is the channel of a stream, plus any adjacent floodplain areas that must be kept free of encroachment to allow the 1% annual chance flood to be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

**ZONE X**



**OTHER AREAS**

Areas determined to be outside the 2.5% spread source floodplain

**CODE D**  
 areas in which food harvest are authorized, but restricted.  
 COASTAL MARINE RESOURCES SYSTEM (CMRS) AREAS  
 OTHER PRIVATE PROTECTED AREAS (OPAs)

[illegible]

**513**  **Book cover**

**514**  **Book cover**

**515**  **Book cover**

**516**  **Book cover**

**517**  **Book cover**

**518**  **Book cover**

1. ☐ **Yes** ☐ **No** ☐ **Don't know**  
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 3. ☐ **Yes** ☐ **No** ☐ **Don't know**  
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 32. ☐ **Yes** ☐ **No** ☐ **Don't know**  
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 82. ☐ **Yes** ☐ **No** ☐ **Don't know**  
 83. ☐ **Yes** ☐ **No** ☐ **Don't know**  
 84. ☐ **Yes** ☐ **No** ☐ **Don't know**  
 85. ☐ **Yes** ☐ **No** ☐ **Don't know**  
 86. ☐ **Yes**

[illegible]

MAIL STOP/POST OFFICE  
 ORDER TO PAYING OF DEPT. REVENUE OR BOND SERVICE  
 IF YOU WANT TO PAY OF COURT ORDER  
 FLOOD INSURANCE FIRM MAIL  
 DATE: 12/12/2001

For a complete and in-depth history of the evaluation program, refer to the Germany Health Index Report for the Fiscal Year 2000 report for the jurisdiction.

The information provided here is available in two countries or has a local insurance report or an official national health insurance program at 1.800.370.6300.

MAP SCALE = 500'

1000 FEET

150 0 100 200

**NFIP**

**PANEL 0827D**

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY,

**OREGON  
AND INCORPORATED AREAS**

**PANEL 0827 OF 1400**

| CONTRACT            |  | NUMBER  | PANEL | SHEET |
|---------------------|--|---------|-------|-------|
| HARRISON, CITY OF   |  | 001-18  | 067   | 0     |
| BOE HONOLULU COUNTY |  | 001-173 | 062   | 0     |

OOD IN

**MAP NUMBER**  
41049C0827D

 **EFFECTIVE DATE**  
**DECEMBER 18, 2007**





## NOTES TO USERS

The map also is a comparison of the federal flood insurance zone with the National Flood Insurance Program (NFIP) coverage area. The NFIP coverage area is the area that is covered by the NFIP. The NFIP coverage area is the area that is covered by the NFIP. The NFIP coverage area is the area that is covered by the NFIP.

Boundaries of the floodways were computed at 1005 elevations and established between census stations. The floodways were based on hydraulic cross-sections with regard to requirements of the National Flood Insurance Program. Floodways, wetlands and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

The projection used in the preparation of the map was Universal Transverse Mercator, Zone 11. The horizontal datum was NAD 83, GRS 80 spheroid. Differences in datum, projection, geographic or UTM zones used in the production of FISRs for adjacent jurisdictions may result in slight positional differences in map features and/or jurisdiction boundaries. These differences do not affect the accuracy of this FISrM.

Foot 2: Elevations of the map are referenced to the North American Vertical Datum of 1988. Three fixed elevations must be computed to structure and ground elevations referenced to the same vertical datum. For information regarding connections between the Historical Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> to contact the National Geodetic Survey at the following:

NCS Information Systems  
NCJA VICS12  
National Geographic Survey  
SSWC-3 88202  
1315 East-West Highway  
Silver Spring, MD 20910-2092

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Horizontal Services Branch of the National Geographic Society at (202) 775-2242 or visit the website at <http://www.ngs.noaa.gov/>

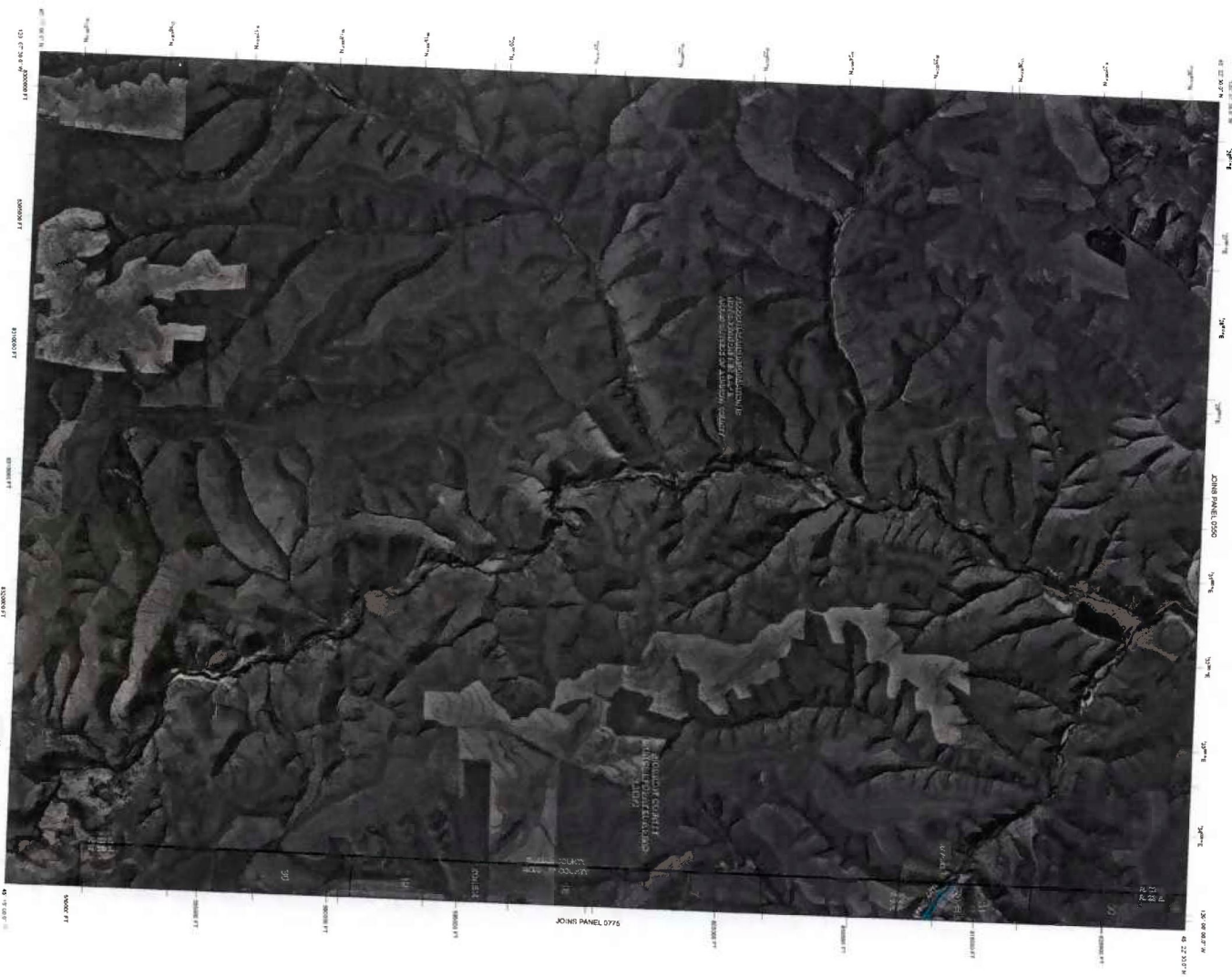
**Base Map** Information shown on this FEM was derived from multiple sources. These map data were provided in digital format by the Oregon Department of Geology (ODG). This information was converted from many local sources and includes international borders, water features, political boundaries, and Aerial Lens Survey System features. Aerial photographs dated 28-6-1977 were provided by the United States Geological Survey (USGS).

This study reflects the *delayed* and *sub-optimal* stream channel configurations that were known on the previous FFR for this reach. The location and frequency that were transferred from the previous FFR may have been adjusted to reflect the change in stream channel configuration. As a result, the flood profiles and floodway data likely may reflect stream channel features that differ from what is shown in this map.

Peeters refer to the especially graded **Map Index** for an overview map of the country showing the layout of map panels, currently map depositary addresses and a listing of Communities (also containing National Food Institute, French agricultural and food research centres, and the National Institute for Research and Training for each community, as well as a listing of the present on-foreign experts).

For the **FEMA Map Service Center** at 1-800-368-6646 for information on available products associated with the FIRM. Available products may include: previously issued letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by fax at 1-800-368-6646 and the website at <http://www.fema.gov>.

The profile base line depicted on this map represents the "no-stake modeling" case, i.e., that under the flood scenario in the report. As a result of improved agricultural practices, the profile base line, in some cases, may deviate significantly from the channel, coastline or levee outside the flood.



### LEGEND

**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO FLOODATION BY THE 1% ANNUAL CHANCE FLOOD**

The flood plot is a 1% chance of being flooded or exceeded in any given year. The Special Flood Hazard Areas (SFHAs) are the areas subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AC, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

|                |                                                                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ZONE A1</b> | new rapid flowdowns determined                                                                                                                                 |
| <b>ZONE A2</b> | flood depths of 1 to 2 feet (usually areas of ponds); also flood thresholds determined                                                                         |
| <b>ZONE A3</b> | flood depths of 1 to 2 feet (usually above flow on existing low bar); new age specific determined; low areas of ground (on flooding, vehicles also determined) |

[illegible]

| 2016 V                                                                                  | 2016 W                                                                                 |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Small flood zone with heavy hazard to the sector; no State Flood Elevations determined. | Coastal flood zone with sector hazard (see sector); State Flood Elevations determined. |

 OTHER FLOOD AREAS

OTHER AREAS ☐

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

OTHERWISE PROTECTED AREAS (OPAs)

USFS areas and OPA's are normally located either on adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Reactivity boundary  
Zone D boundary  
CARS and CARS boundary  
Reactor building Special Pined Island Area 2 (CARS), and  
boundary building Special P1 and located above it (CARS)

513

How does evolution in one value, deviation in test =

the first three on value where a uniform

with four deviation in test =

is referred to as North American version of 1903

Geographic locations referred to here: Arizona or Texas at 1983 (Table E3)

|                     |                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------|
| 3000XC FT           | 5000-foot and 60-ft Oregon State Fire-Resistant System, North Zone (FPM/CNF 3001), Limited Confined-Cone Propagation |
| MC2510 <sub>X</sub> | Search Mark (See explanation in Notes to Users section of ENF 4204 (ENF4))                                           |

● M15 River Plate

MALD MALDUNATUM

Refer to listing of MALD MALDUNATUM on MALD MALD

71000 INQUIRY DATE 2/20/07  
 CANCELED 18 2007  
 20070218 THE DATES OF CANCELLATION DO NOT MATCH

For information on the new, history guide to clear choice smoking, refer to the Community Age history table located in the Good Insurance Store in your jurisdiction.

To determine if your insurance is included in this program, call a local insurance agent or call the National Flood Insurance Program at 1-800-455-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000  
FEET

600 0 600 1200 METERS

**NEIP**

**PANEL 0760D**

**FIRM**  
FLOOD INSURANCE RATE MAP

**MORROW COUNTY,  
OREGON  
AND INCORPORATED AREAS**

**PANEL 0750 OF 1400**  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

|                                      |         |      |      |
|--------------------------------------|---------|------|------|
| COASTAL<br>COMMUNITY                 | MANAGER | PATL | 2003 |
| WORTH COUNTY<br>UNINCORPORATED AREAS | 45173   | 999  | C    |

OD N

**Notice:** The Bag Machine must always be used when packing bags with the Commodity Inspection Service. Make certain to seal on proper sealant for the subject commodity.

MAP NUMBER  
41049C07500

EFFECTIVE DATE  
DECEMBER 18, 2007



**Federal Emergency Management Agency**



This trap is for use in administering the National Flood Insurance Program does not necessarily identify all areas subject to flooding particularly from local drainage sources of small size. The community's main floodflow should be

[illegible][illegible]

NCS Information Services  
1601A Hancock St.  
National Cancer Society  
SRAC-3 #9202  
1315 East-West Highway  
Silver Spring, MD 20910-3202

[illegible]

Compassionate. Based on the map, as based on the data available at the time of publication, I believe that the map is a representation of the current state of affairs.

Please refer to the September 2007 Map Index for an overview map of the county showing the spread of map groups, community map requests, addresses, and a listing of communities data containing National Health Insurance Program and a listing of community map requests as well as a listing of the status of each community map request.

Contact the FEMA Map Service Center at 1-800-453-5867 for information on available maps and the FEMA Map Service Center website for information on available maps and the FEMA Map Service Center website for information on available maps.

For more information on the FEMA Map Service Center, please contact the FEMA Map Service Center at 1-800-453-5867 or visit the FEMA Map Service Center website at [www.fema.gov](http://www.fema.gov).

If you have questions about this map or questions concerning the National Flood Insurance Program, in general, please call 1-877-USA-MAAP (1-877-732-7627) or visit the FEMA website: <http://www.fema.gov>



**SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Specific Flood Hazard Atlas is the means used to floodproof by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, A99, V, and VE. The Base Flood Elevation is the upper surface elevation of the 1% annual chance flood.

[illegible]

|                 |                                                                                                                                                                                                                               |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ZONE A99</b> | Areas that are protected from the annual chance flood event by a Federal Flood Insurance Study or other study approved by FEMA and shown on the FIRM as being at least a 1% greater flood event than the annual chance flood. |
| <b>ZONE A98</b> | Critical flood zones with velocity hazard (water action); no flow flood elevations determined.                                                                                                                                |
| <b>ZONE V</b>   | Critical flood zones with velocity hazard (water action); no flow flood elevations determined.                                                                                                                                |
| <b>ZONE VE</b>  | Critical flood zones with velocity hazard (water action); base flood elevations determined.                                                                                                                                   |

**FLOODWAY AREAS IN ZONE A:**

The Floodway is the channel and its adjacent floodway areas that must be kept free of obstructions to avoid the possibility of a floodway becoming a flood hazard. Floodway encroachment to avoid the possibility of a floodway becoming a flood hazard.

**OTHER FLOOD AREAS:**

Areas of 0.2% Annual Chance Flood, areas of 1% Annual Chance Flood with average depths of less than 1 foot or water depths between 1 and 1.50 feet, and areas of less than 1 foot or water depths between 1 and 1.50 feet, and areas of less than 1 foot or water depths between 1 and 1.50 feet.

☐ OTHER AREAS

Areas determined to be outside the 0.2% annual chance floodplain. Areas in red on these maps are undetermined, but possible.

☒ COASTAL HAZARD RESOURCES SYSTEM (CHRS) AREAS

**OTHERWISE PROTECTED AREAS (OPAs)**

(This area and land are specially reserved within a Special Flood Hazard Area.)

1% annual chance boundary

0.2% annual chance boundary

floodway boundary

Zone D boundary

[illegible]

200000 FT

400000 FT

800000 FT

1200000 FT

1600000 FT

2000000 FT

2400000 FT

2800000 FT

3200000 FT

3600000 FT

4000000 FT

4400000 FT

4800000 FT

5200000 FT

5600000 FT

6000000 FT

6400000 FT

6800000 FT

7200000 FT

7600000 FT

8000000 FT

8400000 FT

8800000 FT

9200000 FT

9600000 FT

10000000 FT

10400000 FT

10800000 FT

11200000 FT

11600000 FT

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110800000 FT

111200000 FT

111600000 FT

112000000 FT

112400000 FT

112800000 FT

113200000 FT

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114000000 FT

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114800000 FT

115200000 FT

115600000 FT

116000000 FT

1164000

WFO:CTO  
#MA 5  
Date: \_\_\_\_\_  
Over: \_\_\_\_\_  
MAE REQUEST  
Note: In using of MAE Request on this date  
EFFECTIVE DATE OF COUNTERMEASURE

11000 INDUSTRIAL BOULEVARD  
DALLAS, TEXAS 75243  
December 14, 2007

Mr. Rick Warren, Governor of Texas  
1100 North East Street, Suite 1000  
Dallas, Texas 75202

Dear Governor Warren:

I am writing to you today to express my appreciation for the work you and the Texas Department of Transportation are doing to improve the safety of our highways. I am particularly impressed by the work you are doing to improve the safety of our highways. I am particularly impressed by the work you are doing to improve the safety of our highways.

Sincerely,  
[Signature]

Enclosed for the Texas Department of Transportation are 10 Texas packets.

For community and resident feedback prior to construction beginning, refer to the Community Map. Many refer to items in the Road Improvement Study report for this project.

To determine if Road Closure is needed in this community, submit a note and/or a signed petition to the



**Panel 0775D**

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY,  
OREGON

**PANEL 0775 OF 1400**  
(SEE MAP INDEX FOR PPM PANEL LAYOUT)

| COMMUNITY            | NUMBER | PERCENT | DATE |
|----------------------|--------|---------|------|
| WORTHEN COUNTY       |        |         |      |
| UNINCORPORATED AREAS | 440173 | 67%     |      |


**MAP NUMBER**  
 44-1000-100

**NATION**

 410840U1130  
**EFFECTIVE DATE**  
**DECEMBER 18, 2007**

**Federal Emergency Management Agency**

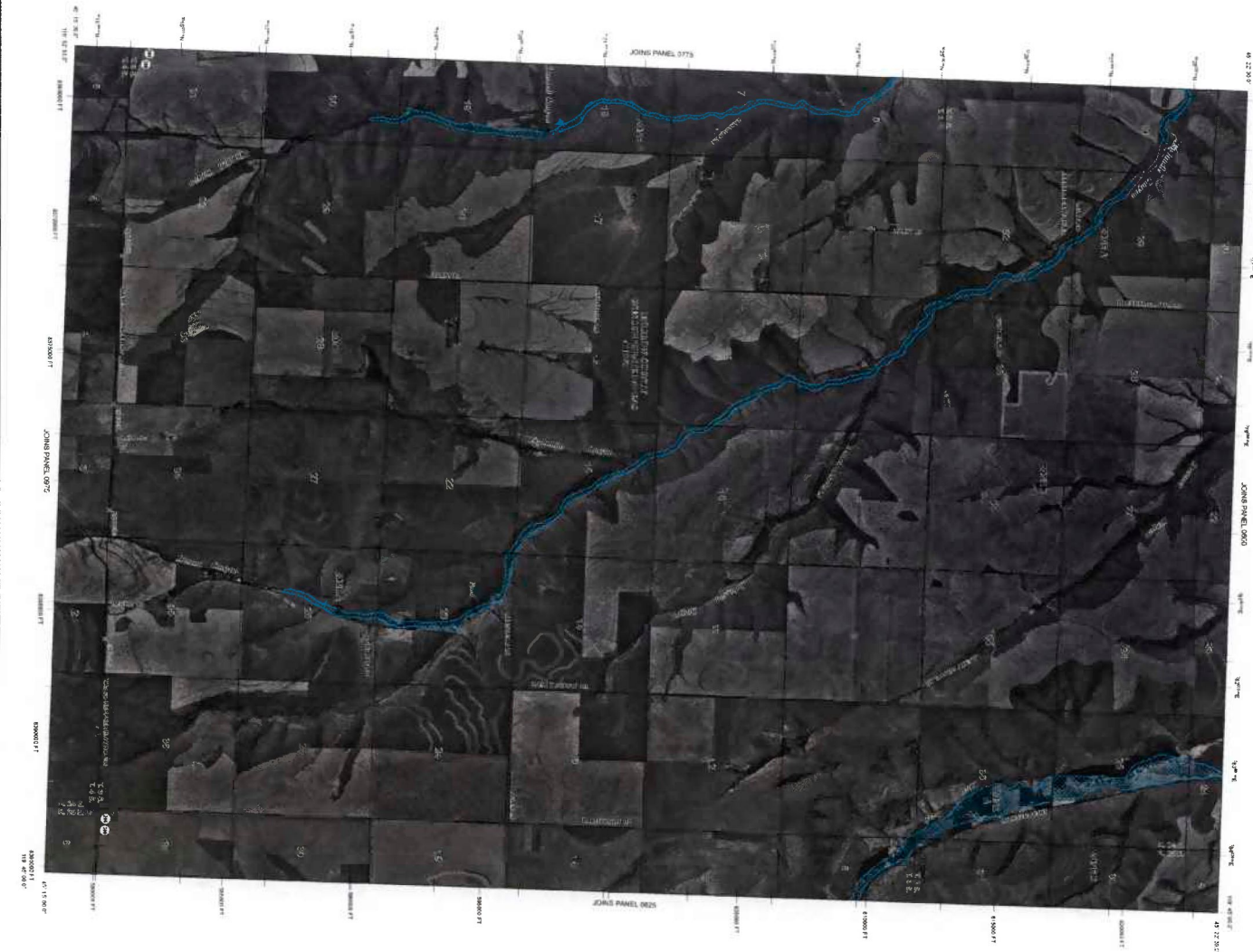


## NOTES TO USERS

The top 10 state in developing the Food Food Revolution is the state of Washington. It has the most food-related laws on the books, 14. The state has also been successful in getting a variety of food-related bills passed in the legislature. The community and industry have been successful in getting a variety of food-related bills passed in the legislature. The community and industry have been successful in getting a variety of food-related bills passed in the legislature.

[illegible][illegible]

Can this be done? The answer is a resounding yes. It is a matter of the type of information, how it is presented or the way it is communicated. The problem is not the information itself, but the way it is presented. The problem is not the information itself, but the way it is presented. The problem is not the information itself, but the way it is presented.



### LEGEND

**SPECIAL FLOOD HAZARD AREAS (SHOWING) SUBJECT TO FLOODATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood, 100-year flood, also known as the base flood, of the flood plain is the greatest flood calculated as a statistical 1% annual chance flood. The Special Flood Hazard Areas are shown by the 1% annual chance flood. Areas of Special Flood Hazard within Towns A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UU, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

No Base Flood Elevation information

[illegible]

**QUESTION** The purpose of a short-term, pre-employment test is to select the best group of candidates to hire for a job. Which of the following is not an assumed statistical property of such a test?

**ANSWERS**

☐ OTHERS FLOOD THE MARKET

☐ OTHERS ARE NOT AS GOOD AS THE GROUP THAT IS SELECTED

☐ OTHERS ARE NOT AS MOTIVATED AS THE GROUP THAT IS SELECTED

☐ OTHERS ARE NOT AS SKILLED AS THE GROUP THAT IS SELECTED

**ANSWER** OTHERS ARE NOT AS MOTIVATED AS THE GROUP THAT IS SELECTED

**EXPLANATION** The purpose of a short-term, pre-employment test is to select the best group of candidates to hire for a job. The test is assumed to be a valid measure of the candidates' ability to perform the job. The test is also assumed to be a reliable measure of the candidates' ability to perform the job. The test is not assumed to be a measure of the candidates' motivation to perform the job.

[illegible][illegible][illegible]

PANEL 0800D

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY,  
OREGON  
AND INCORPORATED AREAS

| CONTAINER            | NUMBER | PAGE | ARTICLE |
|----------------------|--------|------|---------|
| COMMUNITY            |        |      |         |
| WISCONSIN COUNTY     |        |      |         |
| UNINCORPORATED AREAS |        |      |         |

MAP NUMBER  
41049C08000  
EFFECTIVE DATE  
DECEMBER 18, 2007

Federal Emergency Management Agency





### LEGEND

[illegible][illegible][illegible][illegible]

For information of the owner, the following is a summary of the results of the investigation. The results of the investigation are as follows:





**MAP NUMBER**  
**1100000000**  
**EFFECTIVE DATE**  
**DECEMBER 11, 2007**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**  
**WASHINGTON, D.C. 20535**

**MAP**  
**1100000000**  
**EFFECTIVE DATE**  
**DECEMBER 11, 2007**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**  
**WASHINGTON, D.C. 20535**



## LEGEND

[illegible]

|                                                                                       |                |                                                    |
|---------------------------------------------------------------------------------------|----------------|----------------------------------------------------|
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |
|  | <b>2008-12</b> | <b>FLUORESCENT INKS IN SOME</b><br><b>interior</b> |

0.2% gravel, coarse, fine-grained boundary

Regional boundary

Zone 2 boundary

CRIS and CRIS boundary

Boundary along Special Flood Hazard Area 2 zone, and

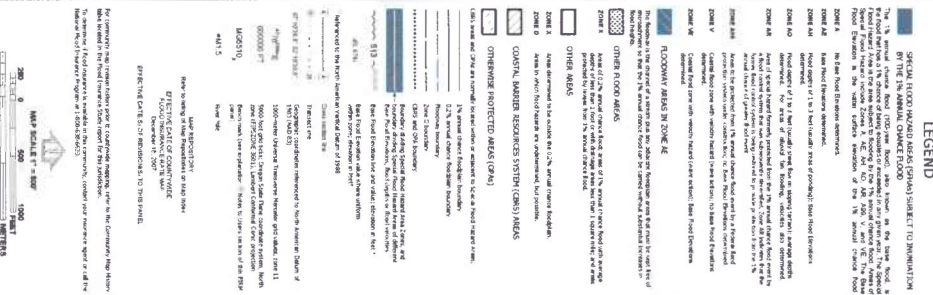
Boundary along Special Flood Hazard Area 1 zone

0 10 20 30 40 50 60 70 80 90 100 feet

[illegible][illegible]

For community map resident history prior to Courthouse mapping, refer to the Community Map History files located in the Project Framework Study report for this jurisdiction.

Map Scale 1" = 100'



# NATIONAL FLOOD INSURANCE PROGRAM



"This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from coastal damage sources of wind size. The community map repository could be

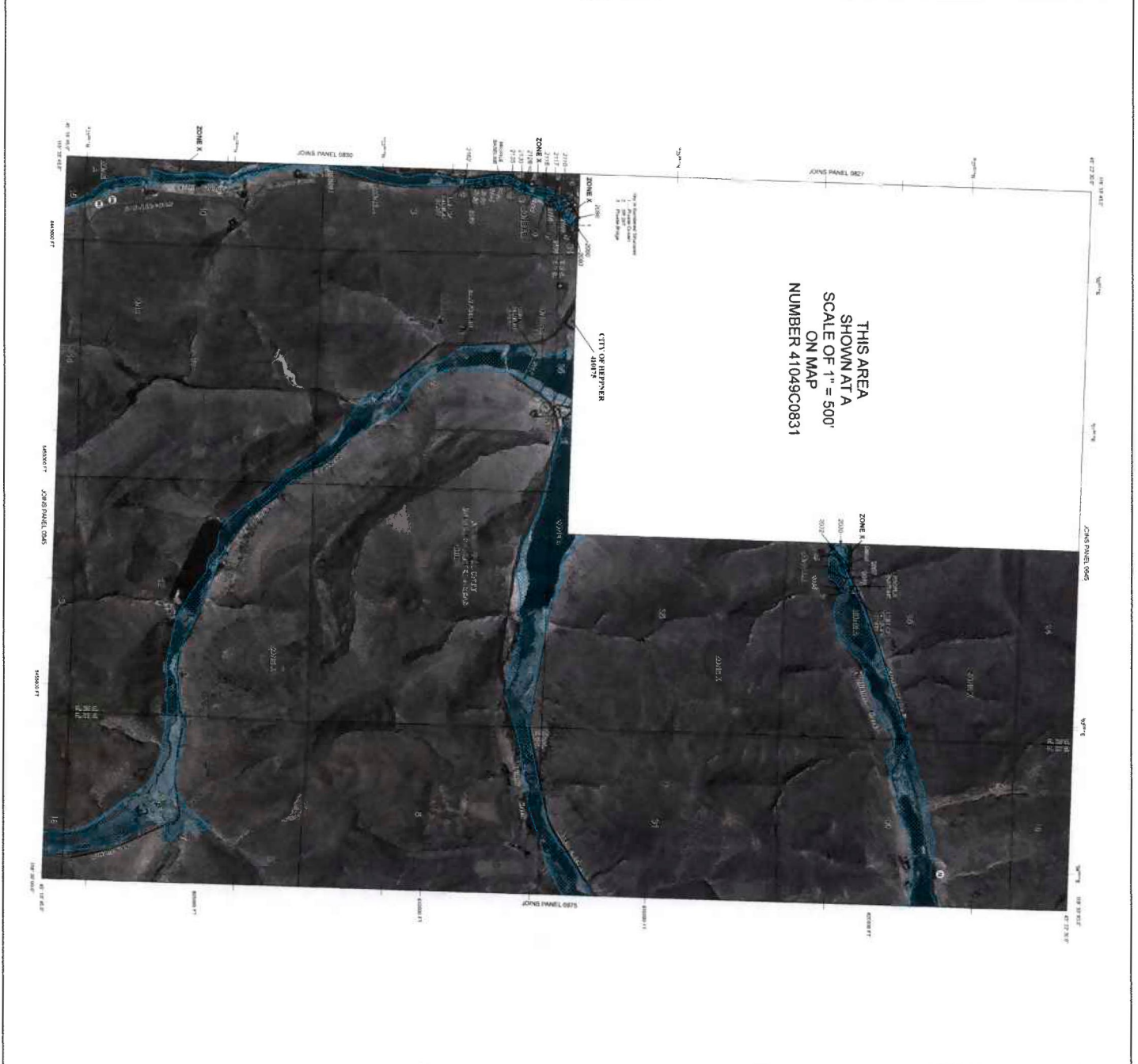
conventional, non-quantitative risk assessment. To avoid this, the **new Flood Exposure** is defined more precisely, taking into account the **physical characteristics** of the area, such as **topography** and **land characteristics**, which are evaluated in the **Physical Vulnerability** index. The **Physical Vulnerability** index is a quantitative measure of the **physical characteristics** of the area, such as **topography** and **land characteristics**, which are evaluated in the **Physical Vulnerability** index. The **Physical Vulnerability** index is a quantitative measure of the **physical characteristics** of the area, such as **topography** and **land characteristics**, which are evaluated in the **Physical Vulnerability** index. The **Physical Vulnerability** index is a quantitative measure of the **physical characteristics** of the area, such as **topography** and **land characteristics**, which are evaluated in the **Physical Vulnerability** index.

[illegible]

NGS Information Services  
PO Box 700512  
National Geographic Society  
SSMDC-3 40002  
1315 East West Highway  
Silver Spring, MD 20910-5082

[illegible][illegible]

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-NNP (1-877-326-3677) or visit the FEMA website at [www.fema.gov](http://www.fema.gov).



SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood, also known as the base flood) is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard areas in the area subject to flooding by the 1% annual chance flood (areas of Special Flood Hazard and other zones) are AE, AH, AO, AR, A99, V and VE. The Great Flood Elevation is the water surface elevation of the 1% annual chance flood.

|                 |                                                                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ZONE A-E</b> | In Flood Insurance requirement.                                                                                                                            |
| <b>ZONE A-H</b> | Flood depths of 1 to 3 feet (usually water up roadway); Base Flood Elevations determined.                                                                  |
| <b>ZONE A-D</b> | Flood depths of 1 to 3 feet (usually street flow rising; no salt); Average depth determined. For water of at least one foot flooding; salt and determined. |
| <b>ZONE A-B</b> | Area of special hazard (formerly protected) from River. In areas where flood event by                                                                      |

**ZONE 400**  
A flood (0.05 cfs) might hit the 100-year flood elevation (2.07 m or 6.80 ft) but the 100-year flood (0.4 cfs) is being reduced to prevent erosion from the 1% spread of water of greater flood event.

**ZONE 500**  
It was to be protected from 1% flood (0.4 cfs) flood event by a flood of flood protection between under construction, i.e. flood flood elevations determined.

**ZONE 600**  
Cause flood (10 cfs) with velocity (water) (water 100%) to flood flood elevations determined.

**ZONE VE** Cleared flood zone with section bordered (to east of zone), Road/Ford/Fordway observed.

**POODWAY AREAS IN ZONE AE**

The boundary is the shape of it stream that an older floodplain area as well as topography of the stream bed. The boundary is the shape of it stream that an older floodplain area as well as topography of the stream bed. The boundary is the shape of it stream that an older floodplain area as well as topography of the stream bed.

**OTHER PITCHED ROOFS**

Area of 0.274 square inches for 22° area of 1% area, a three-foot wide average depth of 100 feet. For a 100-foot wide area, the area is 1 square mile, and was practiced 20 years from 1970 through 1990.

|                                                                                       |                                                                           |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
|  | OTHER AREAS                                                               |
|  | ZONE A<br>Area determined to be within the 0.2% annual chance floodplain. |
|  | ZONE D<br>Area in which flood hazards are uncommon, but possible.         |
|  | CROSSHAIR BARRIER RESOURCES SYSTEM (CBRS) ANALYSIS                        |

OTHERWISE PROTECTED AREAS (CPM)

Food from Nonhuman  
Zoo (1) Inventory /  
CLASS and Data Organization

After 1900, *Encephalitis* and *polio* are *not* in text.  
 (A. 97%)  
 from final iteration: none of them selected  
 after four iterations in text.  
 \* Represented in the North American version (October 2008)  
 (Class on this line)

**1. Project Name**  
 On-campus construction laboratory for teaching structural steel design of steel moment-resisting frames.

**2. Project Description**  
 The project involves the design and construction of a two-story, two-bay moment-resisting frame (MRF) made of steel. The frame is subjected to gravity loads and lateral loads (wind and seismic). The project aims to provide students with hands-on experience in the design and construction of steel MRFs.

**3. Objectives**  
 The objectives of the project are to:

- Design a steel moment-resisting frame (MRF) for a two-story, two-bay structure.
- Construct the steel MRF using structural steel members and connections.
- Test the constructed MRF under gravity and lateral loads.
- Analyze the experimental results and compare them with the design predictions.

**4. Scope**  
 The scope of the project includes the design, construction, and testing of the steel MRF. The project will focus on the design and construction of the frame, and the testing will be performed using a universal testing machine (UTM).

**5. Deliverables**  
 The deliverables of the project are:

- Design drawings of the steel MRF.
- Construction drawings of the steel MRF.
- Test results and analysis of the steel MRF.
- Final report of the project.

**6. Timeline**  
 The project timeline is as follows:

- Week 1: Project initiation and planning.
- Week 2: Design of the steel MRF.
- Week 3: Construction of the steel MRF.
- Week 4: Testing of the steel MRF.
- Week 5: Analysis of the test results and final report.

**7. Budget**  
 The budget for the project is estimated to be \$10,000. The budget includes the cost of materials, equipment, and personnel.

**8. Risks**  
 The risks associated with the project are:

- Design errors or omissions.
- Construction errors or omissions.
- Testing errors or omissions.
- Material quality issues.
- Equipment failure.
- Personnel availability.

**9. Conclusion**  
 The project is a valuable learning experience for students, providing them with hands-on experience in the design and construction of steel MRFs. The project will help students understand the behavior of steel MRFs under gravity and lateral loads, and the importance of proper design and construction.

Name: \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_  
 State: \_\_\_\_\_  
 Zip: \_\_\_\_\_  
 Country: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_

**SOP RECD007CHT**  
Added to scope of the regulations on this order  
**STARTING DATE OF CLIENTS' AND**  
**FLOOD INSURANCE RATING MAY**  
December 15, 2007  
**BUT NOT LATER THAN NOVEMBER 30, 2010**

To determine if fluid intake is a predictor in this community, current year's water intake will be measured from the National Health and Medical Research Council's Food Frequency Questionnaire (1992) (1).

MAP SCALE 1" = 1000'

0 1000 2000

FEET

METERS

300 0 500 600

**NEIP**

**PANEL 00350**

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY.

**OREGON**  
AND INCORPORATED AREAS  
PANEI 0835 OF 1400

| CONTACT |      | NUMBER | PAGE | STATUS |
|---------|------|--------|------|--------|
| ADDRESS | CITY | STATE  | ZIP  |        |

WILLIAM T. GILBERT  
UNIVERSITY OF CALIFORNIA LIBRARY  
41073 0026

[illegible]

MAP NUMBER  
41089C0835D  
EFFECTIVE DATE  
DECEMBER 18, 2007

National  
Federal Emergency Management Agency









## LEGEND

[illegible]

 OTHER HAZARDOUS AREAS

**OTHER AREAS**

**ZONES A** Areas determined to be outside the 0.2% annual chance flood plain, in which there is no special flood hazard.

OTHERWISE PROTECTED AREAS (OPAs)

1% men at France Football's survey  
0.2% argue France 'borderline  
country' isn't  
More 0 to 100

**CBMS and CPA boundary**

Boundary dividing Specialized Market Area Zones, also known as Special Product Market Areas, of different Base Product Element (BPE) Model attributes or Model variations.

513 *Stone & Stone: Love on Fire and What It Means to Love*  
(1997)

(From section four)  
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 (From section ninety-nine)  
 (From section one hundred)

[illegible]

MAC5510  
x  
08/11/5  
Revised work (see the revision in Volume 20, 1995, Section of Civil Procedure)  
New code

[illegible]

December 16, 2007

For more information, contact the author or go to [www.sagepub.com](http://www.sagepub.com) or refer to the Community Map History Index located in the Annual Community Study report for this product.

MAP SCALE 1" = 2000'



PANEL 087BD

FIRM  
FLOOD INSURANCE RATE MAP

**MORROW COUNTY,  
OREGON**  
AND INCORPORATED AREAS

PANEL 0875 OF 1400

CONTING.  
COMPARITY

INSURANCE COMPANY  
UNIVERSITY OF CALIFORNIA  
UNIVERSITY OF CALIFORNIA  
UNIVERSITY OF CALIFORNIA

DOI: 10.1002/for

Notice is Given: The following meeting of the Board of Directors of the Community Foundation of the City of Chicago will be held on Friday, September 15, 2017, at 10:00 a.m. in the Board Room of the Community Foundation of the City of Chicago, 111 West Madison Street, 11th Floor, Chicago, Illinois 60602. The agenda for the meeting is as follows:

MAP NUMBER  
41049C08750

EFFECTIVE DATE



U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

NATIONAL


 EFFECTIVE DATE  
 DECEMBER 18, 2007

FEDERAL BUREAU OF INVESTIGATION



This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from locally derived sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

[illegible]

Coastal Zone Flood Elevations shown on the map apply only to a 100-year return period. The map should be used in conjunction with the National Oceanic and Atmospheric Administration's Coastal Flood Hazard Study Report for the jurisdiction. Elevations shown in the Summary of Statewide Flood Hazard Study Report for the jurisdiction should be used for construction and floodplain management purposes when they are higher than the elevations shown on the map.

Boundaries of the floodways were computed at cross sections and interpolations between cross sections. The floodways are based on hydraulic computations with regard to requirements of the National Flood Insurance Program. Floodways for large and other potential floodway cases are provided in the Flood Insurance Study report for the study area.

The projection used in the preparation of the map was Universal Transverse Mercator zone 11. The horizontal datum was NAD 83, GRS 80, International Earth-Satellite in orbit, geocentric projection of ITRF 94 used in the projection of fields for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this OSM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1986. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geospatial Vertical Datum of 1929 and the North American Vertical Datum of 1986, visit the National Geospatial Survey website at <http://www.ngs.noaa.gov> or contact the National Geospatial Survey at the following address:

1703 Information Services  
 1704A 170K517  
 National Academic Survey  
 SSIA.C.3. #202  
 1715 East-West Highway  
 Silver Spring, MD 20910-1702

To obtain current elevation, description and/or location information for banding marks shown on this map, please contact the Information Services Branch of the National Geographic Society at (202) 775-3262 or visit its website at <http://newways.ngeo.gov>.

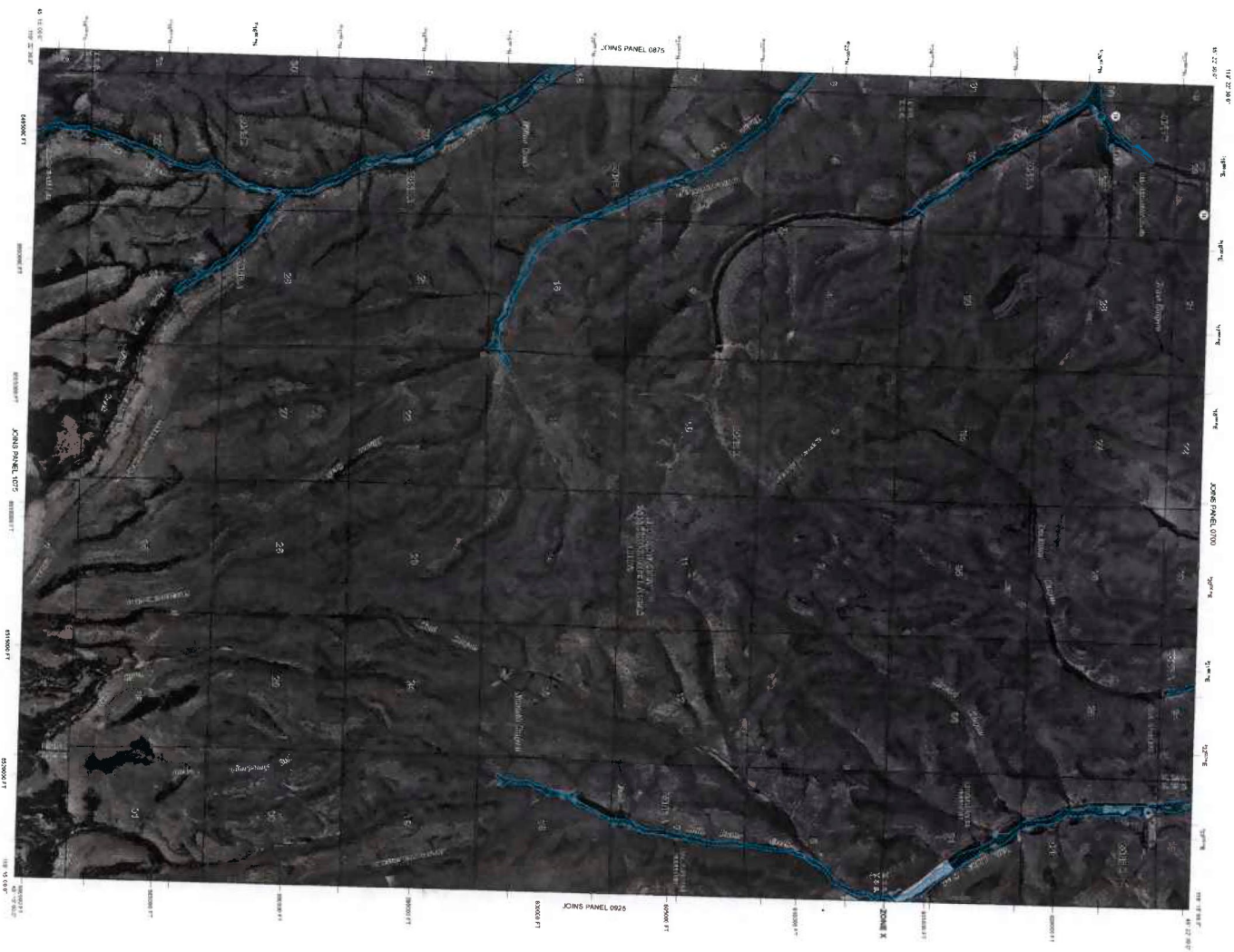
This map reflects more detailed and up-to-date stream channel configurations than maps were providing in digital format by the Oregon Geospatial Enterprise Office (GEO). The information was compiled from many local sources and includes transportation features, aerial features, political boundaries, and other data. Stream Network features, aerial photographs (year 2010/2011) were provided by the United States Geological Survey (USGS).

**Corporate limits shown on this map are based on the best data available at the time of publication. Please also reference state or environmental agency information for more information.**

Please refer to the separately printed MAP Index for an overview map of the country showing the layout of map sheets, community map identifiers, addresses and a listing of Communities (with containing National Food Insurance Program codes) for each community as well as a listing of the powers on which each community is located.

Contact the FEMA Map Service Center at 1-800-358-9470 for information and available products associated with this FEMA Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-202-358-9670 and its website at <http://www.fema.gov>

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at [www.fema.gov](http://www.fema.gov).

[illegible]

| Zone     | Mean depth (m) | Mean depth (ft) | Mean depth (m) | Mean depth (ft) | Mean depth (m) | Mean depth (ft) |
|----------|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| ZONE A1  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A2  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A3  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A4  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A5  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A6  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A7  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A8  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A9  | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A10 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A11 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A12 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A13 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A14 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A15 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A16 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A17 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A18 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A19 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A20 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A21 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A22 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A23 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A24 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A25 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A26 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A27 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A28 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A29 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A30 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A31 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A32 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A33 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A34 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A35 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A36 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A37 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A38 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A39 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A40 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A41 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A42 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A43 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A44 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A45 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A46 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A47 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A48 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A49 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A50 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A51 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A52 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A53 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A54 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A55 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A56 | 1.0            | 3.3             | 1.0            | 3.3             | 1.0            | 3.3             |
| ZONE A57 | 1.0            | 3.3             | 1.0            |                 |                |                 |

|          |                                                                                     |
|----------|-------------------------------------------------------------------------------------|
| ZONE VII | Control flood zone with velocity hazard (no river action); no flood flood direction |
| ZONE VI  | Control flood zone with velocity hazard (river action); flood flood direction       |
| ZONE V   | Control flood zone with velocity hazard (river action); no flood flood direction    |
| ZONE IV  | Control flood zone with velocity hazard (river action); no flood flood direction    |
| ZONE III | Control flood zone with velocity hazard (river action); no flood flood direction    |
| ZONE II  | Control flood zone with velocity hazard (river action); no flood flood direction    |
| ZONE I   | Control flood zone with velocity hazard (river action); no flood flood direction    |

**FLOODWAY AREAS IN ZONE AE**

**OTHER FLOOD AREAS**  
 Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with damage less than 1 volume foot, and areas protected by levees from 1% annual 2 foot flood.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

 **ZONE A**  
Area determined to be outside the 0.2% annual chance floodplain.  
Area in which flood hazards are undetermined but possible.

 **ZONE B**

 **OTHER BARRIER PROTECTED AREAS (OBPA)**

Cells A and C are normally (solid) cells; to be special (dotted) cells.

1% are of the A boundary.

0.2% are of the C boundary.

2% of the A boundary.

[illegible]

<sup>a</sup> Adapted from the North American Vertical Datum of 1988.

[illegible]

0 MAT 5      *Revised*

MAJOR REVISIONS

Review of timing of labor purchases on labor input

EFFECTIVE DATE OF COMPLETION

\*CCO-001 (medical, police, etc.)  
 October 18, 2007  
 EFFECTIVE DATE OF REVISION TO THIS POLICY

To determine if your insurance is adequate in this or any other event, contact your insurance agent or the Insurance Information Program at 1-800-453-4455.

Figure 1 is a schematic diagram of a rectangular structure, likely a dam or embankment, with a total length of 1000 ft and a width of 100 ft. The diagram is divided into three main sections: a 1000 ft long top section, a 2000 ft long middle section, and a 4000 ft long bottom section. The width is 100 ft. The diagram includes various internal dimensions and labels: '1000' at the top left, '2000' at the top right, '4000' at the bottom right, '100' at the bottom left, '1000' at the top center, '2000' at the top right, '4000' at the bottom right, '100' at the bottom left, '1000' at the top center, '2000' at the top right, '4000' at the bottom right, '100' at the bottom left. The diagram also includes labels for 'FEET' and 'METERS'.

|             |                                          |
|-------------|------------------------------------------|
| PANEL 09000 | <b>FIRM</b><br>ELIOT INSURANCE RATE MAID |
|-------------|------------------------------------------|

PROGRAM  
MORROW COUNTY,  
OREGON  
AND INCORPORATED AREAS

**PANEL 0900 OF 1400**  
(SEE MAP INDEX FOR FPM PANEL LAYOUT)  
CONTINUE

|                                      |      |        |
|--------------------------------------|------|--------|
| COMPANIES                            | NAME | DATE   |
| WATSON COUNTY<br>UNINCORPORATED AREA | EMEL | 2/1/11 |
| 10/17                                | 0600 |        |

**FLOOD**

Watch it Close! The Big Brother game below reveals a web of connections among 100 writers. The Community Institute for the Study of the Urban and Contemporary World is the sponsor.

MAP NUMBER  
4108C09000  
EFFECTIVE DATE

**DECEMBER 18, 2007**

**Federal Emergency Management Agency**

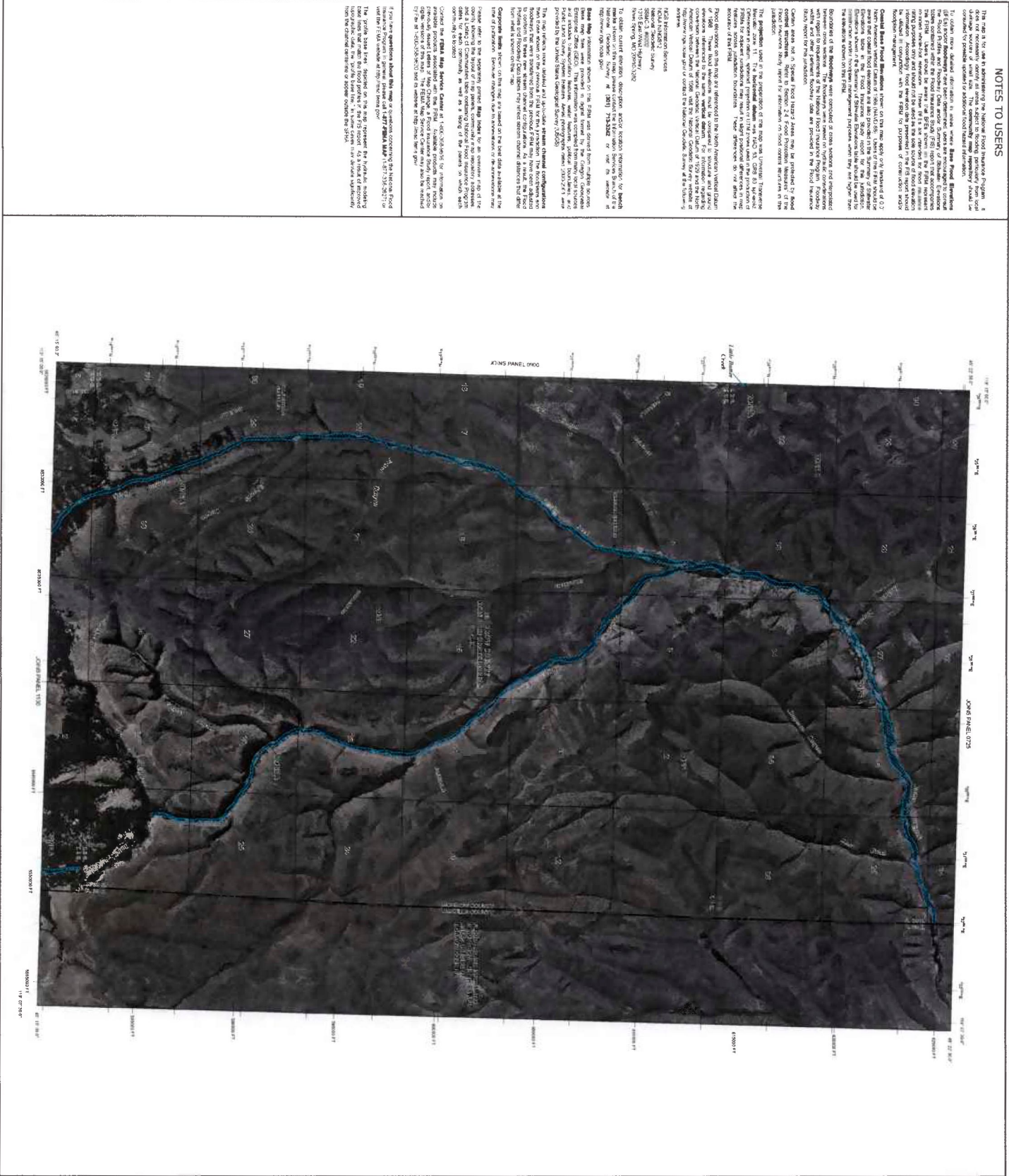
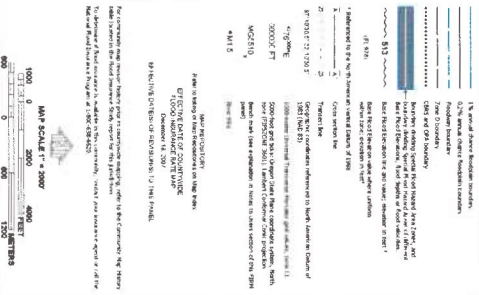


The map is key to understanding the National Flood Insurance Program (NFIP) and the way it has been used to protect the nation's coastal areas from damage caused by wind, tide, and storm surge. The extremely large map is divided into 100,000 square-mile units, each of which is assigned a risk rating. The ratings are based on the potential for predicted additional flood damage to structures.

Of the 100,000 square-mile units, 10,000 are in areas where **Basic Flood Insurance** is available. The remaining 90,000 are in areas where **Special Flood Insurance** is available. The **Basic Flood Insurance** is the standard flood insurance policy that is available to all property owners in the United States. The **Special Flood Insurance** is a policy that is available to property owners in areas where the risk of flooding is high. The **Special Flood Insurance** is a policy that is available to property owners in areas where the risk of flooding is high.

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[illegible][illegible]

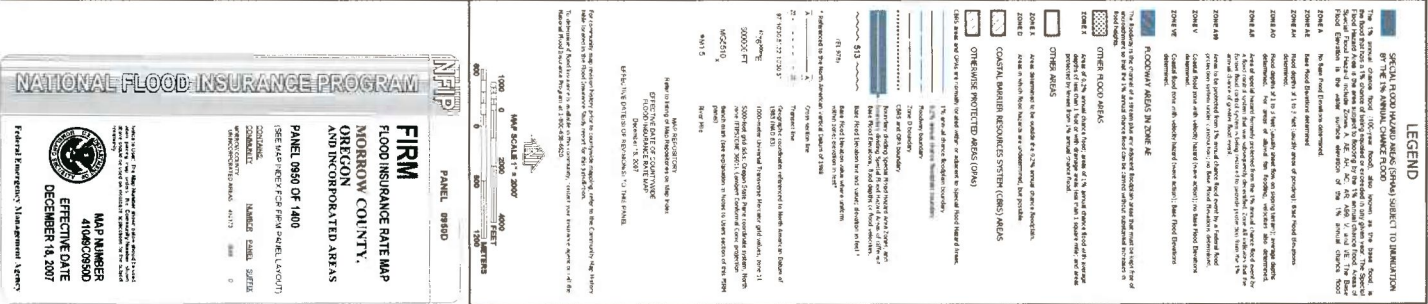


### LEGEND

[illegible]

To obtain current elevation, description and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geospatial Survey at (801) 733-3242 or visit its website at <http://www.ngs.noaa.gov/>.

If you have questions about this map or questions concerning the National Flood Insurance Program (NFIP), please call 1-877-452-4544 (MAP 1-877-326-3271) or visit the FEMA website at [nfp.fema.gov/](http://nfp.fema.gov/)





## LEGEND

**SPECIAL FLOOD HAZARD AREAS (SFHA) SUBJECT TO BRUNATION BY THE 1% ANNUAL CHANCE FLOOD**

| Zone   | Plot    | Plant    | Height | Width | Depth | Volume | Weight | Area | Volume | Weight | Area |
|--------|---------|----------|--------|-------|-------|--------|--------|------|--------|--------|------|
| Zone A | Plot 1  | Plant 1  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 2  | Plant 2  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 3  | Plant 3  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 4  | Plant 4  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 5  | Plant 5  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 6  | Plant 6  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 7  | Plant 7  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 8  | Plant 8  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 9  | Plant 9  | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 10 | Plant 10 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 11 | Plant 11 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 12 | Plant 12 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 13 | Plant 13 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 14 | Plant 14 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 15 | Plant 15 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 16 | Plant 16 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 17 | Plant 17 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 18 | Plant 18 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 19 | Plant 19 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 20 | Plant 20 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 21 | Plant 21 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 22 | Plant 22 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 23 | Plant 23 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 24 | Plant 24 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 25 | Plant 25 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 26 | Plant 26 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 27 | Plant 27 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 28 | Plant 28 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 29 | Plant 29 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 30 | Plant 30 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 31 | Plant 31 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 32 | Plant 32 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 33 | Plant 33 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 34 | Plant 34 | 1.0    | 1.0   | 1.0   | 1.0    | 1.0    | 1.0  | 1.0    | 1.0    | 1.0  |
| Zone A | Plot 35 | Plant 35 | 1.0    | 1.0   | 1.0   | 1.0    |        |      |        |        |      |

[illegible]

**ROADWAY AREAS IN ZONE AE**

The likelihood of the clearance of a roadway after any significant floodwaters means that flood insurance coverage is not needed for the physical structure, but can be for the contents and structural provisions in flood-prone areas.

**OTHER FLOOD AREAS**

☐ OTHER AREAS

Area: Switzerland to be outside the 0.1% annual change threshold.

Area in which Non-EMUs are concentrated, but possible

 CONSTITUTIONAL RESOURCES SYSTEM (CRS) AREAS

 OTHERWISE PROTECTED AREAS (OPAs)

\*This article and Units are currently "frozen" within its subject to Special Flood Hazard System.

© 1990, Federal Emergency Management Agency

[illegible][illegible]

**670938** 22-17-96  
**470938E**  
 2000X FT  
 04020510  
 Search mark has explanation in notes to start factors of two (RPM correct)

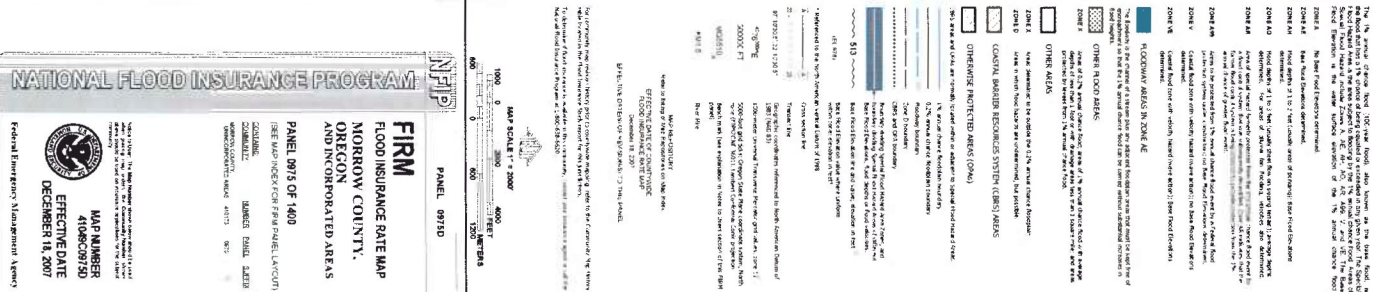
MASS. REG. - CONTINUED  
 ORDER IN REPLY TO 07-02 PHOTOGRAPH ON THIS PAGE.  
 EFFECTIVE DATE OF COUNTYWIDE  
 FLOOD INSURANCE RISK MAP  
 December 18, 2003

Dr Helen E. O'Shea is a Senior Lecturer in the Department of Psychology, University of York, UK. She is also a Senior Lecturer in the Department of Psychology, University of York, UK. She is also a Senior Lecturer in the Department of Psychology, University of York, UK.

MAP SCALE 1" = 2000'

0 2000 4000 FEET

0 2000 4000 METERS



**N.F.I.P.**

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**MORROW COUNTY,**

**OREGON**

**AND INCORPORATED AREAS**

**PANEL 0915 OF 1400**

**(SEE MAP INDEX FOR PANEL NUMBER)**

|                             |             |
|-----------------------------|-------------|
| <b>COMMITTEE</b>            | <b>DATE</b> |
| <b>DATE OF NEXT MEETING</b> | <b>DATE</b> |
| <b>DATE OF NEXT MEETING</b> | <b>DATE</b> |

**MAF NUMBER**

**4106080150**

**EFFECTIVE DATE**

**OCTOBER 14, 2007**

**UNITED STATES OF AMERICA**

**FEDERAL Emergency Management Agency**











## LEGEND

[illegible]

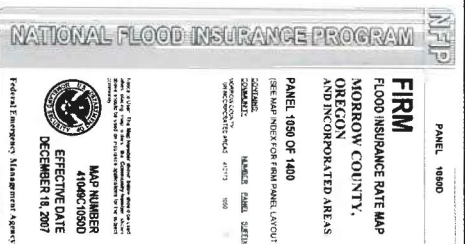
1% normal (range: 0.00-0.09) sensitivity  
0.7% normal (range: 0.00-0.09) specificity  
Foolowing Secondary  
Zone 0 secondary  
CMBS and CMA Secondary

[illegible]

For convenience, the following table is referred to as the *Inventory Map*. The *Inventory Map* is a summary of the *Inventory* and is used to identify the *Inventory* items that are to be included in the *Inventory* and to identify the *Inventory* items that are to be excluded from the *Inventory*.

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET





### LEGEND

[illegible][illegible]

**Zone VI** Coastal flood prone with velocity limited (inland areas); Base Flood Elevations determined.

The flexibility of the G Series of 4' x 8' panels allows you to design your flood walls to meet the height and length requirements of your project. The panels are designed to be joined together to create a continuous wall of any length and height. The panels are also designed to be joined together to create a continuous wall of any length and height.

OTHER AREAS ☐

**ZONE X**  
Area identified to be outside the 0.2% annual chance floodplain.  
**ZONE D**  
Areas in which flood hazards are undetermined, but possible.

OTHERWISE PROTECTED AREAS (OPAs)

**1% annual change** Real GDP per capita  
**0-2%** annual change Real GDP per capita  
Positive boundary  
Zero D country

**CRS and CRJ boundary**

Researcher drafted "Special Flood Hazard Area (SFHA)" and "Special Flood Hazard Insurance Rate (SFHAR)" maps for the study area. The maps were drafted by the researcher and were not subject to peer review. The maps were drafted by the researcher and were not subject to peer review. The maps were drafted by the researcher and were not subject to peer review.

Base positions after vowel elision  
with DGE reference in Vpi<sup>a</sup>

97 19.52°E, 72 17.10°E  
 1963 (MAD 6.1)

|                       |                                                                                                                                |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 4. $g_{\text{avg}}$ g | 1200 meters above Transverse Mercator grid station 100-11                                                                      |
| 300000 FT             | 5500 foot grid 50-1, Oregon State Plane coordinate system, North<br>over (TSPS/CNE 3001), standard Conformer's best projection |
| MSGS10                | Design marks (lake enclosures) in North to West sector of 12th TSPS                                                            |

© 2004  
M & S  
Direct Inc  
4400 PRESCOTT  
AVENUE

Refer to listing of VADs recorded as on VADs on this  
EFFECTIVE DATE OF COUNTDOWN  
FLOOD INSURANCE RATE VAN  
October 16, 2017

For commentary and reaction, please go to [community.oxfordjournals.org](http://community.oxfordjournals.org). Letters to the Editor will be published in the *Journal* if space permits. Letters should be sent to the Journal Manager. Send e-mail to [oxfordjournals@oxfordjournals.org](mailto:oxfordjournals@oxfordjournals.org).

To determine if *Phoxinus phoxinus* is available to fish for foraging, we used a model of the fish foraging behavior (see Program at: <http://www.fishbase.org>).

MAP SCALE 1" = 2000'

0 2000 4000 FEET

800 0 800 1200  
 PANEL 1075D  
 NEIP

FIRM

**FLOOD INSURANCE RATE MAP  
MORROW COUNTY,  
OREGON**

OREGON  
AND INCORPORATED AREAS

**PANEL 1073 OF 1400**  
 (SEE MAP INDEX FOR PPM PANEL LAYOUT)  
**CONTING.**

| COUNTY              | TAXID | EASE | DATE |
|---------------------|-------|------|------|
| WISCONSIN COUNTY    |       |      |      |
| UNINCORPORATED AREA | 41917 |      | 6/80 |

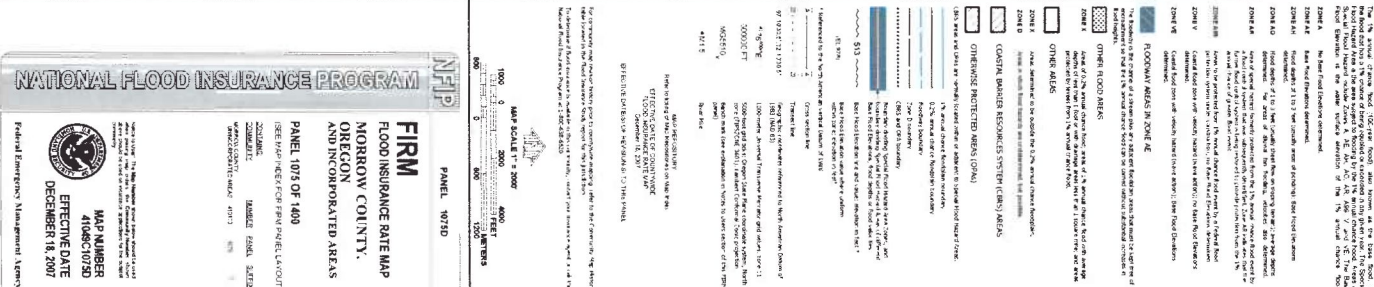
OD 11

March 19, 1978: The Mississippi River broke through a sand dune near New Orleans, the Christmas Eve storm's first major impact. The river flooded 100,000 acres, and the Corps of Engineers began evacuating 10,000 people. By the night of March 20, the Corps had evacuated 100,000 people.

MAP NUMBER  
41049C1075D  
EFFECTIVE DATE

**EFFECTIVE DATE**  
DECEMBER 18, 2007

Federal Emergency Management Agency





[illegible]

For more information, contact:  
 IACS Information Services  
 1100 Lakeview Drive  
 Suite 300  
 St. Louis, MO 63104  
 Tel: 314/433-3300  
 Fax: 314/433-3302  
 E-mail: [info@iacs.org](mailto:info@iacs.org)

Corporate clients shown on this map are based on the best data available at the time this map was prepared. The information shown on this map is not intended to be used for navigation. The information shown on this map is not intended to be used for navigation. The information shown on this map is not intended to be used for navigation.

For more questions about this topic or for advice concerning the National Food Resilience Program, to promote please call 1-877-PEPPER MAP, 1-877-336-7677 or visit the USDA website at <http://www.fnrp.gov>

**FLOODWAY AREAS IN ZONE AE**

The Floodway is the area of a stream that are adjacent the ordinary high water mark must be kept free of obstructions to flood flow. Any structure that can be carried without additional measures is considered a floodway.

**OTHER FLOOD AREAS**

OTHERWISE PROTECTED AREAS (OPMA)

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EFFECTIVE DRY-CELL CONTAINMENT  
FLOOD ABATEMENT PART II: A  
Case Study in 2007  
© 2011 by the author(s). All rights reserved.



This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources or small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Rice Flood Alteration** (R3) is a **problem**, we have defined several user-defined areas or enclosures to construct the **Rice Flood Alteration and Shading Data and Summary of Rice Area Enclosures** (R3A) database within the Flood Insurance Study (FIS) report and corresponding **Rice Flood Alteration and Shading Data and Summary of Rice Area Enclosures** (R3B) report. These R3A or R3B reports for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report enclosures should be evaluated in conjunction with the FIS report purposes of construction and/or floodplain management.

**Conclusion:** The Food Evaluation system in the Netherlands only included 0.5% of the total number of food products available in the market. The first evaluation wave did not include food evaluations and also provided in the Summary of Stakeholder Evaluation. In the Food Insurance Study report for the jurisdiction, Stakeholder Evaluation in the Summary of Stakeholder Evaluation was added to meet the requirements of the Food Insurance Study report. The higher the number of stakeholders, the more the Food Evaluation system on the FDBI.

[illegible]

For information on the  
NOLA AIDS-2  
National Geographic Society  
SSAC, 2020  
c/o The End AIDS Campaign  
New Orleans, LA 70112-1092

To obtain current eligibility, description, and/or location information for **search**  
**marks** submit the name, phone number, fax, e-mail address, Street address of the  
applicant (Geographic Society) at (800) 775-3252 or via e-mail at  
http://www.ngs.nola.gov

**Data.** Map information shown on this SRM was derived from multiple sources. First, map data were processed in digital format by the Cartography Section, Energy-South Office (ESO). The information was checked from many topographic sheets and included transportation features, water features, political boundaries, and place names. Survey System format, aerial photographs (scale 1:50,000-1:250,000) provided by the United States Geological Survey (USGS).

[illegible]

If you have questions about this map or questions concerning the National Egg-  
Incubation Program, it is available, please call: 1-877-FERMA MAP-1 (877-336-3637), or  
visit the: WA website at: <http://www.ferma.gov>



**SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

**ZONE A** No Base Flood Elevation determined.

|         |                                                                                                                                                     |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| ZONE AF | Flow Direction: downstream.                                                                                                                         |
| ZONE AH | Flow depth: 1 to 2 feet (usually more flow on bridge piers); average flow determined.                                                               |
| ZONE AO | Flow depth: 1 to 2 feet (usually more flow on bridge piers); average depth determined. For rest of channel flow depths, velocities also determined. |
| ZONE AB | Flow depth: 1 to 2 feet (usually more flow on bridge piers); average depth determined. For rest of channel flow depths, velocities also determined. |

**ZONE A-B**  
 Areas to be protected from the event. Covered at least once by a "Red Alert Flood" (or the equivalent status) within the 10-day period. Includes areas that are not in the "Red Alert Flood" zone, but are in the "Red Alert Flood" zone at least once during the 10-day period.

**FLOODWAY AREAS IN ZONE A2**

The floodway is the area that is adjacent to the design water that must be kept free of encumbrances so that if the normal device thereof can be used without unduly increasing flood heights.

**OTHER FLOOD AREAS**

Areas of 2.76 square chains flood; areas of 1.97 square chains flood only when depth of sea is less than 1 foot or only change within 15 ft. 11.5 square ft. and are excluded by letters from the annual flood list.

**OTHER AREAS**

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

OFFICIAL USE ONLY (OFO)

THIS AREA AND LABEL ARE NORMALLY PROTECTED, OFFER TO SPECIAL AGENTS ONLY

1. The area of the Kuchan boundary

2. The area of the Kuchan boundary

Produce boundary

[illegible]

1678) *Reinhold Messner* and *Walter Bonatti* were the first to reach the summit of Dhaulagiri in 1978. The first ascent of Annapurna was made by *Yves Fassin* and *René Lacroix* in 1950. The first ascent of Everest was made by *Edmund Hillary* and *Tenzing Norgay* in 1953. The first ascent of K2 was made by *George Band* and *Charles Evans* in 1955. The first ascent of Lhotse was made by *Walter Bonatti* and *René Lacroix* in 1956. The first ascent of Makalu was made by *Yves Fassin* and *René Lacroix* in 1957. The first ascent of Dhaulagiri was made by *Reinhold Messner* and *Walter Bonatti* in 1978. The first ascent of Annapurna was made by *Yves Fassin* and *René Lacroix* in 1950. The first ascent of Everest was made by *Edmund Hillary* and *Tenzing Norgay* in 1953. The first ascent of K2 was made by *George Band* and *Charles Evans* in 1955. The first ascent of Lhotse was made by *Walter Bonatti* and *René Lacroix* in 1956. The first ascent of Makalu was made by *Yves Fassin* and *René Lacroix* in 1957.

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| Sex    | Demolition | Re-use/Reuse | Material Use/Construction | Material Use/Construction |
|--------|------------|--------------|---------------------------|---------------------------|
| Male   | 100%       | 100%         | 100%                      | 100%                      |
| Female | 100%       | 100%         | 100%                      | 100%                      |

EFFECTIVE DATE OF COVENANTOR  
FLOOD INSURANCE RATE PLAN  
December 18, 2007  
Bdfile: 1766 Callahan Co. 4/24/2008 17:17 This email

single copies of the Flood Insurance Study report for the jurisdiction.

To determine if flood insurance is available for a community, visit a government website or call the National Flood Insurance Program at 1-800-625-6267.



MAP SCALE 1" = 2000'

0 1000 2000 4000 FEET

0 600 1200 METERS

PANEL 1125D

**FIRM**

**FLOOD INSURANCE RATE MAP  
MORROW COUNTY,  
OREGON  
AND INCORPORATED AREAS**

**PANEL 1125 OF 1400**  
(SEE MAP INDEX FOR FRP PANEL LAYOUT)

| INSURANCE | CONTACTS  | CLASS     | STATUS    |
|-----------|-----------|-----------|-----------|
| PROPERTY  | PROPERTY  | PROPERTY  | PROPERTY  |
| LIABILITY | LIABILITY | LIABILITY | LIABILITY |
| WARRANTY  | WARRANTY  | WARRANTY  | WARRANTY  |
| INSURANCE | INSURANCE | INSURANCE | INSURANCE |

[illegible]

MAP NUMBER  
41089C11250  
EFFECTIVE DATE

**EFFECTIVE DATE**  
DECEMBER 18, 2007

**Federal Emergency Management Agency**



the first step is to set an overarching, national flood insurance program. The program would be financed by a combination of federal and state or private sources of funds. The community most impacted would be required to provide a portion of the financing for the program.

To make sure flood reduction is achieved, the **Base Flood Elevation** (BFE) would be established for each community. The BFE is the minimum flood depth that would be expected to occur during the 100-year flood. The BFE would be based on the Federal Flood Insurance Study (FFIS) data. The BFE would be shown on the Flood Insurance Rate Map (FIRM) and would be used to determine the flood insurance rates for each community. The BFE would be used to determine the flood insurance rates for each community. The BFE would be used to determine the flood insurance rates for each community.

**Coastal Base Flood Elevation** (CBFE) is the minimum flood depth that would be expected to occur during the 100-year flood. The CBFE would be based on the Federal Flood Insurance Study (FFIS) data. The CBFE would be shown on the Flood Insurance Rate Map (FIRM) and would be used to determine the flood insurance rates for each community. The CBFE would be used to determine the flood insurance rates for each community.

The BFE would be used to determine the flood insurance rates for each community. The BFE would be used to determine the flood insurance rates for each community. The BFE would be used to determine the flood insurance rates for each community.

Surveys for the **bioenergy** were conducted in 2002. Producers and exporters of wood chips and wood pellets were interviewed. The survey included information on types of wood chips and pellets, production, and export. The survey also included information on the different types of wood chips and pellets, their uses, and the different types of wood chips and pellets. The survey also included information on the different types of wood chips and pellets, their uses, and the different types of wood chips and pellets. The survey also included information on the different types of wood chips and pellets, their uses, and the different types of wood chips and pellets.

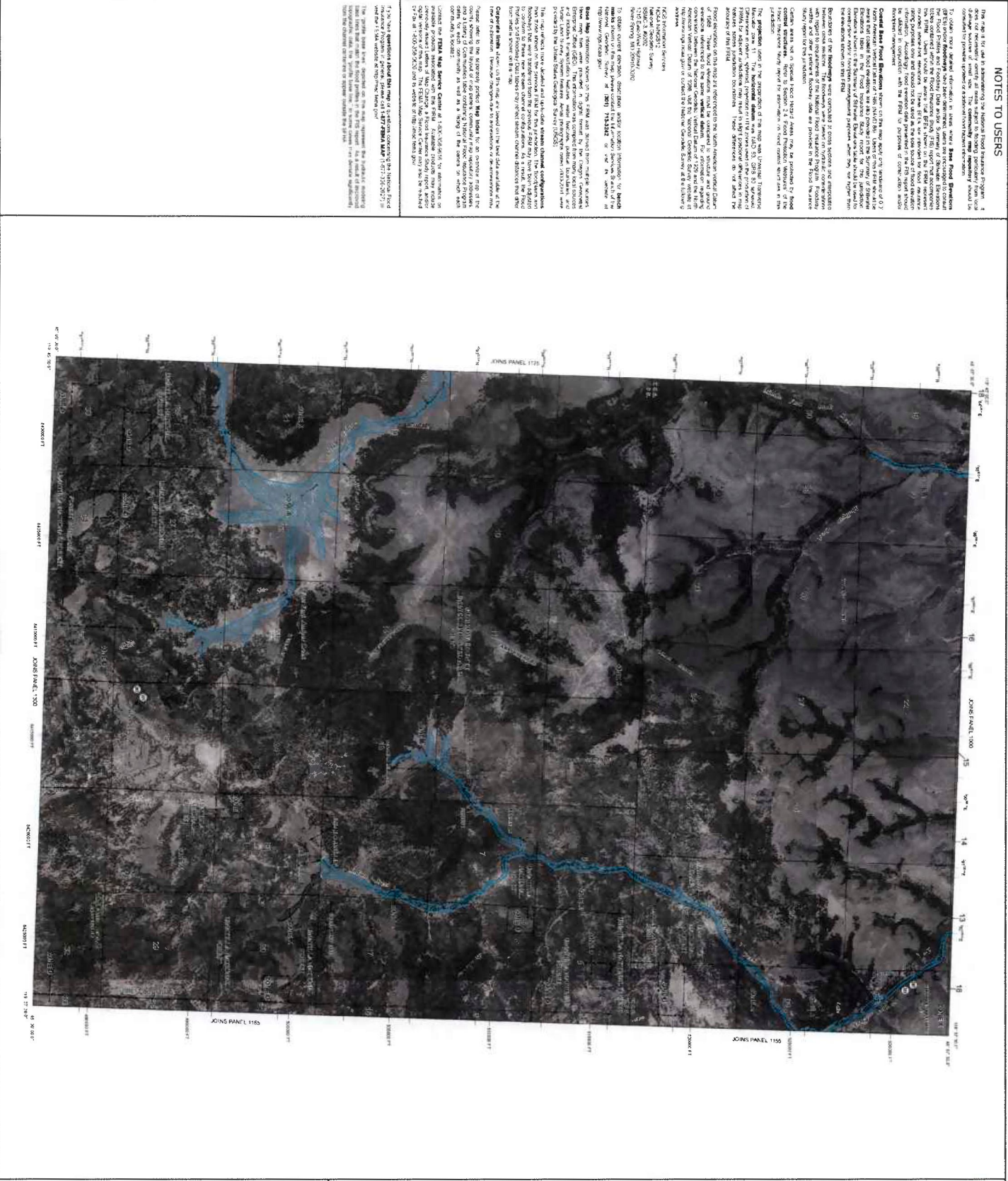
PCB Information Services  
HOLSA BAKOS 12  
National Geospatial Survey  
SSAIC 3, 40202  
1316 East-West Highway  
Silver Spring, MD 20910-3202

To obtain current election, election date and election information, visit [www.national.commerce.state.nv.us](http://www.national.commerce.state.nv.us).  
 National Commerce Service, 1001 7th Street, NE, Washington, DC 20002-4242

This study, we think, has a limited and a specific stream channel configuration, from moderate to steep, in the previous study. The flow rates were 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900, 3000, 3100, 3200, 3300, 3400, 3500, 3600, 3700, 3800, 3900, 4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700, 4800, 4900, 5000, 5100, 5200, 5300, 5400, 5500, 5600, 5700, 5800, 5900, 6000, 6100, 6200, 6300, 6400, 6500, 6600, 6700, 6800, 6900, 7000, 7100, 7200, 7300, 7400, 7500, 7600, 7700, 7800, 7900, 8000, 8100, 8200, 8300, 8400, 8500, 8600, 8700, 8800, 8900, 9000, 9100, 9200, 9300, 9400, 9500, 9600, 9700, 9800, 9900, 10000, 10100, 10200, 10300, 10400, 10500, 10600, 10700, 10800, 10900, 11000, 11100, 11200, 11300, 11400, 11500, 11600, 11700, 11800, 11900, 12000, 12100, 12200, 12300, 12400, 12500, 12600, 12700, 12800, 12900, 13000, 13100, 13200, 13300, 13400, 13500, 13600, 13700, 13800, 13900, 14000, 14100, 14200, 14300, 14400, 14500, 14600, 14700, 14800, 14900, 15000, 15100, 15200, 15300, 15400, 15500, 15600, 15700, 15800, 15900, 16000, 16100, 16200, 16300, 16400, 16500, 16600, 16700, 16800, 16900, 17000, 17100, 17200, 17300, 17400, 17500, 17600, 17700, 17800, 17900, 18000, 18100, 18200, 18300, 18400, 18500, 18600, 18700, 18800, 18900, 19000, 19100, 19200, 19300, 19400, 19500, 19600, 19700, 19800, 19900, 20000, 20100, 20200, 20300, 20400, 20500, 20600, 20700, 20800, 20900, 21000, 21100, 21200, 21300, 21400, 21500, 21600, 21700, 21800, 21900, 22000, 22100, 22200, 22300, 22400, 22500, 22600, 22700, 22800, 22900, 23000, 23100, 23200, 23300, 23400, 23500, 23600, 23700, 23800, 23900, 24000, 24100, 24200, 24300, 24400, 24500, 24600, 24700, 24800, 24900, 25000, 25100, 25200, 25300, 25400, 25500, 25600, 25700, 25800, 25900, 26000, 26100, 26200, 26300, 26400, 26500, 26600, 26700, 26800, 26900, 27000, 27100, 27200, 27300, 27400, 27500, 27600, 27700, 27800, 27900, 28000, 28100, 28200, 28300, 28400, 28500, 28600, 28700, 28800, 28900, 29000, 29100, 29200, 29300, 29400, 29500, 29600, 29700, 29800, 29900, 30000, 30100, 30200, 30300, 30400, 30500, 30600, 30700, 30800, 30900, 31000, 31100, 31200, 31300, 31400, 31500, 31600, 31700, 31800, 31900, 32000, 32100, 32200, 32300, 32400, 32500, 32600, 32700, 32800, 32900, 33000, 33100, 33200, 33300, 33400, 33500, 33600, 33700, 33800, 33900, 34000, 34100, 34200, 34300, 34400, 34500, 34600, 34700, 34800, 34900, 35000, 35100, 35200, 35300, 35400, 35500, 35600, 35700, 35800, 35900, 36000, 36100, 36200, 36300, 36400, 36500, 36600, 36700, 36800, 36900, 37000, 37100, 37200, 37300, 37400, 37500, 37600, 37700, 37800, 37900, 38000, 38100, 38200, 38300, 38400, 38500, 38600, 38700, 38800, 38900, 39000, 39100, 39200, 39300, 39400, 39500, 39600, 39700, 39800, 39900, 40000, 40100, 40200, 40300, 40400, 40500, 40600, 40700, 40800, 40900, 41000, 41100, 41200, 41300, 41400, 41500, 41600, 41700, 41800, 41900, 42000, 42100, 42200, 42300, 42400, 42500, 42600, 42700, 42800, 42900, 43000, 43100, 43200, 43300, 43400, 43500, 43600, 43700, 43800, 43900, 44000, 44100, 44200, 44300, 44400, 44500, 44600, 44700, 44800, 44900, 45000, 45100, 45200, 45300, 45400, 45500, 45600, 45700, 45800, 45900, 46000, 46100, 46200, 46300, 46400, 46500, 46600, 46700, 46800, 46900, 47000, 47100, 47200, 47300, 47400, 47500, 47600, 47700, 47800, 47900, 48000, 48100, 48200, 48300, 48400, 48500, 48600, 48700, 48800, 48900, 49000, 49100, 49200, 49300, 49400, 49500, 49600, 49700, 49800, 49900, 50000, 50100, 50200, 50300, 50400, 50500, 50600, 50700, 50800, 50900, 51000, 51100, 51200, 51300, 51400, 51500, 51600, 51700, 51800, 51900, 52000, 52100, 52200, 52300, 52400, 52500, 52600, 52700, 52800, 52900, 53000, 53100, 53200, 53300, 53400, 53500, 53600, 53700, 53800, 53900, 54000, 54100, 54200, 54300, 54400, 54500, 54600, 54700, 54800, 54900, 55000, 55100, 55200, 55300, 55400, 55500, 55600, 55700, 55800, 55900, 56000, 56100, 56200, 56300, 56400, 56500, 56600, 56700, 56800, 56900, 57000, 57100, 57200, 57300, 57400, 57500, 57600, 57700, 57800, 57900, 58000, 58100, 58200, 58300, 58400, 58500, 58600, 58700, 58800, 58900, 59000, 59100, 59200, 59300, 59400, 59500, 59600,

[illegible]

If you have questions about this map or question concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-325-2627) or visit the FEMA website at [map.fema.gov](http://map.fema.gov)



**THE NEW HOOK METHOD FOR FINDING SUBJECT TO DISAMBIGUATE**  
The new method is based on the following assumptions:  
1. The subject of the sentence is the noun or noun phrase that is the first element of the sentence.  
2. The subject of the sentence is the noun or noun phrase that is the first element of the sentence.  
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10. The subject of the sentence is the noun or noun phrase that is the first element of the sentence.

[illegible][illegible][illegible]

**NFIP**

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM**

**PANEL 11800**

**FLOOD INSURANCE RATE MAP**

**MORROW COUNTY,**

**OREGON**

**AND INCORPORATED AREAS**

**PANEL 1150 OF 1400**

**DATE OF REVISION FOR FIRM NUMBER: 1/6/07**

**2006 FIRM**

**COMMUNITY**

**MARLBOROUGH, ILLINOIS**

**UNINCORPORATED AREAS**

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This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

The major role in administering the National Flood Insurance Program (NFIP) is assigned to the Federal Emergency Management Agency (FEMA), and, not incidentally, some states, subject to backing, particularly from local governments, have been authorized to administer the program. The NFIP is administered by FEMA's Federal Insurance Administration (FIA), which is responsible for the program's day-to-day operations. FEMA's FIA is responsible for the program's day-to-day operations. FEMA's FIA is responsible for the program's day-to-day operations.

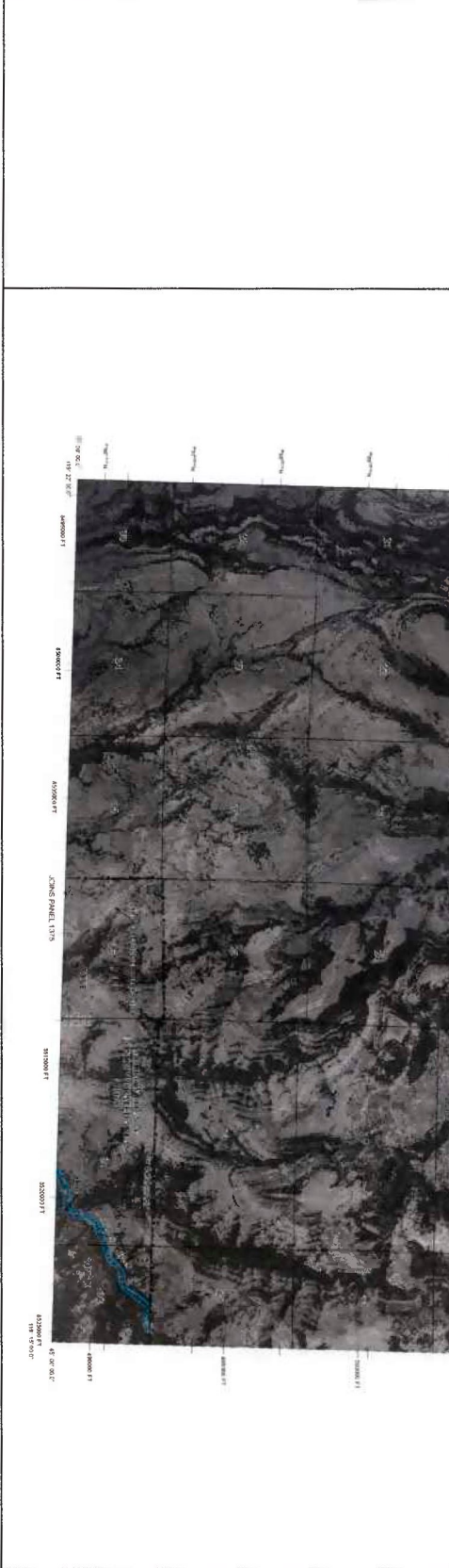
[illegible]

For a detailed career elevation, description, and/or location information for **Search results** listed on the map, please contact the Information Systems Branch of the National Geographic Society at (800) 775-3262 or visit the website at [www.nationalgeographic.com](http://www.nationalgeographic.com).

**Base Map** Information shown on the FPM was derived from multiple sources. Base map data were provided in digital format by the Oregon Geospatial Enterprise Office (GEO). This information was compiled from many data sources and includes topographic features, water features, political boundaries, and Public Land Survey System features. Aerial photographs dated 2000-2001 were provided by the United States Geological Survey (USGS).

[illegible]

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP, 1-877-326-2627, or visit our FEMA website at [www.fema.gov](http://www.fema.gov).



**SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO FLOODATION BY THE 1% ANNUAL CHANCE FLOOD**

**REDUCED FLOOD HAZARD AREAS (SHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**

The 1% annual chance flood (100-year flood, also known as the base flood, or base flood level) is the estimate of flooding expected to be in any given year. The base flood hazard shown on the Flood Hazard Map is the estimate of flooding expected to be in any given year. The base flood hazard shown on the Flood Hazard Map is the estimate of flooding expected to be in any given year. The base flood hazard shown on the Flood Hazard Map is the estimate of flooding expected to be in any given year.

**ZONE A** No base flood (waters are intermittent).

| ZONE A*                                                                                 | ZONE B†                                                                                 | ZONE C‡                                                                                 | ZONE D§                                                                                 |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Flood depths of 1 to 2 feet (usually areas of bottom); base flood elevation determined. | Flood depths of 1 to 2 feet (usually areas of bottom); base flood elevation determined. | Flood depths of 1 to 2 feet (usually areas of bottom); base flood elevation determined. | Flood depths of 1 to 2 feet (usually areas of bottom); base flood elevation determined. |

**2016E 149**  
degrees to be protected from 180° areas of dense flood water by a Federal flood control system under a National Flood Insurance Program. The National Flood Insurance Program is a Federal flood control system that was authorized by the National Flood Insurance Act of 1968. The National Flood Insurance Act of 1968 authorized the Federal Government to provide flood insurance to the United States of America.

**ZONE V**  
Usual blood count with slightly hazy (to be within); no toxic fluid elements determined.

**ZONE VI**  
Usual blood count with slightly hazy (to be within); some toxic elements determined.

**WOODWAY AGENS IN CONCRETE**

The Woodway is the Concrete of a 1940s plan with a 1950s twist: it means that it must be kept free of contaminants so that the 1940s character does not carry without substantial increases in floor height.

**COVERED IN GOOD AREAS**

OTHER AREAS

**ZONE A**  
Areas determined to be outside the 0.2% annual chance floodplain.  
Areas in which flood hazard is not undetermined but possible.

**OTHERWISE PROTECTED AREAS (OPAs)**

OPAs are land and OPA are normally located within or adjacent to Special Trust lands of a Tribe.

<sup>1</sup> The term of "Other Protected Area" is used.

0.2% organic chloride (wooden boundary)  
Friedberg boundary  
Tone D boundary  
C665 and C65 boundary

Food Production and Food Safety, 2013

1. preferred reading for a North American audience (if any)

1,500-meter, levelled Transverse Mercator grid values, from  
500-foot grid and 2015 Oregon State Plane Coordinate system. North  
zone (18N) (State Plane 5001). Lambert Conformal Conic projection.

WGS2510 x  
 Search mark (see explanation, 11 words to chart section of first 480  
 pages)  
 #M 1.5  
 River pole

RETURN TO: **INSURANCE COMPANY**  
 REF: IN RENEWAL OF YOUR POLICY ON 12/31/2007  
 EFFECTIVE DATE OF RENEWAL  
 \$1,000 INSURANCE RATE PLAN  
 December 18, 2007

For (currently) more detailed policy, see 13 (coordination in policy, refer to the currently 'Verg. 1995a' table) for details in the 'Model' section. With regard to the 'Policy' section.

For information, contact the Editor or the Manager of *Journal of Interpersonal Violence*, 10155 University Ave., Suite 100, Los Angeles, CA 90024. E-mail: [editor@jiv.sagepub.com](mailto:editor@jiv.sagepub.com).  
 Manuscript Preparation: Manuscripts should be typed double spaced on one side of the page. Please use the following guidelines for preparing your manuscript. For more information, please refer to the *Journal of Interpersonal Violence* Manuscript Preparation Guidelines, available at <http://jiv.sagepub.com>.

MAP SCALE 1" = 200'

0 2000 4000  
FEET

0 600 1200  
METERS

**PANEL 1225D**

**FIRM**  
FLOOD INSURANCE RATE MAP  
MORROW COUNTY

**OREGON  
AND INCORPORATED AREAS**

**PANEL 1225 OF 1400**  
(SEE MAP INDEX FOR SPREAD LAYOUT)  
**CONTAINS:**

| COMPANIES               | NUMBER  | PERCENT | DATE |
|-------------------------|---------|---------|------|
| WYOMING COUNTY          | 446,240 | 41.17%  | 1/28 |
| UNIONBROOKVILLE 446,240 | 41.17%  |         | 0    |

COD

MAP NUMBER

41049C12250  
EFFECTIVE DATE  
DECEMBER 18, 2007

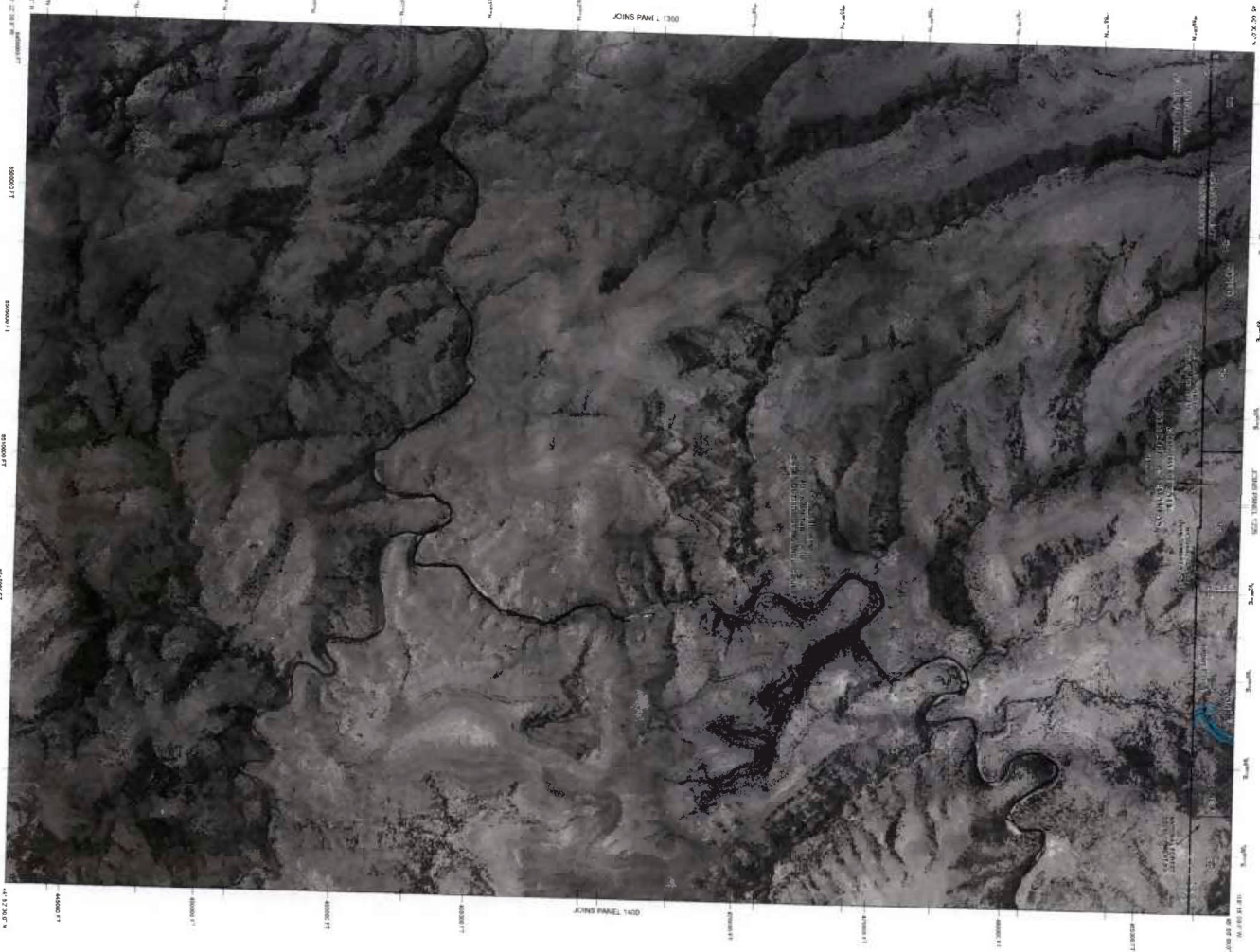
**Federal Emergency Management Agency**



## LEGEND

[illegible]

JOINS PANEL 1420



## NOTES TO USERS

[illegible]

Figure 1 shows a vertical strip of a grayscale image. The image displays a textured surface, likely a rock face or a wall, with various shades of gray and black. A vertical scale is visible on the right side of the image, ranging from 0 to 10000. The scale is marked with numbers at intervals of 1000, with '0' at the top and '10000' at the bottom. The image is oriented vertically, with the top of the image at the left and the bottom at the right.

67306617

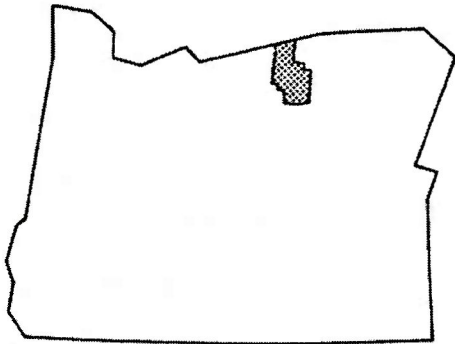


Exhibit 2

**FLOOD  
INSURANCE  
STUDY**



**MORROW COUNTY,  
OREGON AND  
INCORPORATED AREAS**



**COMMUNITY  
NAME**  
BOARDMAN, CITY OF  
HEPPNER, CITY OF  
IONE, CITY OF  
IRRIGON, CITY OF  
LEXINGTON, CITY OF  
MORROW COUNTY,  
UNINCORPORATED AREAS

**COMMUNITY  
NUMBER**  
410174  
410175  
410176  
410177  
410178  
410173

EFFECTIVE DATE:  
DECEMBER 18, 2007



**Federal Emergency Management Agency**  
Flood Insurance Study Number  
41049CV000A



**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.

Selected Flood Insurance Rate Map panels for the 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:

| <u>Old Zone</u> | <u>New Zone</u> |
|-----------------|-----------------|
| A1 through A30  | AE              |
| V1 through V30  | VE              |
| B               | X               |
| C               | X               |

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by a Letter of Map Revision process, which does not involve republication or redistribution of the FIS. 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.

Initial Countywide FIS Effective Date: December 18, 2007

Revised Countywide FIS Dates:



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| 1.2 Authority and Acknowledgements     | 1           |
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| Hinton Creek               | Panels 02P-03P |
| Little Blackhorse Canyon   | Panels 04P-06P |
| Lorraine Canyon            | Panel 07P      |
| Rietmann Creek             | Panel 08P      |
| Shobe Creek                | Panel 09P-11P  |
| Willow Creek               | Panels 12P-18P |

**PUBLISHED SEPARATELY**

|                                |
|--------------------------------|
| Flood Insurance Rate Map Index |
| Flood Insurance Rate Map       |

**FLOOD INSURANCE STUDY  
MORROW COUNTY, OREGON AND INCORPORATED AREAS**

**1.0 INTRODUCTION**

**1.1 Purpose of Study**

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Morrow County, including the Cities of Boardman, Heppner, Ione, Irrigon, and Lexington; and the unincorporated areas of Morrow County (referred to collectively herein as Morrow County), and aids in the administration of the National 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.

In some States or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. 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 report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by WEST Consultants, Inc., for the Federal Emergency Management Agency (FEMA), under Contract No. EMS-2001-CO-0068. This study was completed in November 2005.

**1.3 Coordination**

The initial Consultation Coordination Office (CCO) meeting was held on July 1977, and attended by representatives of the study contractor, FEMA, Morrow County, and the Cities of Heppner, Ione, Irrigon, and Lexington.

The results of the study were reviewed at the final CCO meeting held on May 1, 1980, and attended by representatives of the study contractor, FEMA, Morrow County, and the Cities of Heppner, Ione, Irrigon, and



Lexington. All problems raised at that meeting have been addressed in this study.

The final CCO meeting for this countywide FIS report was held on December 4, 2006. It was attended by representatives of FEMA, Morrow County, Oregon State Department of Land Conservation and Development, WEST Consultants, Inc., and the Cities of Heppner and Lexington.

## **2.0 AREA STUDIED**

### **2.1 Scope of Study**

This FIS report covers the geographic area of Morrow County, Oregon, including the incorporated communities listed in Section 1.1. The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon, by FEMA and the community.

### **2.2 Community Description**

Morrow County comprises a 2,059-square-mile area in north-central Oregon. It is bordered by Columbia River to the north, Umatilla County to the east, Grant County to the south, Wheeler County to the southwest, and Gilliam County to the west.

The estimated population in 2004 was 11,681. This was an increase of 6.24% from the 2000 census (Reference 1).

The Morrow County flood plains are occupied and surrounded by commercial, industrial, residential, and public utility areas.

The topography varies from steep, forested slopes and narrow canyons in the Blue Mountains of southern Morrow County to a gently sloping plateau of the Columbia River plain in the north. The watershed elevations range from less than 200 feet at the mouth of Willow Creek to 6,000 feet at Black Mountain.

The climate of Willow Creek basin, which is the chief drainage basin in the county, is semiarid. The normal-annual precipitation ranges from 8 inches at the mouth to approximately 34 inches in the headwaters of the

basin. Summers are dry, with much of the annual precipitation occurring during winter and spring. The average annual temperature is 50°F with recorded extreme temperatures above 100°F in the summer and below 0°F in the winter.

The soils are suitable for grass and forest production in the ravines and canyons of southern Morrow County, with soils suitable for cropland cultivation in central and northern Morrow County.

#### City of Heppner

Heppner is located in central Morrow County. It is situated along Willow Creek, approximately 40 miles south of Boardman, and Interstate Highway 80. The community is surrounded by unincorporated areas of Morrow County.

The city was incorporated in 1887 and has been the county seat since 1885. The population of Heppner in 2003 was 1,435 (Reference 1).

Heppner is in a narrow valley where Hinton Creek, Shobe Creek, and Balm Fork flow into Willow Creek. The Willow Creek basin is approximately 60 miles long and has a maximum width of 23 miles. The city is surrounded by rolling hills, and elevations range from 2,300 feet to over 5,900 feet.

The flood plains in Heppner are highly developed for both commercial and residential uses.

Soils in the area are sandy loams and support vegetation consisting of sagebrush and greasewood.

#### City of Lexington

Lexington is in central Morrow County and is surrounded by unincorporated areas of Morrow County.

The city was incorporated in 1903 and had a population of 273 in 2003 (Reference 1).

Lexington lies within the Willow Creek basin, an elongated, 890 square mile area. The basin is approximately 60 miles long and has a maximum width of 23 miles. At Lexington, the valley is approximately 0.5 mile wide and is surrounded by rolling hills with elevations up to 1,800 feet (Reference 2).



The flood plains in Lexington are developed primarily for residential use, but there is a small commercial area along Main Street near Blackhorse Canyon.

Soils in the area are sandy loams, and they support vegetation consisting of sagebrush and greasewood.

#### City of Ione

The City of Ione is located along Willow Creek, approximately 18 miles downstream from the City of Heppner and 9 miles northwest of the City of Lexington, in western Morrow County, in northern Oregon. It is surrounded by unincorporated areas of the county.

Lorraine and Rietmann Creeks flow into Willow Creek at Ione.

Ione had a population of 332 in 2003 (Reference 1). The city lies in a steeply walled valley, where the topography of the developed portion of the city on the valley floor is flat. The surrounding hillsides rise rapidly from an elevation of 1,080 feet to 1,600 feet. The ground water table in the valley floor is high in areas immediately adjacent to Willow Creek (Reference 3).

Land use in the city is primarily residential with a small commercial area along Main Street.

### **2.3 Principal Flood Problems**

There are three types of floods common to Willow Creek basin. One type of flooding occurs when a period of annual high water develops in early spring from melting snow, occasionally augmented by rainstorms. These flows seldom exceed channel capacities. A second type is caused by winter-rain snowmelt which usually occurs from December through February. It results from above average snowfall on frozen ground followed by warm rains. However, the most damaging floods in the basin are caused by violent summer thunderstorms with intense rainfall.

Floods of significant size occurred in 1885, 1888, 1891, 1903, 1904, 1917, 1918, 1961, 1965, 1971, 1979, 1983, and 1997. The May 1971 flood was caused by a thunderstorm at Heppner which resulted in a flash flood in Shobe Canyon. Its estimated peak discharge was 6,000 cubic feet per second (cfs), with an estimated recurrence interval exceeding the 0.2-percent-annual-chance flood. A very destructive flood occurred in June 1903. The storm centered in the headwaters area of Balm Fork and Willow Creek above Heppner and caused the death of 247 persons. It was estimated to have had a peak discharge of 36,000 cfs and a 0.28-percent

annual chance flood above the confluence of Balm Fork and Willow Creek.

The rugged nature of the terrain and sparse vegetative cover of the watershed along with sudden occurrences of thunderstorms all combine to cause these destructive cloudburst floods.

#### **2.4 Flood Protection Measures**

The only flood protection structure in the Willow Creek basin is the U.S. Army of Corps of Engineers (USACE) Willow Creek Dam, constructed in 1982, and located on Willow Creek directly upstream from the City of Heppner, and just downstream from the junction of Balm Fork and Willow Creek. The gross storage capacity of the Willow Creek Lake is 13,250 acre-feet, of which 11,250 acre-feet will be exclusively flood-control space. The remaining 2,000 acre-feet are maintained for aesthetics, fish, wildlife, recreation, and sediment accumulation.

The National Weather Service provides flash-flood forecasts and warnings under its Flash Flood Alert, Watch, and Warning Program. The City of Heppner and Morrow County, in cooperation with the National Weather Service and Defense Civil Preparedness Agency, have established a Flash Flood Alarm System and Warning Plan. The inhabitants of Heppner and the industries along the streams are warned of approaching flood conditions by a siren and are advised to evacuate the area.

### **3.0 ENGINEERING METHODS**

For the flooding sources studied by detailed methods 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 that is 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 floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year flood, 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 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein 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 analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

In November 2002, the City of Heppner, Oregon, requested a review of the effective flood discharges for their community. At the request of FEMA Region X, Michael Baker, Jr., Inc. reviewed the USACE 1978 hydrologic analyses (Reference 4) for streams in Heppner. By comparing to gaging data in the vicinity of Morrow County and extreme floods in eastern Oregon, it was concluded that the actual effective base flood discharges computed using the USACE approach were unreasonably high (Reference 5).

The USACE, Portland District, reviewed the original 1978 flood frequency analysis for Shobe and Hinton Creek. The USACE believed that the flood frequency discharges for thunderstorm events would be reduced and made revisions to the original study.

WEST Consultants, Inc. also reviewed the 1978 USACE hydrologic study. The 1978 study used the 1903 and 1934 floods to develop the thunderstorm frequency flows. Plotting positions of 0.007 and 0.0171 were assigned to these two floods since they were the two largest from 1875 through 1974 (a 99-year period). A thunderstorm frequency curve was developed based on these historic floods and synthetic frequency floods. However, because the exact frequency for the 1903 floods is unknown, the exact plotting point for the 1903 flood is uncertain. The Bureau of Reclamation (Reference 6) believes that the 1903 flood was overestimated and suggested that the peak discharge might be the result of a “dam break”.

Based on all the above discussions, WEST Consultants, Inc. conducted detailed hydrologic analyses to determine the 10-, 2-, 1-, and 0.2-percent annual chance discharges to be used in this FIS report. A regional regression analysis using the hybrid method was conducted to develop regression equations (Reference 7). Compared to conventionally developed regression equations, the hybrid regression equation uses all peak records at gaging stations and a number of historic thunderstorm peak discharges at miscellaneous sites throughout a region. Therefore, the hybrid regression equation is able to reflect the impact of thunderstorms on flood frequency flows, which is a very important watershed characteristic for watersheds in Morrow County.

The developed hybrid regression equations for the 10-, 2-, and 1-percent annual chance discharges were applied to the study basins for the full

range of drainage area. The 0.2-percent-annual chance discharges for the study streams were estimated by extrapolating the 10-, 2-, and 1-percent annual chance discharges, which were computed using the hybrid regression equations.

The proposed 1-percent annual chance discharges were compared to gaging data, 1-percent annual chance discharges from the flood frequency analysis for Willow Creek at Heppner and Balm Fork, discharges calculated using the Oregon Department of Transportation (ODOT) flash flood equation, and maximum observed peak discharges in the vicinity of Morrow County. Based on comparisons, the proposed discharges are considered reasonable and, therefore, recommended for use in this FIS report.

Peak discharge-drainage area relationships for Willow Creek; the Cities of Heppner, Lexington, and Ione; and Morrow County Unincorporated Areas are shown in Table 1, Summary of Discharges.

### **3.2 Hydraulic Analyses**

Analyses of the hydraulic characteristics of flooding from the sources studied 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 Flood Insurance Rate Map (FIRM) represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables 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 this FIS in conjunction with the data shown on the FIRM.

A steady flow model of the system was developed by WEST Consultants, Inc. using HEC-RAS Version 3.1.3 to model the 10-, 2-, 1-, and 0.2-percent annual-chance floods (Reference 8).

Cross sections for the streams in the areas were obtained from 2 foot contours and ground surveys. The aerial flights were made September 2004 and the surveys occurred between August and October 2004, and in May 2005. All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the FIRM.



Table 1. Summary of Discharges

| FLOODING SOURCE AND LOCATION                           | DRAINAGE AREA<br>(SQUARE MILES) | PEAK DISCHARGES (CFS)        |                             |                             |                               |
|--------------------------------------------------------|---------------------------------|------------------------------|-----------------------------|-----------------------------|-------------------------------|
|                                                        |                                 | 10-Percent-<br>Annual-Chance | 2-Percent-<br>Annual-Chance | 1-Percent-<br>Annual-Chance | 0.2-Percent-<br>Annual-Chance |
| WILLOW CREEK                                           |                                 |                              |                             |                             |                               |
| Above confluence with Shobe Creek                      | 97.2                            | 220 <sup>1</sup>             | 370 <sup>1</sup>            | 500 <sup>1</sup>            | 19,066                        |
| Above confluence with Hinton Creek                     | 104.1                           | 296                          | 1,334                       | 2,516                       | 19,538                        |
| Below confluence with Hinton Creek                     | 146.9                           | 1,057                        | 3,738                       | 6,069                       | 22,090                        |
| Below confluence with Little Blackhorse Canyon         | 152.4                           | 1,131                        | 3,948                       | 6,360                       | 22,381                        |
| Above confluence with Blackhorse Canyon                | 178.3                           | 1,448                        | 4,826                       | 7,551                       | 23,669                        |
| Below confluence with Blackhorse Canyon                | 201.5                           | 1,703                        | 5,504                       | 8,447                       | 24,722                        |
| At lone                                                | 507.8                           | 4,116                        | 11,254                      | 15,565                      | 34,369                        |
| HEPPNER, OREGON                                        |                                 |                              |                             |                             |                               |
| Shobe Creek                                            | 6.9                             | 296                          | 1,334                       | 2,516                       | 7,428                         |
| Hinton Creek                                           | 42.5                            | 955                          | 3,444                       | 5,660                       | 14,198                        |
| LEXINGTON, OREGON                                      |                                 |                              |                             |                             |                               |
| Unnamed Tributary of Blackhorse Canyon                 | 1.3                             | 101                          | 558                         | 1195                        | 4098                          |
| Blackhorse Canyon above confluence with unnamed Canyon | 21.5                            | 616                          | 2,413                       | 4,177                       | 11,137                        |
| Blackhorse Canyon below confluence with unnamed Canyon | 22.9                            | 642                          | 2,494                       | 4,296                       | 11,390                        |
| IONE, OREGON                                           |                                 |                              |                             |                             |                               |
| Rietmann Canyon                                        | 3.0                             | 173                          | 863                         | 1,735                       | 5,520                         |
| Lorraine Canyon                                        | 0.3                             | 39                           | 260                         | 621                         | 2,431                         |
| MORROW COUNTY UNINCORPORATED                           |                                 |                              |                             |                             |                               |
| Balm Fork                                              | 26.9                            | 712                          | 2,713                       | 4,616                       | 12,063                        |
| Little Blackhorse Canyon                               | 2.7                             | 162                          | 817                         | 1,656                       | 5,316                         |

cfs -cubic feet per second

<sup>1</sup>Regulated values are from Willow Creek Lake Water Control Manual 2003

Roughness factors (Manning's 'n') used in the hydraulic computations were based on field inspections during the cross-section survey and from the 2004 aerial photos. Roughness values are listed in Table 2. A sensitivity analysis was conducted to the final Manning's 'n' values by increasing the overbank and channel 'n' values by  $\pm 0.1$  and noted that there were not any significant changes in the results. These analyses are included in the HEC-RAS models provided to FEMA as part of the hydraulic modeling review process. No calibration data were identified for this study.

Table 2 - Manning's 'n' Values

|                          | <b>Main Channel <i>n</i></b> | <b>Overbanks <i>n</i></b> |
|--------------------------|------------------------------|---------------------------|
| Willow Creek - Ione      | 0.045                        | 0.040 - 0.100             |
| Willow Creek - Lexington | 0.035 - 0.055                | 0.040 - 0.100             |
| Willow Creek - Heppner   | 0.045                        | 0.040 - 0.150             |
| Balm Fork                | 0.040                        | 0.040                     |
| Blackhorse Canyon        | 0.045                        | 0.040 - 0.100             |
| Hinton Creek             | 0.045                        | 0.040 - 0.150             |
| Little Blackhorse Canyon | 0.040 - 0.050                | 0.040 - 0.080             |
| Lorraine Canyon          | 0.045                        | 0.040 - 0.070             |
| Rietmann Creek           | 0.045                        | 0.040 - 0.050             |
| Shobe Creek              | 0.040 - 0.045                | 0.040 - 0.120             |

Starting water-surface elevations were specified at the downstream end of each reach based on the ground slope near the downstream end of each model reach.

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1).

Hydraulic models yielded critical depth at numerous locations even after various modifications were done to the RAS models, including varying the Manning's 'n' value and adding interpolated cross-sections. The floodway analysis was conducted based on a 1 foot increase in the energy grade line. The effective encroachment widths were also used to help define the floodway (References 9, 10, 11, and 12). The floodway tables are shown in the "Floodway Data Tables" (Table 4) later in this report. In some cases, the 1-percent-annual chance water surface was confined within the main channel and therefore typically an energy increase of zero is listed.

Elevations for floods of 1-percent-annual-chance flood for Willow Creek Lake are shown in Table 3. This table overrides the old study data on Balm Fork. The previously studied cross sections on Balm Fork are superseded by the water surface elevation of Willow Creek Lake.



Table 3. Summary of Elevations

| Flooding Source   | Elevation (Feet NAVD)       |   |        |     |
|-------------------|-----------------------------|---|--------|-----|
|                   | % Annual Chance of Flooding |   |        |     |
|                   | 10                          | 2 | 1      | 0.2 |
| Willow Creek Lake | -                           | - | 2117.0 | -   |

Detail-studied streams that were not re-studied as part of this map update may include a “profile base line” on the maps. This “profile base line” provides a link to the flood profiles included in the FIS report. The detail-studied stream centerline may have been digitized or redelineated as part of this revision. The “profile base lines” for these streams were based on the best available data at the time of their study and are depicted as they were on the previous FIRMs. In some cases where improved topographical data was used to redelineate floodplain boundaries, the “profile base line” may deviate significantly from the channel centerline or may be outside the SFHA.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

### 3.3 Vertical Datum

All FIS reports 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 used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov), or contact the National Geodetic Survey at the following address:

NGS Information Services  
NOAA, N/NGS12  
National Geodetic Survey  
SSMC-3, #9202  
1315 East-West Highway

Silver Spring, Maryland 20910-3282  
(301) 713-3242  
(301) 713-4172 (fax)

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 the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

#### **4.0 FLOODPLAIN MANAGEMENT APPLICATIONS**

The NFIP encourages State and local government to adopt sound floodplain management programs. To assist in this endeavor, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community 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. For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 2 feet (Reference 13).

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM. On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. 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.

For the streams studied by approximate, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM.

Approximate 1-percent-annual-chance floodplain boundaries in some portions of the study area were taken directly from the Flood Hazard Boundary Map for Morrow County (Reference 14).

#### **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 a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 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 floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 4, Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

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

| FLOODING SOURCE   |                       | FLOODWAY         |                              |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD<br>WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-------------------|-----------------------|------------------|------------------------------|---------------------------------|----------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION     | DISTANCE <sup>1</sup> | WIDTH<br>(FEET)  | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                                | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>3</sup><br>(FEET) |
| BLACKHORSE CANYON |                       |                  |                              |                                 |                                                          |                                    |                                 |                                 |
| A                 | 0                     | 235              | 989                          | 4.3                             | 1,442.3                                                  | 1,440.1 <sup>2</sup>               | 1,441.1                         | 0.9                             |
| B                 | 222                   | 270              | 772                          | 5.6                             | 1,444.2                                                  | 1,444.0 <sup>2</sup>               | 1,444.4                         | 1.0                             |
| C                 | 635                   | 328              | 1,229                        | 3.5                             | 1,449.2                                                  | 1,449.2                            | 1,449.9                         | 1.0                             |
| D                 | 979                   | 293              | 1,275                        | 3.4                             | 1,454.9                                                  | 1,454.9                            | 1,455.7                         | 0.8                             |
| E                 | 1,328                 | 185              | 962                          | 4.5                             | 1,456.9                                                  | 1,456.9                            | 1,457.7                         | 1.0                             |
| F                 | 1,532                 | 189 <sup>4</sup> | 886                          | 4.7                             | 1,458.0                                                  | 1,458.0                            | 1,458.9                         | 1.0                             |
| G                 | 1,611                 | 175 <sup>4</sup> | 589                          | 7.1                             | 1,458.9                                                  | 1,458.9                            | 1,459.5                         | 0.8                             |
| H                 | 2,146                 | 101              | 428                          | 9.8                             | 1,467.4                                                  | 1,467.4                            | 1,467.7                         | 0.8                             |
| I                 | 2,593                 | 75               | 405                          | 10.3                            | 1,473.2                                                  | 1,473.2                            | 1,474.0                         | 0.9                             |
| J                 | 3,009                 | 61               | 346                          | 12.1                            | 1,479.5                                                  | 1,479.5                            | 1,479.5                         | 0.9                             |

<sup>1</sup>Feet above confluence with Willow Creek

<sup>2</sup>Elevation computed without consideration of backwater effects from Willow Creek

<sup>3</sup>In Specific Energy

<sup>4</sup>Top width does not match the width shown on map

| FLOODWAY DATA     |  |
|-------------------|--|
| BLACKHORSE CANYON |  |

FEDERAL EMERGENCY MANAGEMENT AGENCY

MORROW COUNTY, OR  
AND INCORPORATED AREAS

TABLE 4



| FLOODING SOURCE |                       | FLOODWAY        |                               |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-----------------|-----------------------|-----------------|-------------------------------|---------------------------------|-------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET) | SECTION<br>AREA<br>(SQ. FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                             | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>2</sup><br>(FEET) |
| HINTON CREEK    |                       |                 |                               |                                 |                                                       |                                    |                                 |                                 |
| A               | 0                     | 271             | 851                           | 6.7                             | 1,927.4                                               | 1,927.4                            | 1,928.4                         | 0.9                             |
| B               | 15                    | 261             | 935                           | 6.1                             | 1,928.0                                               | 1,928.0                            | 1,928.8                         | 0.8                             |
| C               | 176                   | 252             | 921                           | 6.1                             | 1,932.5                                               | 1,932.5                            | 1,932.5                         | -0.4                            |
| D               | 220                   | 200             | 842                           | 6.7                             | 1,932.6                                               | 1,932.6                            | 1,932.8                         | 0.9                             |
| E               | 352                   | 219             | 1,294                         | 4.4                             | 1,936.1                                               | 1,936.1                            | 1,936.8                         | 1.0                             |
| F               | 436                   | 153             | 851                           | 6.7                             | 1,936.7                                               | 1,936.7                            | 1,937.0                         | 0.8                             |
| G               | 538                   | 166             | 974                           | 5.8                             | 1,938.2                                               | 1,938.2                            | 1,939.0                         | 0.9                             |
| H               | 910                   | 145             | 972                           | 5.8                             | 1,948.8                                               | 1,948.8                            | 1,949.3                         | 0.7                             |
| I               | 1,315                 | 44              | 356                           | 15.9                            | 1,953.1                                               | 1,953.1                            | 1,953.1                         | 0.1                             |
| J               | 1,637                 | 87              | 673                           | 8.4                             | 1,961.9                                               | 1,961.9                            | 1,962.0                         | 0.7                             |
| K               | 2,320                 | 363             | 1,284                         | 4.4                             | 1,967.1                                               | 1,967.1                            | 1,967.9                         | 0.9                             |
| L               | 2,561                 | 370             | 1,366                         | 4.1                             | 1,970.7                                               | 1,970.7                            | 1,971.6                         | 0.9                             |
| M               | 2,945                 | 340             | 1,344                         | 4.2                             | 1,974.8                                               | 1,974.8                            | 1,975.5                         | 0.8                             |
| N               | 3,195                 | 225             | 677                           | 8.4                             | 1,977.3                                               | 1,977.3                            | 1,978.0                         | 0.9                             |
| O               | 4,117                 | 74              | 422                           | 13.4                            | 1,990.2                                               | 1,990.2                            | 1,990.2                         | 0.0                             |
| P               | 5,030                 | 41              | 374                           | 15.1                            | 2,005.0                                               | 2,005.0                            | 2,005.1                         | 0.1                             |
| Q               | 6,542                 | 114             | 540                           | 10.5                            | 2,026.4                                               | 2,026.4                            | 2,026.4                         | 0.7                             |
| R               | 7,573                 | 308             | 1,661                         | 3.4                             | 2,037.2                                               | 2,037.2                            | 2,038.1                         | 1.0                             |
| S               | 8,179                 | 148             | 554                           | 10.2                            | 2,046.2                                               | 2,046.2                            | 2,046.6                         | 0.9                             |

<sup>1</sup>Feet above confluence with Willow Creek  
<sup>2</sup>In Specific Energy

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MORROW COUNTY, OR**  
 AND INCORPORATED AREAS

FLOODWAY DATA  
**HINTON CREEK**

| FLOODING SOURCE         |                       | FLOODWAY        |                              |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD<br>WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-------------------------|-----------------------|-----------------|------------------------------|---------------------------------|----------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION           | DISTANCE <sup>1</sup> | WIDTH<br>(FEET) | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                                | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>2</sup><br>(FEET) |
| LITTLE BLACKHORSE CREEK |                       |                 |                              |                                 |                                                          |                                    |                                 |                                 |
| A                       | 0                     | 152             | 567                          | 5.1                             | 1,871.7                                                  | 1,871.7                            | 1,872.7                         | 1.0                             |
| B                       | 62                    | 133             | 235                          | 7.1                             | 1,875.1                                                  | 1,875.1                            | 1,875.5                         | 0.5                             |
| C                       | 250                   | 80              | 196                          | 8.4                             | 1,881.3                                                  | 1,881.3                            | 1,882.0                         | 0.6                             |
| D                       | 354                   | 150             | 752                          | 2.2                             | 1,891.0                                                  | 1,891.0                            | 1,891.8                         | 0.8                             |
| E                       | 405                   | 42              | 274                          | 6.0                             | 1,891.0                                                  | 1,891.0                            | 1,891.6                         | 1.0                             |
| F                       | 615                   | 75              | 317                          | 5.2                             | 1,897.7                                                  | 1,897.7                            | 1,898.1                         | 0.5                             |
| G                       | 889                   | 76              | 202                          | 8.2                             | 1,906.4                                                  | 1,906.4                            | 1,906.8                         | 0.8                             |
| H                       | 1,059                 | 72              | 276                          | 6.0                             | 1,913.2                                                  | 1,913.2                            | 1,914.2                         | 0.8                             |
| I                       | 1,692                 | 72              | 289                          | 5.7                             | 1,936.8                                                  | 1,936.8                            | 1,937.7                         | 1.0                             |
| J                       | 2,108                 | 62              | 330                          | 5.0                             | 1,955.3                                                  | 1,955.3                            | 1,956.2                         | 1.0                             |
| K                       | 2,526                 | 48              | 467                          | 3.5                             | 1,974.9                                                  | 1,974.9                            | 1,975.8                         | 1.0                             |
| L                       | 3,228                 | 63              | 180                          | 9.2                             | 2,006.9                                                  | 2,006.9                            | 2,007.1                         | 0.9                             |
| M                       | 3,368                 | 77              | 292                          | 5.7                             | 2,013.2                                                  | 2,013.2                            | 2,014.1                         | 0.8                             |
| N                       | 3,569                 | 74              | 353                          | 4.7                             | 2,022.9                                                  | 2,022.9                            | 2,023.8                         | 0.9                             |
| O                       | 3,924                 | 72              | 304                          | 5.4                             | 2,034.5                                                  | 2,034.5                            | 2,035.3                         | 0.9                             |
| P                       | 4,152                 | 69              | 327                          | 5.1                             | 2,043.0                                                  | 2,043.0                            | 2,043.8                         | 0.9                             |
| Q                       | 4,245                 | 68              | 299                          | 5.5                             | 2,046.3                                                  | 2,046.3                            | 2,047.3                         | 1.0                             |
| R                       | 4,678                 | 53              | 179                          | 9.2                             | 2,064.0                                                  | 2,064.0                            | 2,064.0                         | 0.1                             |
| S                       | 4,838                 | 63              | 360                          | 4.6                             | 2,072.7                                                  | 2,072.7                            | 2,073.6                         | 1.0                             |
| T                       | 5,635                 | 80              | 322                          | 5.1                             | 2,103.2                                                  | 2,103.2                            | 2,104.0                         | 0.9                             |
| U                       | 5,800                 | 58              | 470                          | 3.5                             | 2,110.9                                                  | 2,110.9                            | 2,111.9                         | 0.9                             |
| V                       | 6,309                 | 41              | 154                          | 10.8                            | 2,126.2                                                  | 2,126.2                            | 2,126.3                         | 0.9                             |

<sup>1</sup>Feet above confluence with Willow Creek

<sup>2</sup>In Specific Energy

FLOODWAY DATA

**LITTLE BLACKHORSE CANYON**

FEDERAL EMERGENCY MANAGEMENT AGENCY

**MORROW COUNTY, OR**

AND INCORPORATED AREAS

TABLE 4



| FLOODING SOURCE |                       | FLOODWAY        |                              |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD<br>WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-----------------|-----------------------|-----------------|------------------------------|---------------------------------|----------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET) | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                                | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>3</sup><br>(FEET) |
| LORRAINE CANYON | 0                     | 50              | 148                          | 4.2                             | 1,092.6                                                  | 1,091.1 <sup>2</sup>               | 1,092.1                         | 0.8                             |
|                 | 108                   | 29              | 70                           | 8.9                             | 1,092.6                                                  | 1,092.5 <sup>2</sup>               | 1,092.5                         | 0.0                             |
|                 | 240                   | 84              | 206                          | 3.1                             | 1,100.7                                                  | 1,100.7                            | 1,100.7                         | 0.1                             |
|                 | 354                   | 24              | 66                           | 9.4                             | 1,107.6                                                  | 1,107.6                            | 1,107.6                         | 0.0                             |
|                 | 671                   | 24              | 66                           | 9.4                             | 1,127.8                                                  | 1,127.8                            | 1,127.8                         | 0.0                             |
|                 | 977                   | 24              | 65                           | 9.6                             | 1,160.1                                                  | 1,160.1                            | 1,160.1                         | 0.0                             |
| RIETMANN CREEK  | 0                     | 186             | 542                          | 3.2                             | 1,098.6                                                  | 1,098.6                            | 1,099.6                         | 1.0                             |
|                 | 131                   | 87              | 247                          | 7.0                             | 1,099.3                                                  | 1,099.3                            | 1,100.0                         | 0.9                             |
|                 | 354                   | 58              | 337                          | 5.1                             | 1,105.5                                                  | 1,105.5                            | 1,106.0                         | 0.7                             |
|                 | 430                   | 21              | 157                          | 11.0                            | 1,105.1                                                  | 1,105.1                            | 1,105.9                         | 0.5                             |
|                 | 523                   | 24              | 131                          | 13.3                            | 1,110.1                                                  | 1,110.1                            | 1,110.1                         | 0.1                             |
|                 | 686                   | 31              | 198                          | 8.8                             | 1,112.7                                                  | 1,112.7                            | 1,113.2                         | 0.9                             |
|                 | 872                   | 30              | 142                          | 12.2                            | 1,115.8                                                  | 1,115.8                            | 1,116.3                         | 1.0                             |

<sup>1</sup>Feet above limit of detailed study

<sup>2</sup>Elevation computed without consideration of backwater effects from Willow Creek

<sup>3</sup>In Specific Energy

|         |                                             |                                  |  |
|---------|---------------------------------------------|----------------------------------|--|
| TABLE 4 | FEDERAL EMERGENCY MANAGEMENT AGENCY         | FLOODWAY DATA                    |  |
|         | MORROW COUNTY, OR<br>AND INCORPORATED AREAS | LORRAINE CANYON - RIETMANN CREEK |  |

| FLOODING SOURCE |                       | FLOODWAY         |                              |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD<br>WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-----------------|-----------------------|------------------|------------------------------|---------------------------------|----------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET)  | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                                | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>2</sup><br>(FEET) |
| SHOBE CREEK     |                       |                  |                              |                                 |                                                          |                                    |                                 |                                 |
| A               | 0                     | 376              | 832                          | 3.0                             | 1,962.2                                                  | 1,962.2                            | 1,963.2                         | 1.0                             |
| B               | 68                    | 273 <sup>3</sup> | 608                          | 4.1                             | 1,964.0                                                  | 1,964.0                            | 1,964.1                         | 0.5                             |
| C               | 107                   | 423              | 769                          | 3.3                             | 1,965.4                                                  | 1,965.4                            | 1,966.0                         | 0.7                             |
| D               | 168                   | 398              | 966                          | 2.6                             | 1,967.3                                                  | 1,967.3                            | 1,968.2                         | 1.0                             |
| E               | 365                   | 223              | 611                          | 4.1                             | 1,972.0                                                  | 1,972.0                            | 1,972.7                         | 0.4                             |
| F               | 441                   | 80               | 256                          | 9.8                             | 1,974.7                                                  | 1,974.7                            | 1,974.7                         | 0.8                             |
| G               | 617                   | 38               | 195                          | 12.9                            | 1,981.4                                                  | 1,981.4                            | 1,981.4                         | 0.1                             |
| H               | 785                   | 48               | 316                          | 8.0                             | 1,986.9                                                  | 1,986.9                            | 1,986.9                         | -0.2                            |
| I               | 950                   | 59               | 244                          | 10.3                            | 1,988.2                                                  | 1,988.2                            | 1,988.2                         | 0.0                             |
| J               | 1,273                 | 62               | 231                          | 10.9                            | 1,997.5                                                  | 1,997.5                            | 1,997.5                         | 0.0                             |
| K               | 1,711                 | 53               | 219                          | 11.5                            | 2,009.9                                                  | 2,009.9                            | 2,009.9                         | 0.0                             |
| L               | 2,072                 | 38               | 197                          | 12.8                            | 2,028.3                                                  | 2,028.3                            | 2,028.3                         | 0.0                             |
| M               | 2,887                 | 63               | 233                          | 10.8                            | 2,068.8                                                  | 2,068.8                            | 2,068.8                         | 0.0                             |
| N               | 3,705                 | 65               | 567                          | 4.4                             | 2,096.9                                                  | 2,096.9                            | 2,097.6                         | 0.7                             |
| O               | 4,052                 | 47               | 210                          | 12.0                            | 2,102.8                                                  | 2,102.8                            | 2,102.8                         | 0.0                             |
| P               | 4,468                 | 195              | 716                          | 3.5                             | 2,117.2                                                  | 2,117.2                            | 2,118.1                         | 0.9                             |
| Q               | 4,717                 | 144              | 541                          | 4.7                             | 2,117.8                                                  | 2,117.8                            | 2,118.6                         | 1.0                             |
| R               | 5,202                 | 125              | 445                          | 5.6                             | 2,129.3                                                  | 2,129.3                            | 2,130.0                         | 0.7                             |
| S               | 5,453                 | 100              | 270                          | 9.3                             | 2,132.3                                                  | 2,132.3                            | 2,132.8                         | 1.0                             |
| T               | 6,593                 | 68               | 238                          | 10.6                            | 2,162.0                                                  | 2,162.0                            | 2,162.2                         | 0.9                             |

<sup>1</sup>Feet above confluence with Willow Creek

<sup>2</sup>In Specific Energy

<sup>3</sup>Top width does not match the width shown on map

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MORROW COUNTY, OR**  
AND INCORPORATED AREAS

FLOODWAY DATA  
**SHOBE CREEK**



| FLOODING SOURCE |                       | FLOODWAY         |                              |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-----------------|-----------------------|------------------|------------------------------|---------------------------------|-------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET)  | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                             | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>2</sup><br>(FEET) |
| WILLOW CREEK    |                       |                  |                              |                                 |                                                       |                                    |                                 |                                 |
| A               | 107,885               | 682              | 3,099                        | 5.0                             | 1,068.7                                               | 1,068.7                            | 1,069.7                         | 0.7                             |
| B               | 108,208               | 670              | 2,250                        | 6.9                             | 1,070.3                                               | 1,070.3                            | 1,070.7                         | 0.1                             |
| C               | 108,958               | 621              | 2,266                        | 6.9                             | 1,075.0                                               | 1,075.0                            | 1,075.0                         | 0.1                             |
| D               | 109,378               | 819              | 3,530                        | 4.4                             | 1,078.7                                               | 1,078.7                            | 1,079.2                         | 0.8                             |
| E               | 109,644               | 991              | 5,109                        | 3.0                             | 1,079.6                                               | 1,079.6                            | 1,080.5                         | 1.0                             |
| F               | 109,855               | 986              | 4,847                        | 3.2                             | 1,080.0                                               | 1,080.0                            | 1,081.0                         | 1.0                             |
| G               | 110,454               | 939              | 3,897                        | 4.0                             | 1,082.3                                               | 1,082.3                            | 1,083.2                         | 1.0                             |
| H               | 111,016               | 893              | 3,619                        | 4.3                             | 1,085.7                                               | 1,085.7                            | 1,086.4                         | 1.0                             |
| I               | 111,484               | 790 <sup>3</sup> | 3,038                        | 5.1                             | 1,088.5                                               | 1,088.5                            | 1,089.2                         | 0.9                             |
| J               | 112,222               | 810 <sup>3</sup> | 3,307                        | 4.7                             | 1,092.6                                               | 1,092.6                            | 1,093.4                         | 1.0                             |
| K               | 112,741               | 761 <sup>3</sup> | 2,795                        | 5.6                             | 1,094.9                                               | 1,094.9                            | 1,095.6                         | 0.7                             |
| L               | 113,302               | 770              | 2,756                        | 5.6                             | 1,097.3                                               | 1,097.3                            | 1,098.1                         | 1.0                             |
| M               | 113,862               | 760              | 2,581                        | 6.0                             | 1,099.5                                               | 1,099.5                            | 1,100.3                         | 1.0                             |
| N               | 114,166               | 744              | 2,365                        | 6.6                             | 1,101.0                                               | 1,101.0                            | 1,101.8                         | 0.9                             |
| O               | 156,858               | 375              | 1,291                        | 6.5                             | 1,407.8                                               | 1,407.8                            | 1,408.8                         | 0.9                             |
| P               | 157,113               | 395              | 1,641                        | 5.1                             | 1,410.8                                               | 1,410.8                            | 1,411.7                         | 0.8                             |
| Q               | 157,171               | 541              | 2,275                        | 3.7                             | 1,413.3                                               | 1,413.3                            | 1,414.1                         | 0.8                             |
| R               | 157,421               | 561              | 2,229                        | 3.8                             | 1,413.9                                               | 1,413.9                            | 1,414.6                         | 0.7                             |
| S               | 157,670               | 347              | 1,343                        | 6.3                             | 1,414.9                                               | 1,414.9                            | 1,415.6                         | 1.0                             |
| T               | 158,115               | 356              | 1,308                        | 6.5                             | 1,418.1                                               | 1,418.1                            | 1,419.0                         | 1.0                             |
| U               | 158,792               | 238              | 1,178                        | 7.2                             | 1,426.9                                               | 1,426.9                            | 1,427.5                         | 0.9                             |
| V               | 159,280               | 259              | 1,129                        | 7.5                             | 1,430.3                                               | 1,430.3                            | 1,431.0                         | 0.9                             |
| W               | 159,670               | 196              | 874                          | 9.7                             | 1,434.3                                               | 1,434.3                            | 1,434.8                         | 1.0                             |
| X               | 160,232               | 295              | 1,661                        | 5.1                             | 1,441.4                                               | 1,441.4                            | 1,442.3                         | 1.0                             |
| Y               | 160,390               | 340              | 1,988                        | 3.8                             | 1,442.3                                               | 1,442.3                            | 1,443.1                         | 0.9                             |
| Z               | 160,797               | 196              | 1,109                        | 6.8                             | 1,444.1                                               | 1,444.1                            | 1,444.8                         | 1.0                             |

<sup>1</sup>Feet above county boundary

<sup>2</sup>In Specific Energy

<sup>3</sup>Top width does not match the width shown on map

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MORROW COUNTY, OR**  
 AND INCORPORATED AREAS

FLOODWAY DATA  
**WILLOW CREEK**

| FLOODING SOURCE |                       | FLOODWAY         |                              |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD<br>WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-----------------|-----------------------|------------------|------------------------------|---------------------------------|----------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET)  | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                                | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>2</sup><br>(FEET) |
| WILLOW CREEK    |                       |                  |                              |                                 |                                                          |                                    |                                 |                                 |
| AA              | 161,233               | 295              | 1,640                        | 4.6                             | 1,448.0                                                  | 1,448.0                            | 1,448.9                         | 0.9                             |
| AB              | 161,393               | 277              | 1,753                        | 4.3                             | 1,451.6                                                  | 1,451.6                            | 1,452.5                         | 1.0                             |
| AC              | 161,709               | 204              | 1,172                        | 6.4                             | 1,453.8                                                  | 1,453.8                            | 1,454.6                         | 0.9                             |
| AD              | 162,019               | 132              | 978                          | 7.7                             | 1,456.6                                                  | 1,456.6                            | 1,457.2                         | 0.5                             |
| AE              | 162,299               | 193              | 934                          | 8.1                             | 1,458.8                                                  | 1,458.8                            | 1,459.2                         | 0.8                             |
| AF              | 181,988               | 452              | 1,562                        | 4.1                             | 1,792.3                                                  | 1,792.3                            | 1,793.3                         | 1.0                             |
| AG              | 183,252               | 577              | 1,024                        | 6.2                             | 1,802.1                                                  | 1,802.1                            | 1,802.3                         | 0.3                             |
| AH              | 183,524               | 368              | 1,068                        | 6.0                             | 1,805.5                                                  | 1,805.5                            | 1,806.1                         | 0.8                             |
| AI              | 183,721               | 254              | 970                          | 6.6                             | 1,807.1                                                  | 1,807.1                            | 1,807.9                         | 0.9                             |
| AJ              | 183,987               | 158              | 1,116                        | 5.7                             | 1,815.6                                                  | 1,815.6                            | 1,816.1                         | 0.7                             |
| AK              | 184,680               | 377              | 2,079                        | 3.1                             | 1,817.2                                                  | 1,817.2                            | 1,818.0                         | 0.9                             |
| AL              | 184,999               | 341 <sup>3</sup> | 1,173                        | 5.4                             | 1,818.7                                                  | 1,818.7                            | 1,819.0                         | 0.7                             |
| AM              | 185,645               | 510              | 1,792                        | 3.6                             | 1,827.4                                                  | 1,827.4                            | 1,828.0                         | 0.6                             |
| AN              | 186,093               | 775              | 1,440                        | 4.4                             | 1,831.6                                                  | 1,831.6                            | 1,832.6                         | 1.0                             |
| AO              | 187,300               | 523              | 1,185                        | 5.4                             | 1,838.7                                                  | 1,838.7                            | 1,839.4                         | 1.0                             |
| AP              | 187,561               | 340              | 1,190                        | 5.3                             | 1,842.8                                                  | 1,842.8                            | 1,843.3                         | 0.6                             |
| AQ              | 188,065               | 194              | 1,407                        | 4.5                             | 1,848.6                                                  | 1,848.6                            | 1,848.7                         | 0.2                             |
| AR              | 189,797               | 308              | 1,081                        | 5.9                             | 1,859.5                                                  | 1,859.5                            | 1,860.0                         | 0.7                             |
| AS              | 189,901               | 299              | 1,364                        | 4.7                             | 1,859.8                                                  | 1,859.8                            | 1,860.6                         | 0.7                             |
| AT              | 190,265               | 181              | 919                          | 6.9                             | 1,862.9                                                  | 1,862.9                            | 1,863.5                         | 0.7                             |
| AU              | 190,383               | 211              | 1,123                        | 5.7                             | 1,863.8                                                  | 1,863.8                            | 1,864.5                         | 0.6                             |
| AV              | 190,465               | 154              | 941                          | 6.8                             | 1,864.5                                                  | 1,864.5                            | 1,865.0                         | 0.5                             |
| AW              | 190,700               | 195              | 843                          | 7.5                             | 1,868.1                                                  | 1,868.1                            | 1,868.1                         | 0.1                             |
| AX              | 190,887               | 207 <sup>3</sup> | 968                          | 6.3                             | 1,868.8                                                  | 1,868.8                            | 1,869.0                         | 0.3                             |
| AY              | 192,191               | 210              | 704                          | 8.6                             | 1,878.9                                                  | 1,878.9                            | 1,878.9                         | 0.7                             |
| AZ              | 192,822               | 441              | 1,643                        | 3.7                             | 1,885.3                                                  | 1,885.3                            | 1,885.4                         | 0.1                             |

<sup>1</sup>Feet above county boundary

<sup>2</sup>In Specific Energy

<sup>3</sup>Top width does not match the width shown on map

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY  
**MORROW COUNTY, OR**  
AND INCORPORATED AREAS

FLOODWAY DATA

WILLOW CREEK



| FLOODING SOURCE |                       | FLOODWAY         |                              |                                 | 1-PERCENT-ANNUAL-CHANCE FLOOD<br>WATER SURFACE ELEVATION |                                    |                                 |                                 |
|-----------------|-----------------------|------------------|------------------------------|---------------------------------|----------------------------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET)  | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD)                                | WITHOUT<br>FLOODWAY<br>(FEET NAVD) | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>2</sup><br>(FEET) |
| WILLOW CREEK    |                       |                  |                              |                                 |                                                          |                                    |                                 |                                 |
| BA              | 193,070               | 196              | 924                          | 6.6                             | 1,885.9                                                  | 1,885.9                            | 1,885.9                         | 0.3                             |
| BB              | 193,501               | 244              | 1,366                        | 4.4                             | 1,890.7                                                  | 1,890.7                            | 1,891.7                         | 1.0                             |
| BC              | 193,621               | 252              | 1,226                        | 4.9                             | 1,891.1                                                  | 1,891.1                            | 1,892.0                         | 0.8                             |
| BD              | 193,913               | 275              | 848                          | 7.2                             | 1,894.3                                                  | 1,894.3                            | 1,894.6                         | 0.9                             |
| BE              | 194,359               | 417              | 1,229                        | 4.9                             | 1,899.4                                                  | 1,899.4                            | 1,900.0                         | 1.0                             |
| BF              | 194,834               | 391              | 1,150                        | 5.3                             | 1,903.1                                                  | 1,903.1                            | 1,903.6                         | 0.4                             |
| BG              | 195,103               | 430              | 1,453                        | 4.2                             | 1,907.0                                                  | 1,907.0                            | 1,907.7                         | 1.0                             |
| BH              | 195,247               | 277              | 1,285                        | 4.7                             | 1,907.6                                                  | 1,907.6                            | 1,908.4                         | 1.0                             |
| BI              | 195,518               | 270              | 1,042                        | 5.8                             | 1,909.8                                                  | 1,909.8                            | 1,910.0                         | 0.2                             |
| BJ              | 195,869               | 300              | 1,222                        | 5.0                             | 1,914.2                                                  | 1,914.2                            | 1,914.8                         | 1.0                             |
| BK              | 196,185               | 337              | 1,085                        | 5.6                             | 1,917.6                                                  | 1,917.6                            | 1,918.1                         | 1.0                             |
| BL              | 196,616               | 397              | 1,350                        | 4.5                             | 1,920.7                                                  | 1,920.7                            | 1,921.4                         | 0.9                             |
| BM              | 197,166               | 249              | 920                          | 6.6                             | 1,926.1                                                  | 1,926.1                            | 1,926.4                         | 1.0                             |
| BN              | 197,437               | 232 <sup>3</sup> | 1,306                        | 4.6                             | 1,929.9                                                  | 1,929.9                            | 1,930.7                         | 0.9                             |
| BO              | 197,558               | 58 <sup>3</sup>  | 499                          | 5.0                             | 1,930.6                                                  | 1,930.6                            | 1,931.3                         | 0.9                             |
| BP              | 197,754               | 78 <sup>3</sup>  | 555                          | 4.5                             | 1,930.8                                                  | 1,930.8                            | 1,931.8                         | 0.9                             |
| BQ              | 198,044               | 79 <sup>3</sup>  | 586                          | 6.1                             | 1,932.6                                                  | 1,932.6                            | 1,933.2                         | 0.5                             |
| BR              | 198,260               | 42               | 252                          | 10.0                            | 1,933.8                                                  | 1,933.8                            | 1,934.3                         | 0.2                             |
| BS              | 198,701               | 63               | 341                          | 7.4                             | 1,939.5                                                  | 1,939.5                            | 1,939.5                         | 0.0                             |
| BT              | 199,112               | 57               | 267                          | 9.4                             | 1,942.9                                                  | 1,942.9                            | 1,943.0                         | 0.5                             |
| BU              | 199,547               | 54               | 294                          | 8.6                             | 1,948.8                                                  | 1,948.8                            | 1,948.8                         | 0.4                             |
| BV              | 199,958               | 54               | 336                          | 7.5                             | 1,953.3                                                  | 1,953.3                            | 1,953.3                         | 0.0                             |
| BW              | 200,405               | 52 <sup>3</sup>  | 248                          | 10.2                            | 1,957.3                                                  | 1,957.3                            | 1,957.4                         | 0.1                             |
| BX              | 200,534               | 41 <sup>3</sup>  | 240                          | 40.5                            | 1,959.1                                                  | 1,959.1                            | 1,959.2                         | 0.0                             |
| BY              | 200,692               | 56 <sup>3</sup>  | 409                          | 6.1                             | 1,961.4                                                  | 1,961.4                            | 1,961.4                         | 0.0                             |
| BZ              | 200,782               | 50               | 291                          | 1.7                             | 1,962.1                                                  | 1,962.1                            | 1,962.1                         | 0.0                             |

<sup>1</sup>Feet above county boundary

<sup>2</sup>In Specific Energy

<sup>3</sup>Top width does not match the width shown on map

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY  
MORROW COUNTY, OR  
AND INCORPORATED AREAS

FLOODWAY DATA  
WILLOW CREEK

| FLOODING SOURCE |                       | FLOODWAY        |                              |                                 |                           | 1-PERCENT-ANNUAL-CHANCE FLOOD<br>WATER SURFACE ELEVATION |                                 |                                 |
|-----------------|-----------------------|-----------------|------------------------------|---------------------------------|---------------------------|----------------------------------------------------------|---------------------------------|---------------------------------|
| CROSS SECTION   | DISTANCE <sup>1</sup> | WIDTH<br>(FEET) | SECTION<br>AREA<br>(SQ.FEET) | MEAN<br>VELOCITY<br>(FEET/SEC.) | REGULATORY<br>(FEET NAVD) | WITHOUT<br>FLOODWAY<br>(FEET NAVD)                       | WITH<br>FLOODWAY<br>(FEET NAVD) | INCREASE <sup>2</sup><br>(FEET) |
| WILLOW CREEK    |                       |                 |                              |                                 |                           |                                                          |                                 |                                 |
| CA              | 201,156               | 13              | 76                           | 6.6                             | 1,962.6                   | 1,962.6                                                  | 1,962.6                         | 0.0                             |
| CB              | 201,187               | 35              | 145                          | 3.4                             | 1,963.4                   | 1,963.4                                                  | 1,963.4                         | 0.0                             |
| CC              | 201,344               | 33              | 114                          | 4.4                             | 1,963.8                   | 1,963.8                                                  | 1,963.8                         | 0.0                             |
| CD              | 201,717               | 22              | 65                           | 7.7                             | 1,967.0                   | 1,967.0                                                  | 1,967.0                         | 0.0                             |
| CE              | 202,127               | 28              | 81                           | 6.2                             | 1,972.2                   | 1,972.2                                                  | 1,972.2                         | 0.0                             |
| CF              | 202,419               | 34              | 93                           | 5.4                             | 1,975.3                   | 1,975.3                                                  | 1,975.3                         | 0.0                             |
| CG              | 202,769               | 23              | 106                          | 4.7                             | 1,977.1                   | 1,977.1                                                  | 1,977.1                         | 0.0                             |
| CH              | 203,036               | 35              | 164                          | 3.1                             | 1,977.8                   | 1,977.8                                                  | 1,977.8                         | 0.0                             |
| CI              | 203,075               | 15              | 78                           | 6.4                             | 1,977.6                   | 1,977.6                                                  | 1,977.6                         | 0.0                             |

<sup>1</sup>Feet above county boundary

<sup>2</sup>In Specific Energy

|                                             |               |
|---------------------------------------------|---------------|
| FEDERAL EMERGENCY MANAGEMENT AGENCY         | FLOODWAY DATA |
| MORROW COUNTY, OR<br>AND INCORPORATED AREAS | WILLOW CREEK  |

TABLE 4



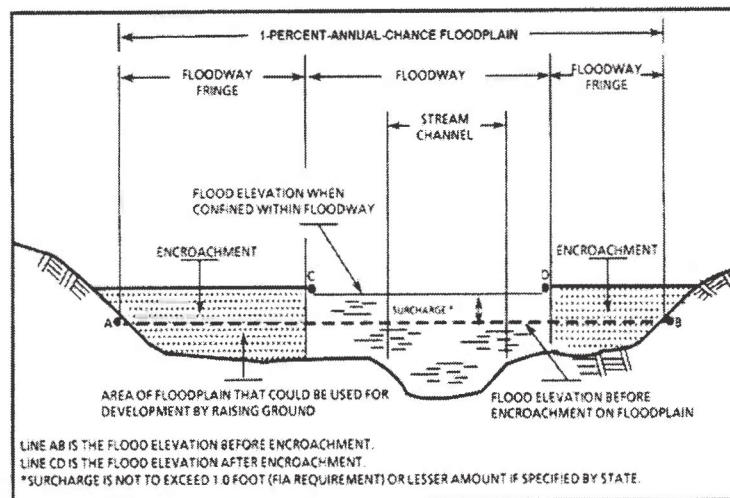


Figure 1. Floodway Schematic

## 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 report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs) or depths are shown within this zone.

### Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by detailed methods. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

### Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where

the contributing drainage area is less than 1 square mile (sq. mi.), and areas protected from the base flood by levees. No BFEs 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 BFEs or average depths. Insurance agents use zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For flood 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 countywide FIRM presents flooding information for the entire geographic area of Morrow County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 5, "Community Map History."

#### **7.0 OTHER STUDIES**

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

#### **8.0 LOCATION OF DATA**

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting Federal Insurance and Mitigation Division, FEMA Region X, Federal Regional Center, 130 228<sup>th</sup> Street, SW, Bothell, Washington 98021-9796.



| COMMUNITY MAP HISTORY                                                              |                        |                                                  |                                               |                                                 |
|------------------------------------------------------------------------------------|------------------------|--------------------------------------------------|-----------------------------------------------|-------------------------------------------------|
| FEDERAL EMERGENCY MANAGEMENT AGENCY<br>MORROW COUNTY, OR<br>AND INCORPORATED AREAS |                        | TABLE 5                                          |                                               |                                                 |
| COMMUNITY NAME                                                                     | INITIAL IDENTIFICATION | FLOOD HAZARD<br>BOUNDARY MAP<br>REVISION DATE(S) | FLOOD INSURANCE<br>RATE MAP<br>EFFECTIVE DATE | FLOOD INSURANCE<br>RATE MAP<br>REVISION DATE(S) |
| Boardman, City of                                                                  | December 18, 2007      | None                                             | December 18, 2007                             | None                                            |
| Heppner, City of                                                                   | November 23, 1973      | December 19, 1975                                | April 1, 1981                                 | February 15, 1984                               |
| Ione, City of                                                                      | November 22, 1974      | None                                             | April 1, 1981                                 | April 3, 1984                                   |
| Irrigon, City of                                                                   | December 18, 2007      | None                                             | December 18, 2007                             | None                                            |
| Lexington, City of                                                                 | September 6, 1974      | November 26, 1976                                | April 1, 1981                                 | July 5, 1984                                    |
| Morrow County,<br>Unincorporated Areas                                             | January 24, 1975       | July 19, 1977                                    | April 1, 1981                                 | July 5, 1984                                    |

## 9.0 **BIBLIOGRAPHY AND REFERENCES**

1. E-Podunk web site, Morrow County, OR County Profile, <http://www.epodunk.com/cgi-bin/localList.php?local=15386&locTGroup=Communities&direction=down&sec=0&qty=5>, 2006.
2. East Central Oregon Association of Counties, Draft Technical Report, Town of Lexington, April 1978.
3. U.S. Department of the Army, Corps of Engineers, Hydrologic Report: Stream of Morrow County, Oregon, November 1978.
4. U.S. Department of the Army, Corps of Engineers, Hydrologic Report, Streams of Morrow County, Oregon, Walla Walla District, Walla Walla, Washington, 1978.
5. Thomas, W., "Review of the effective base flood discharges for the City of Heppner, Oregon." Review Comments, Michael Baker Jr., Inc., June 23, 2003 (revised).
6. Levish, D. R., and Ostenaar, D. A., "Applied paleoflood hydrology in north-central Oregon." Guidebook for Field Trip 2, April 19-21, 1996, 92<sup>nd</sup> Annual Meetings of the Geological Society of America, Portland, Oregon.
7. Hjalmanson, H. W., and Thomas, B. E., "New look at regional flood-frequency relations for arid land." Journal of Hydraulic Engineering, ASCE, 118(6), 868-886, dated 1992.
8. Hydrologic Engineering Center (HEC), HEC-RAS, User's Manual, US Army Corps of Engineers, Davis, CA, November 2002.
9. Federal Emergency Management Agency, Flood Insurance Study, City of Heppner, Morrow County, Oregon, Revised February 15, 1984.
10. Federal Emergency Management Agency, Flood Insurance Study, City of Ione, Morrow County, Oregon, Revised April 3, 1984.
11. Federal Emergency Management Agency, Flood Insurance Study, Town of Lexington, Morrow County, Oregon, Revised July 5, 1984.
12. Federal Emergency Management Agency, Flood Insurance Study, Unincorporated Areas, Morrow County, Oregon, Revised July 5, 1984.



13. Spenser B. Gross, Inc., Aerial Photos, Scale 1:24,000, Flown September 2004.

14. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Morrow County, Oregon, Scale 1:24,000, January 1975, Revised July 1977.

WEST Consultants, Inc. "Technical Support Data Notebook" prepared for FEMA Region X, dated November 2005.

## **10.0 REVISION DESCRIPTIONS**

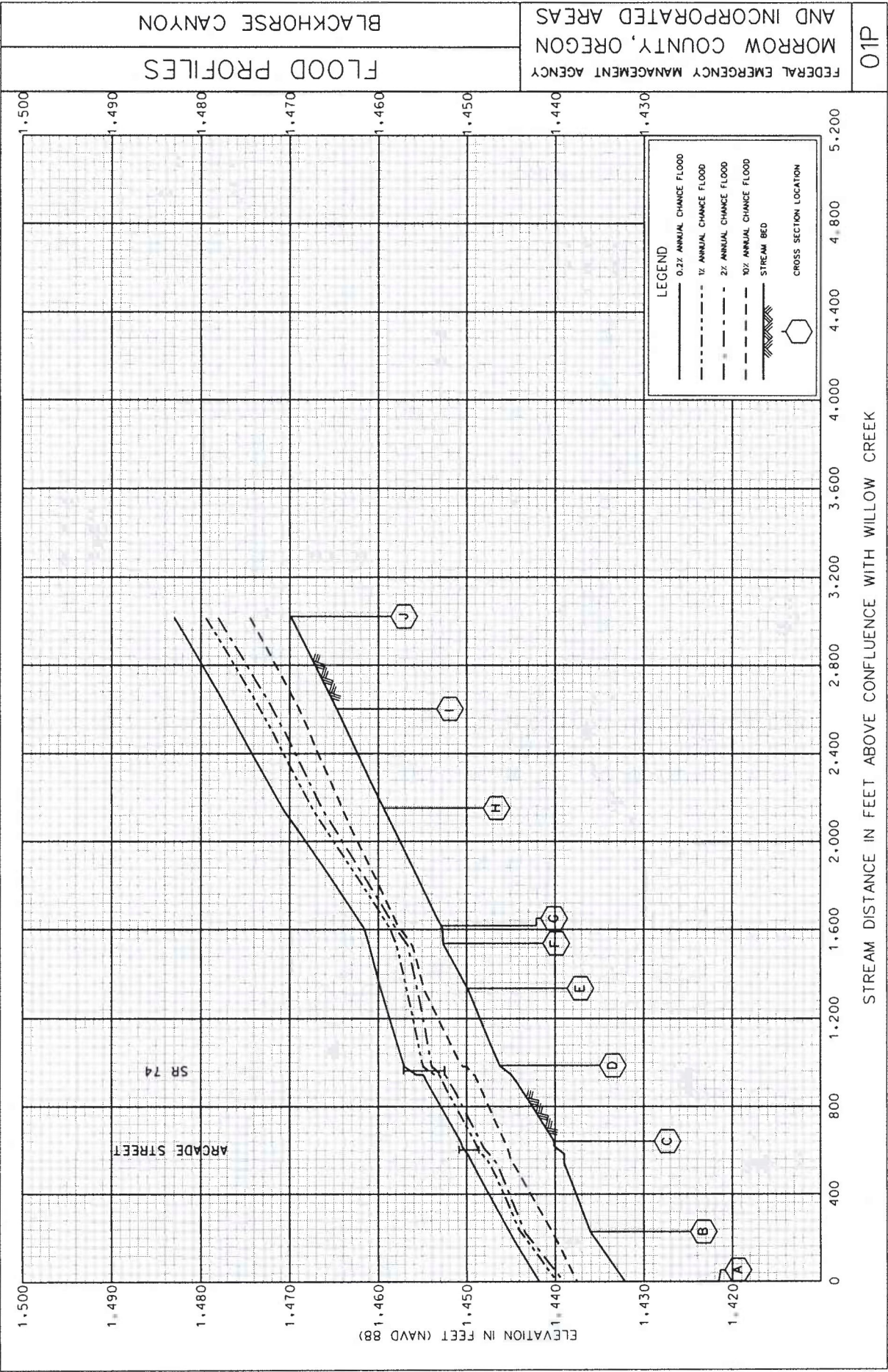
This section has been added to provide information regarding significant revisions made since the original Flood Insurance Study was printed. Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood hazard data located at the Department of Land and Water Resources, 201 South Jackson Street, Suite 600, Seattle, Washington 98104-3855.

### **10.1 First Revision**

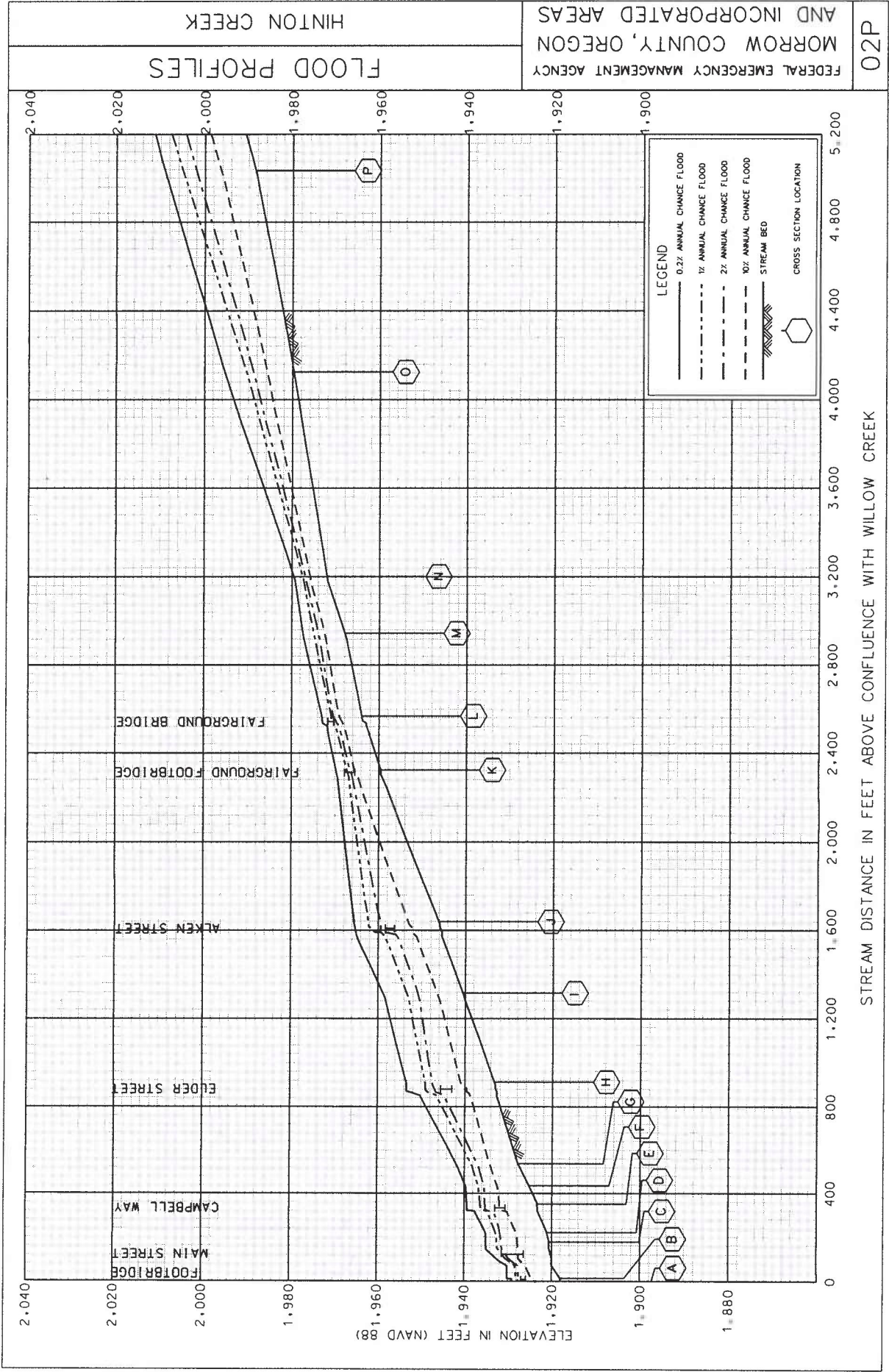
The purpose of this revision is to update detailed studies for Blackhorse Canyon, Hinton Creek, Little Blackhorse Canyon, Lorraine Canyon, Rietmann Creek, Shobe Creek, and Willow Creek. Refer to section 3.0 and 4.0 for an explanation for how these streams were restudied. For flood insurance purposes, refer to the separately published Flood Insurance Rate Map.

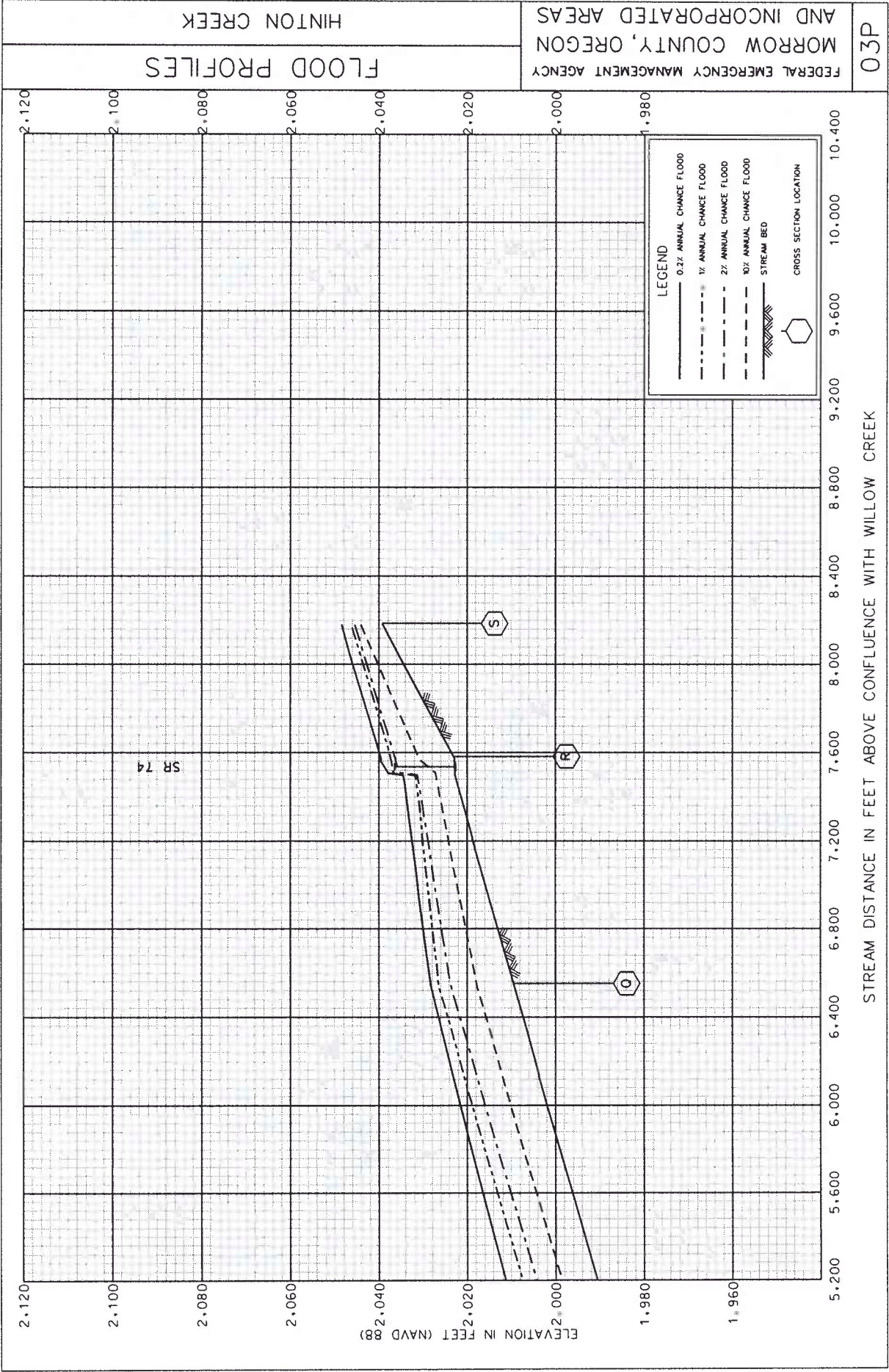
The hydrologic and hydraulic analyses for this study were performed by WEST Consultants, Inc., for FEMA, under Contract No. EMS-2001-CO-0068. This study was completed in November 2005.

The final CCO meeting for this countywide FIS report (as mentioned in Section 1.3) was held on December 4, 2006. It was attended by representatives of FEMA, Morrow County, Oregon State Department of Land Conservation and Development, WEST Consultants, Inc., and the Cities Heppner and Lexington.

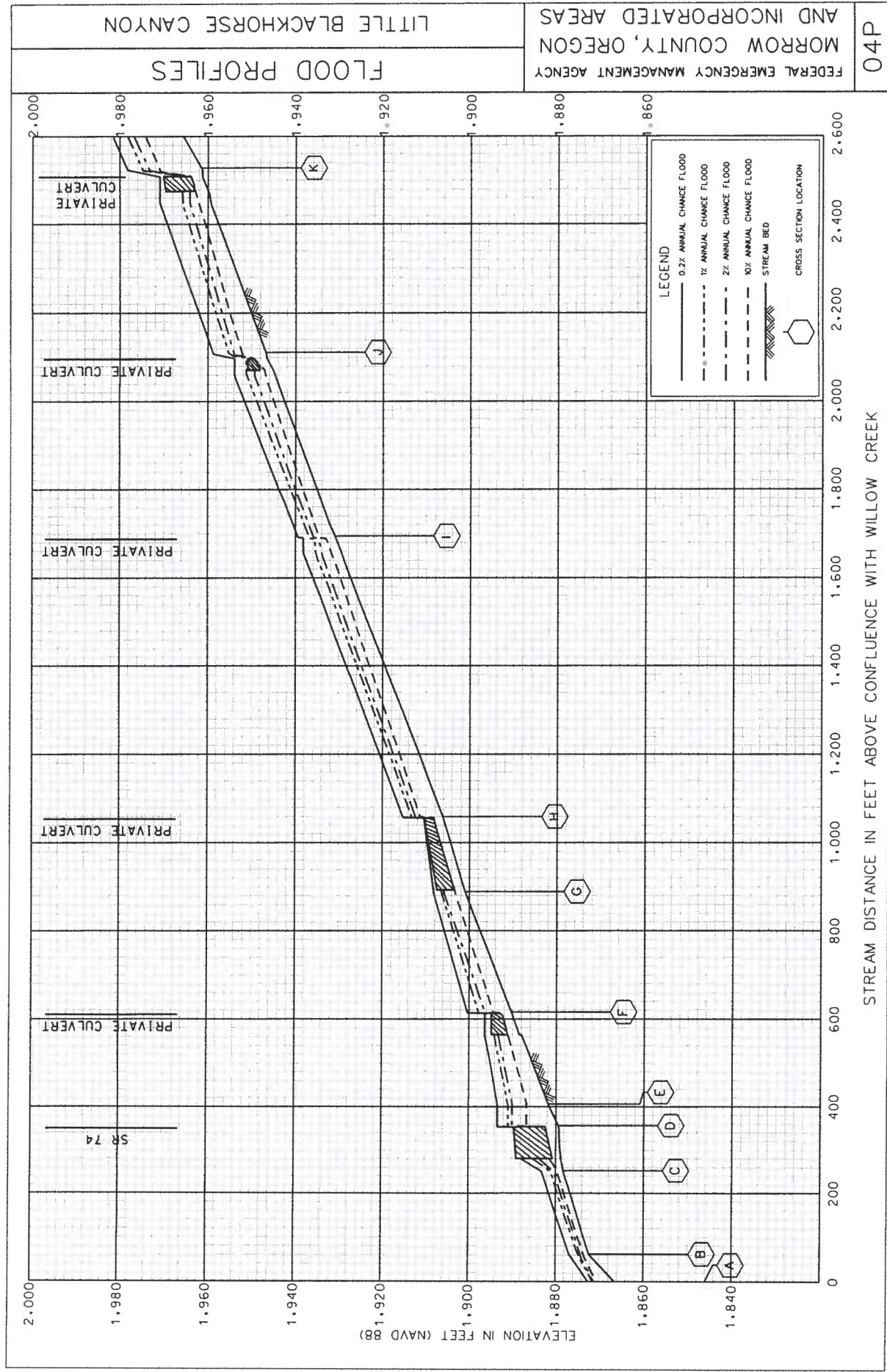




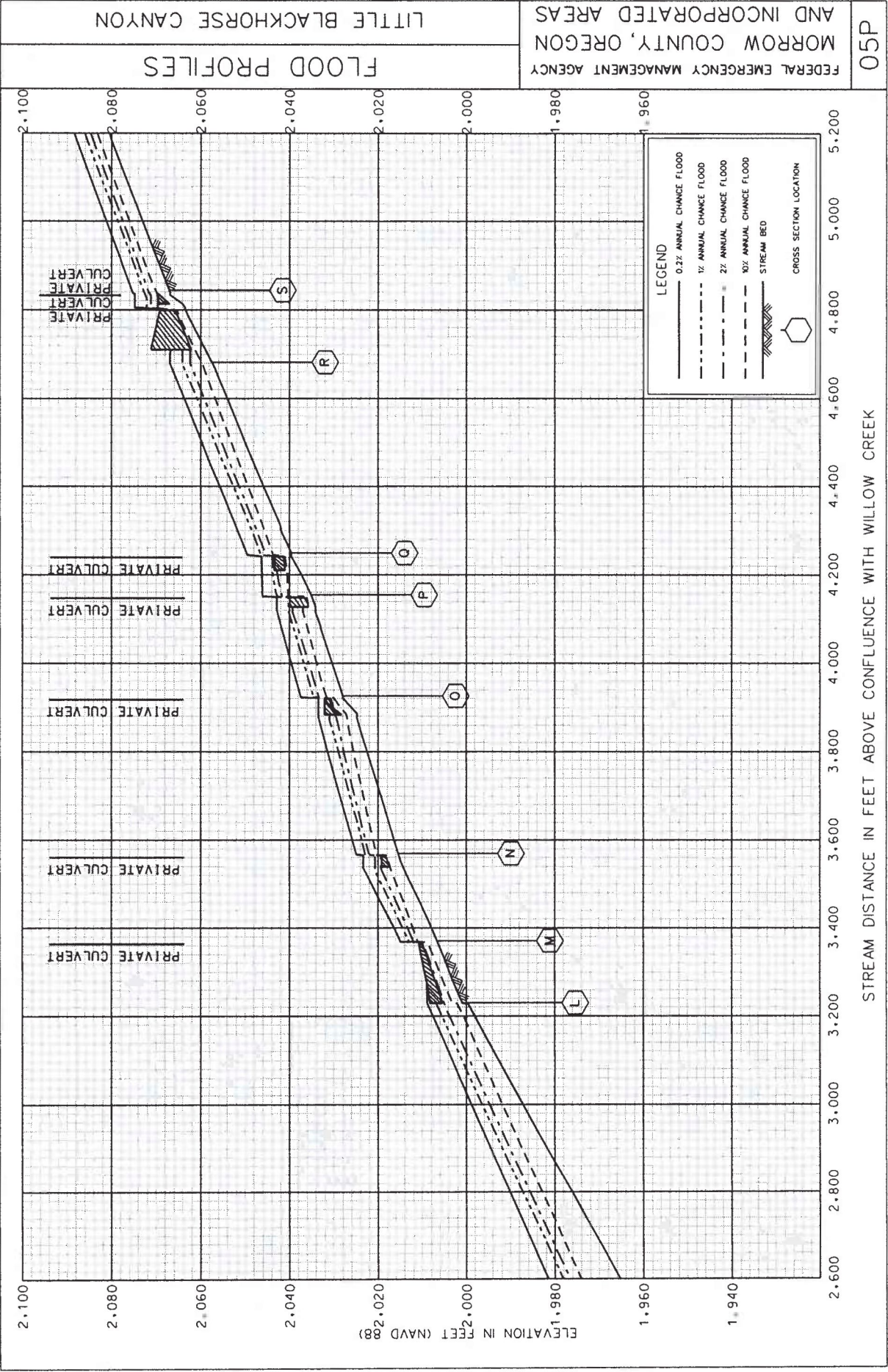




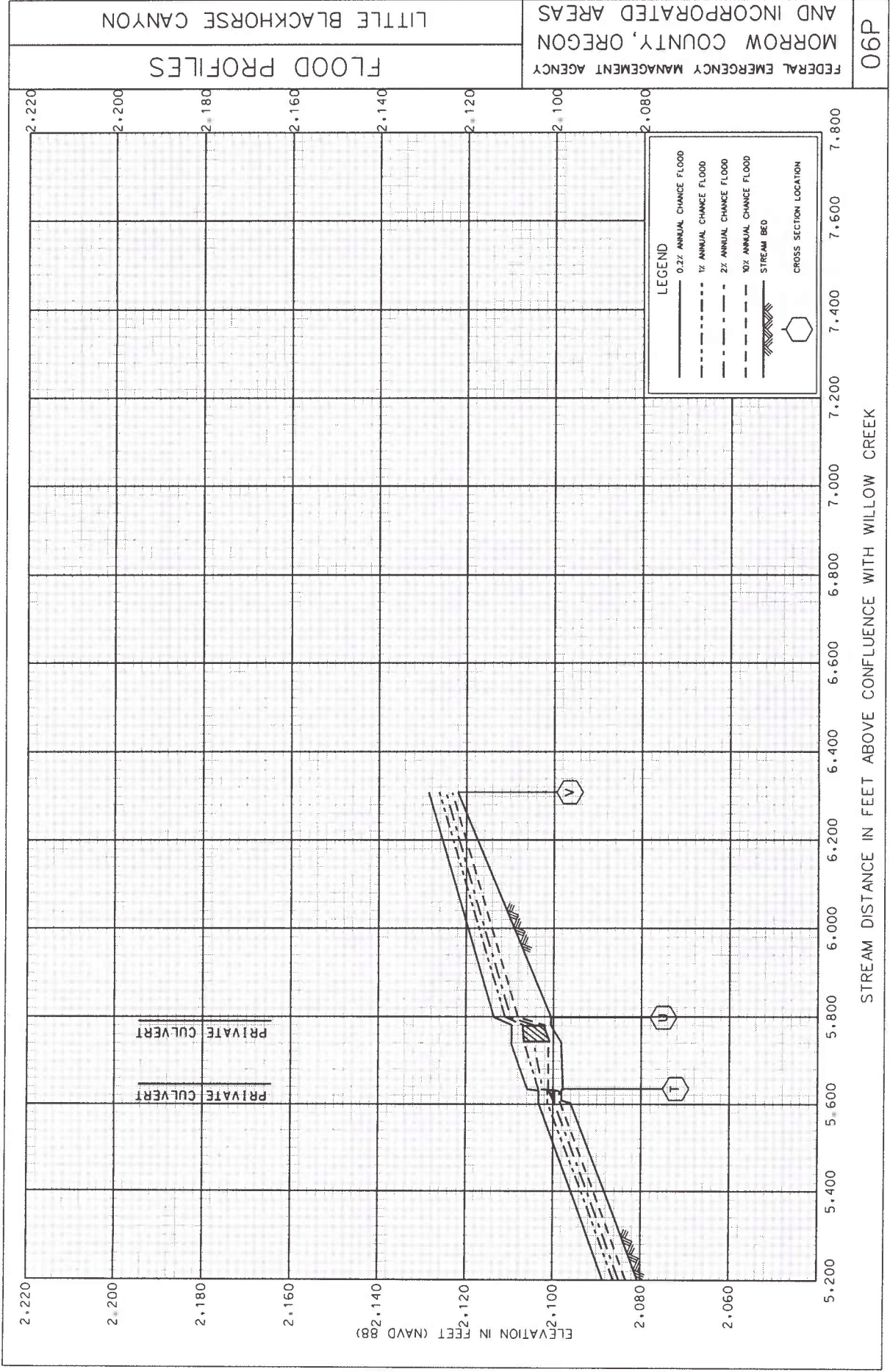


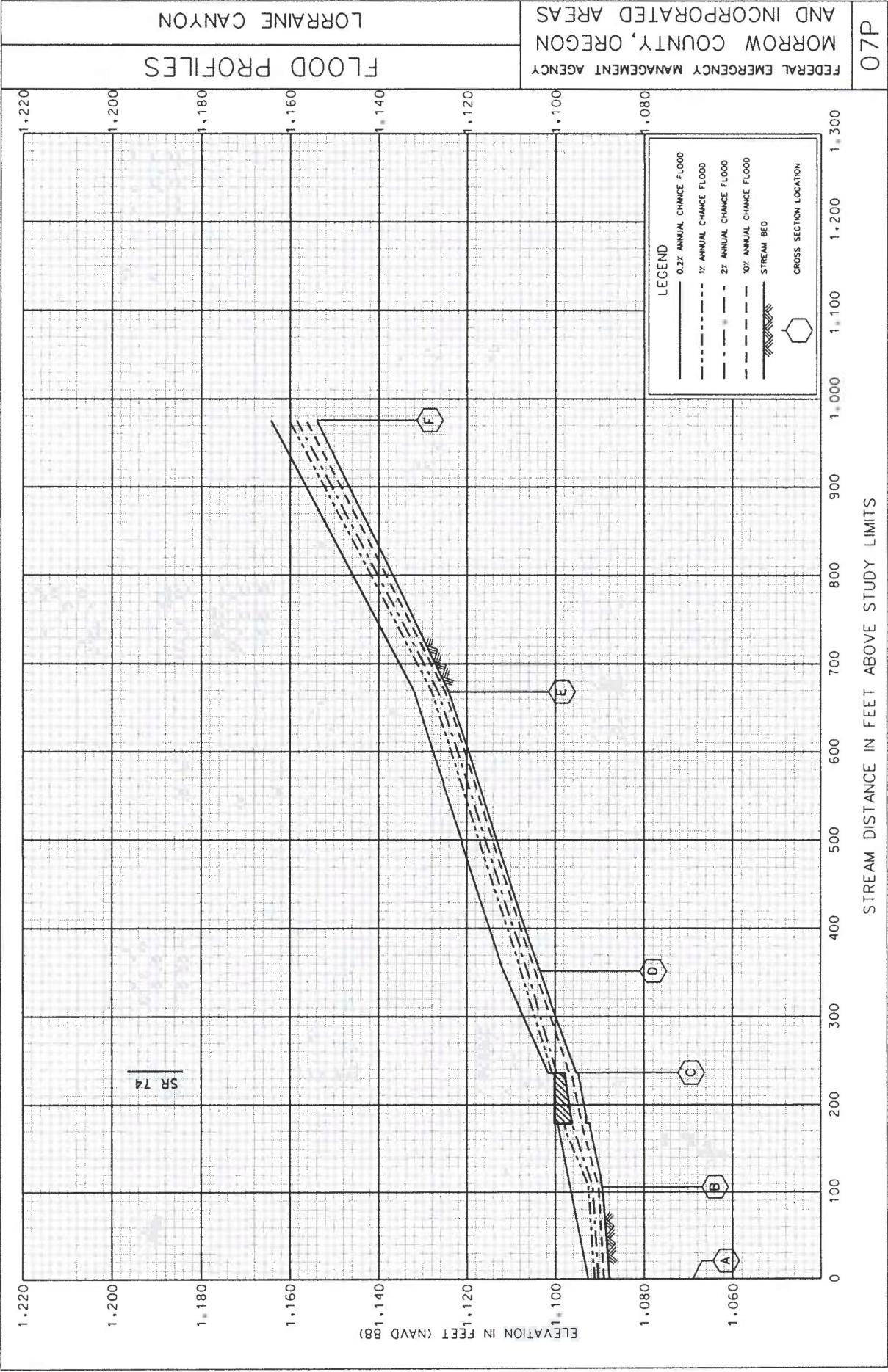








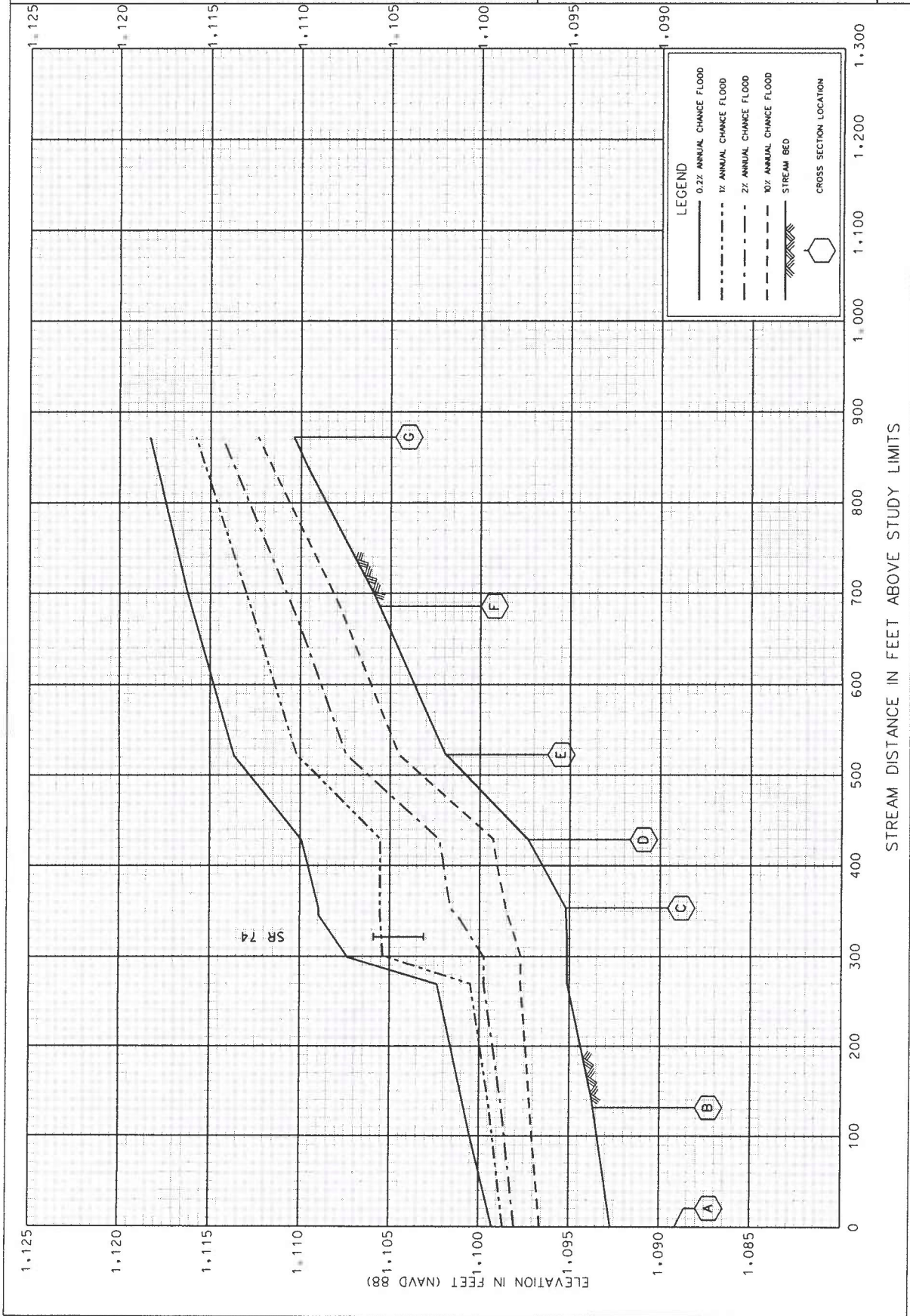


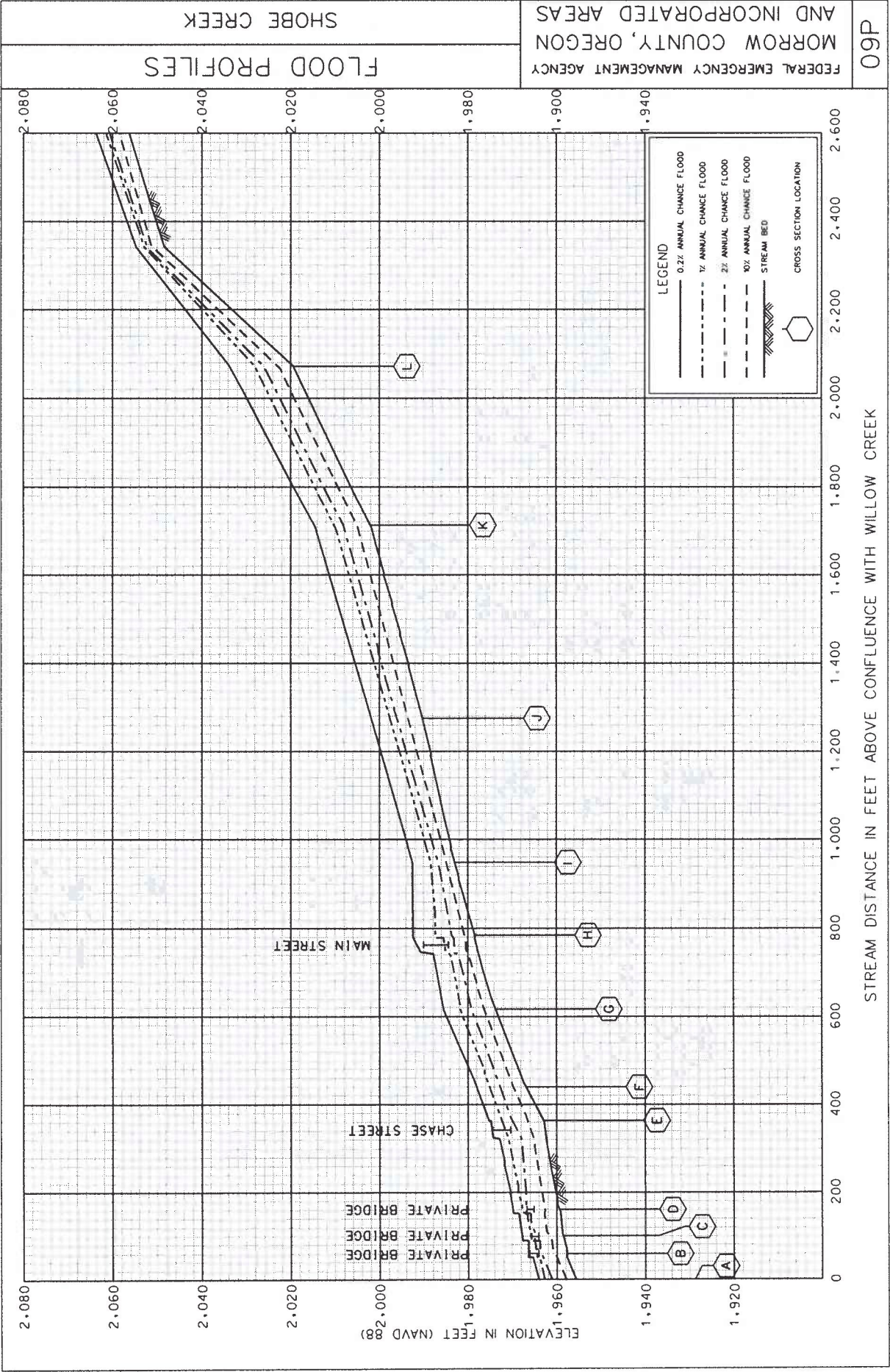




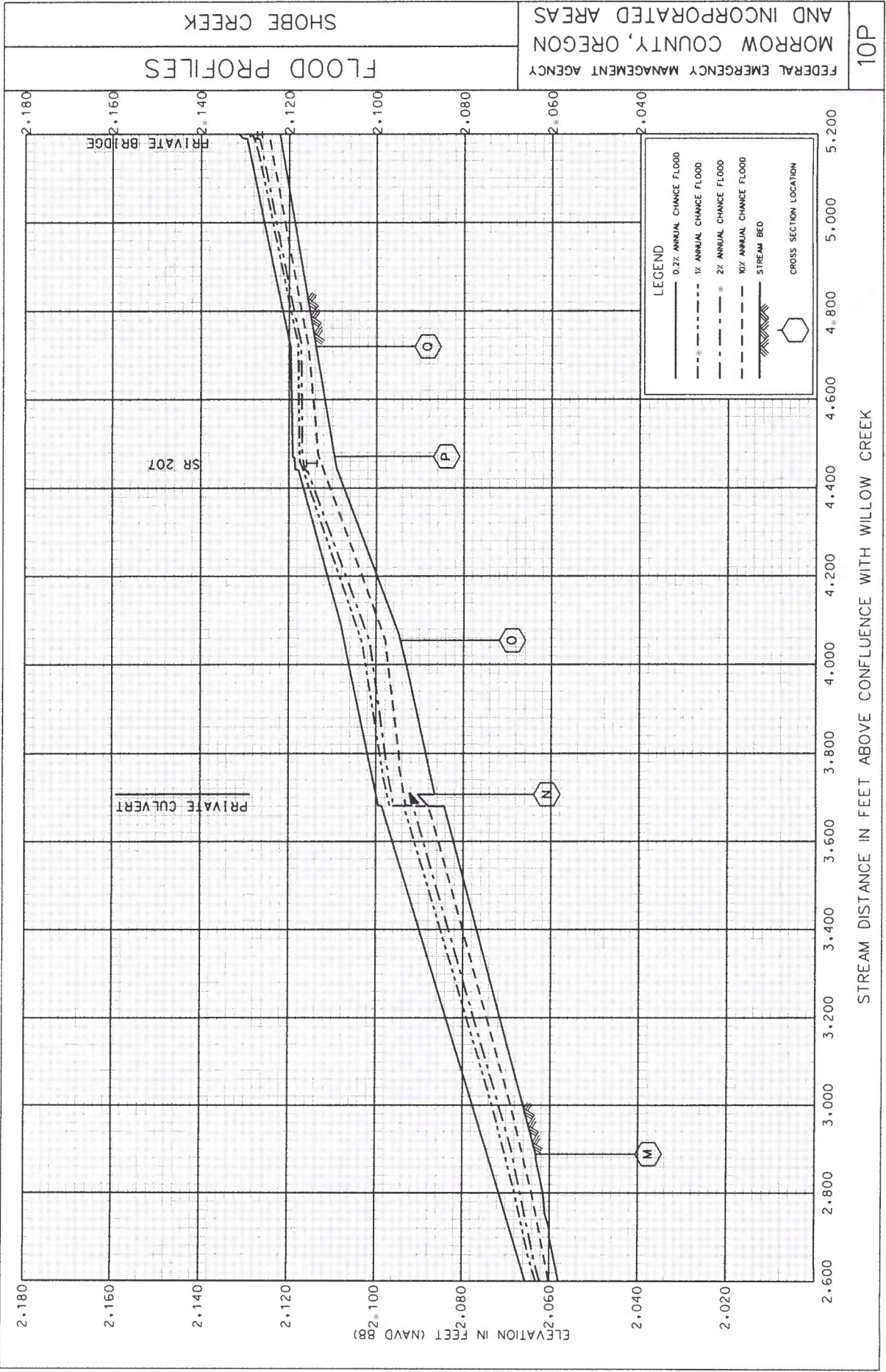
FEDERAL EMERGENCY MANAGEMENT AGENCY  
MORROW COUNTY, OREGON  
AND INCORPORATED AREAS

FLOOD PROFILES  
RIETMANN CREEK

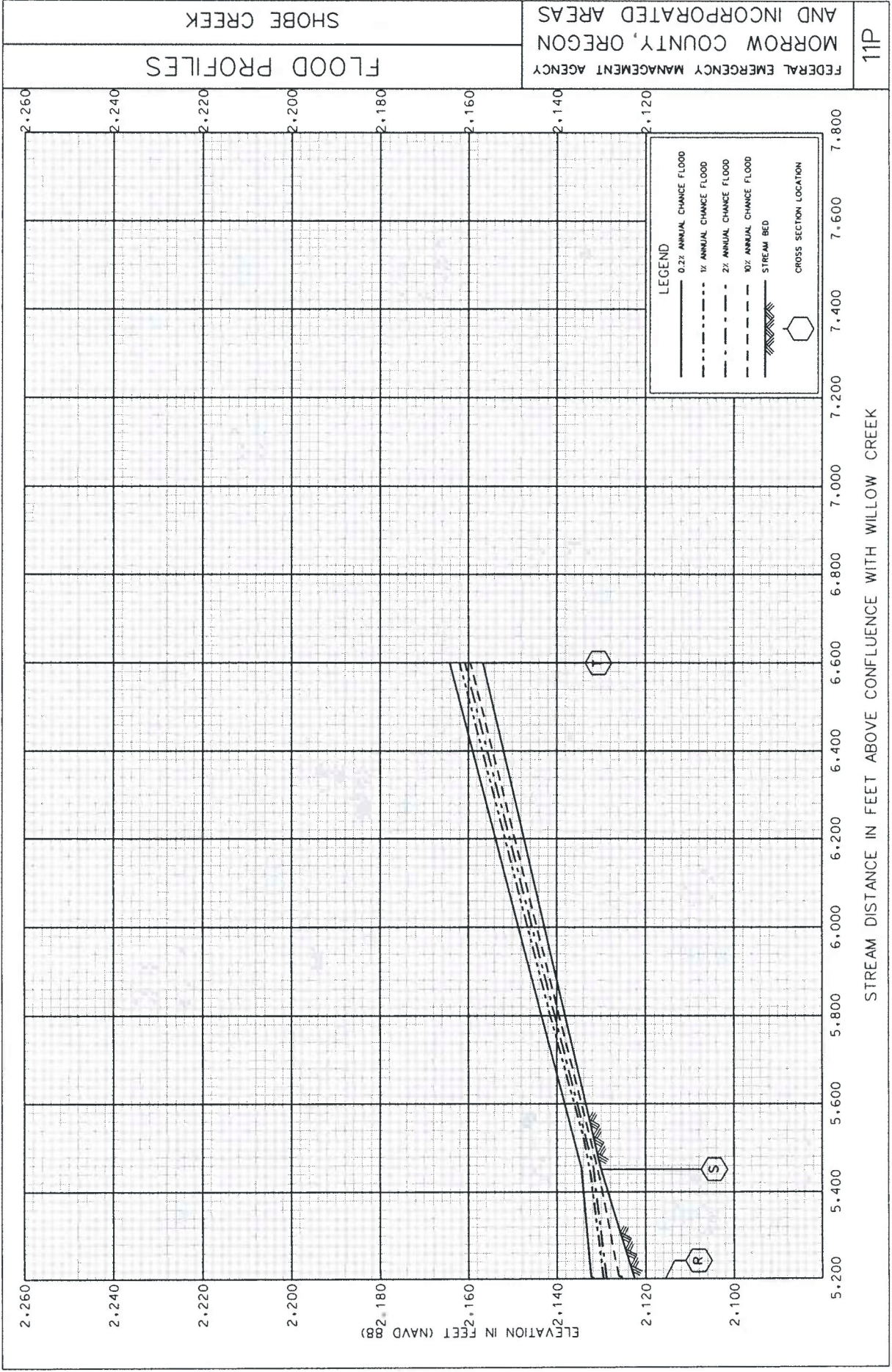




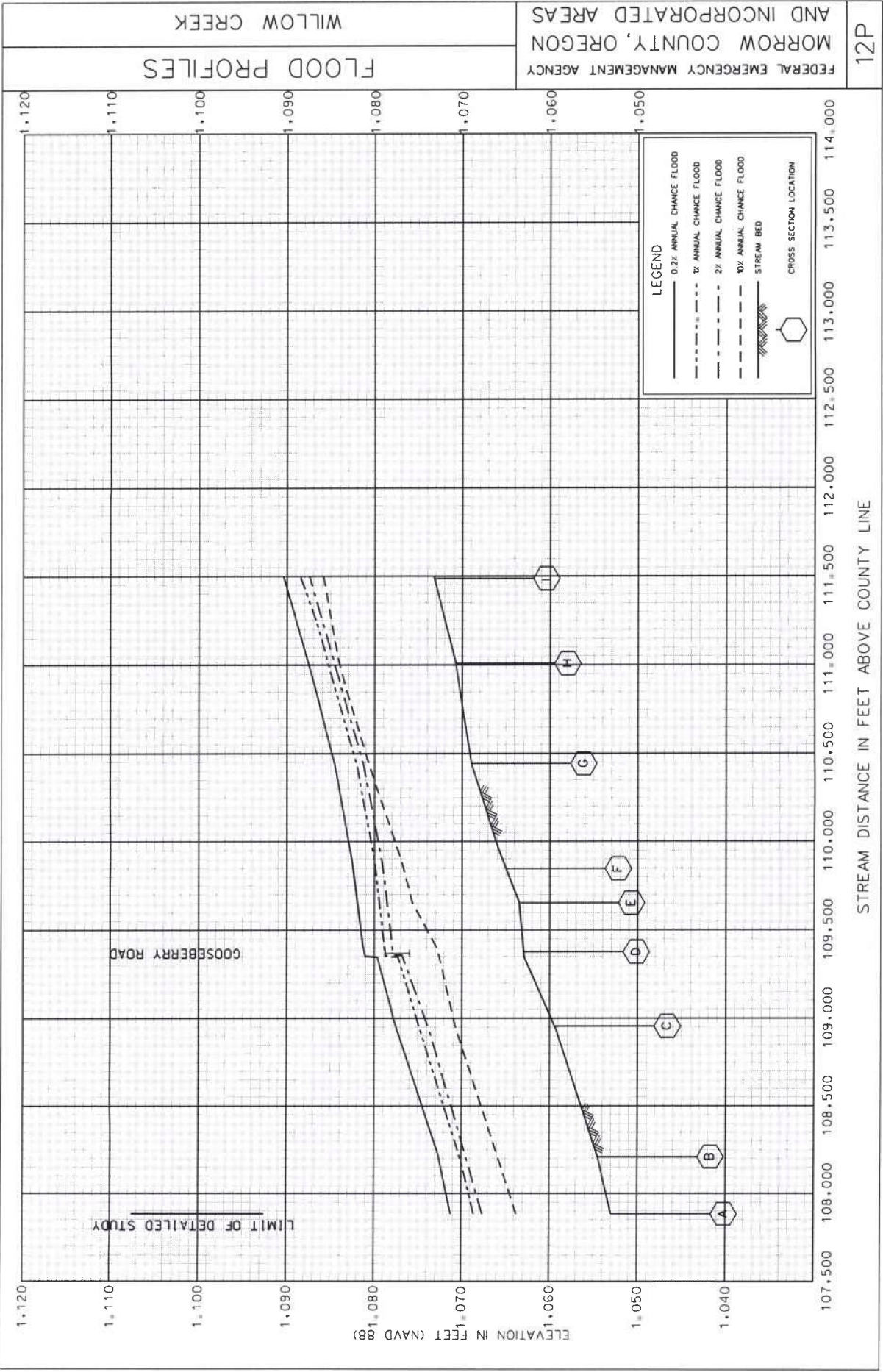


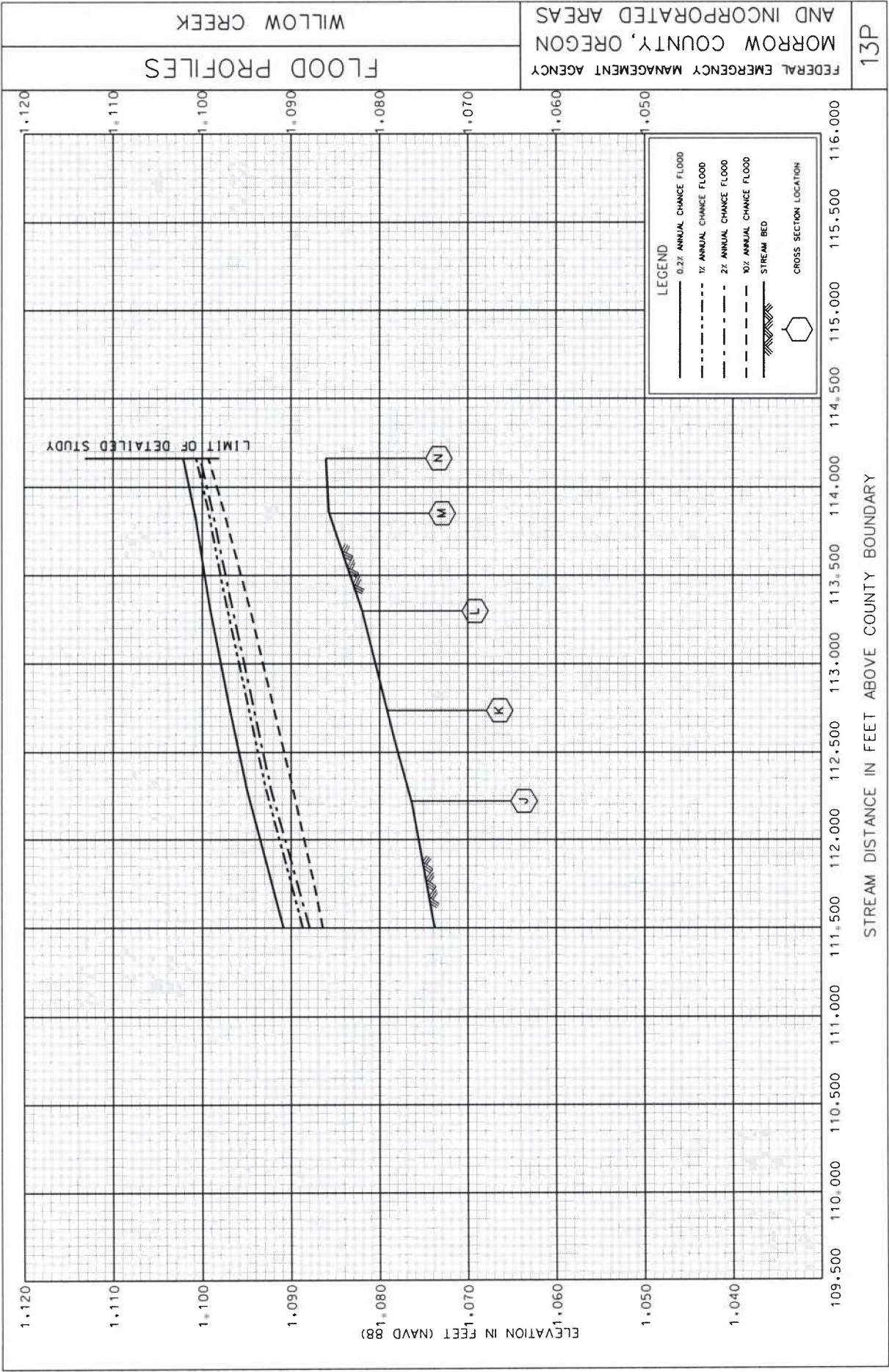




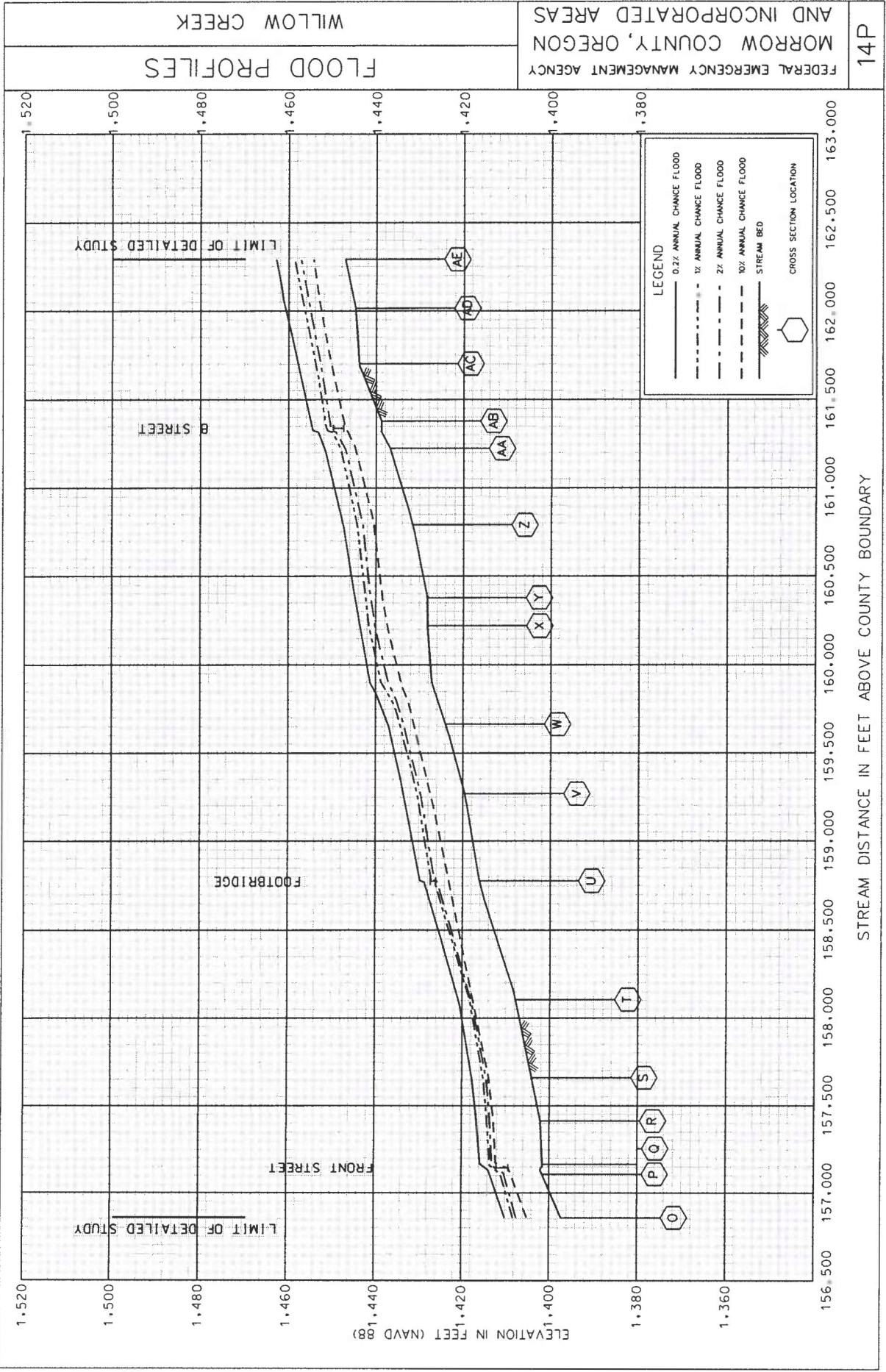




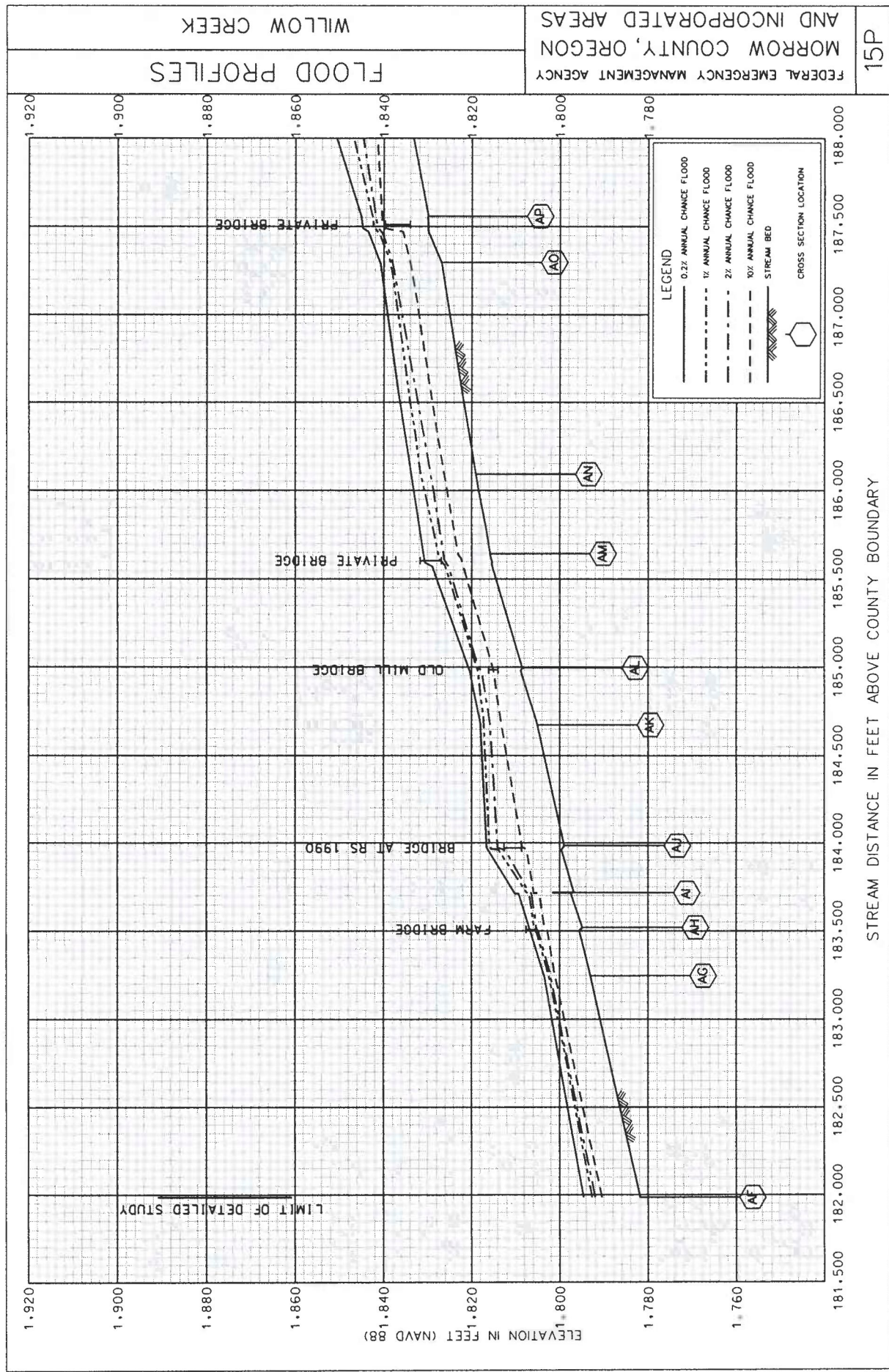




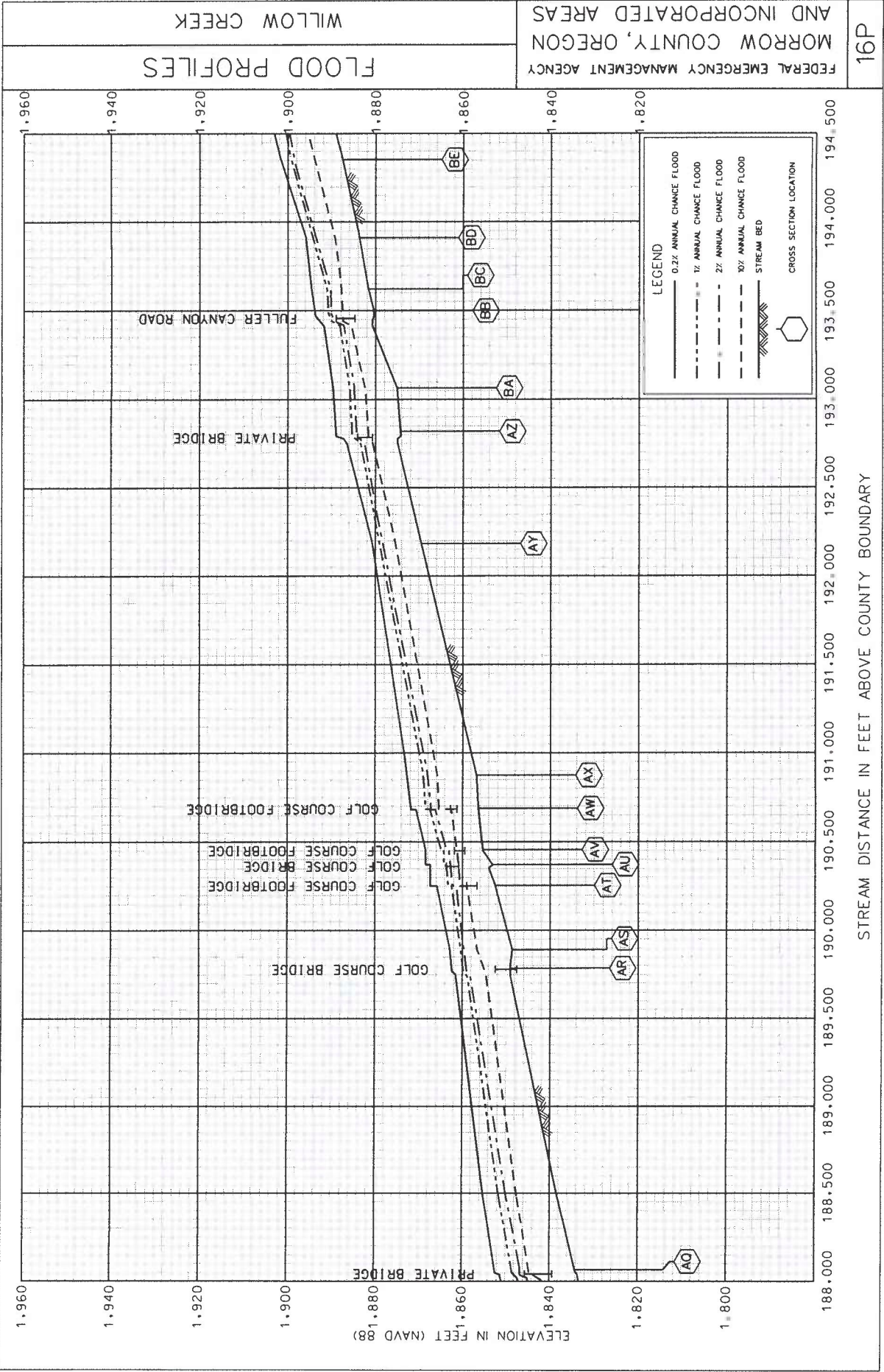


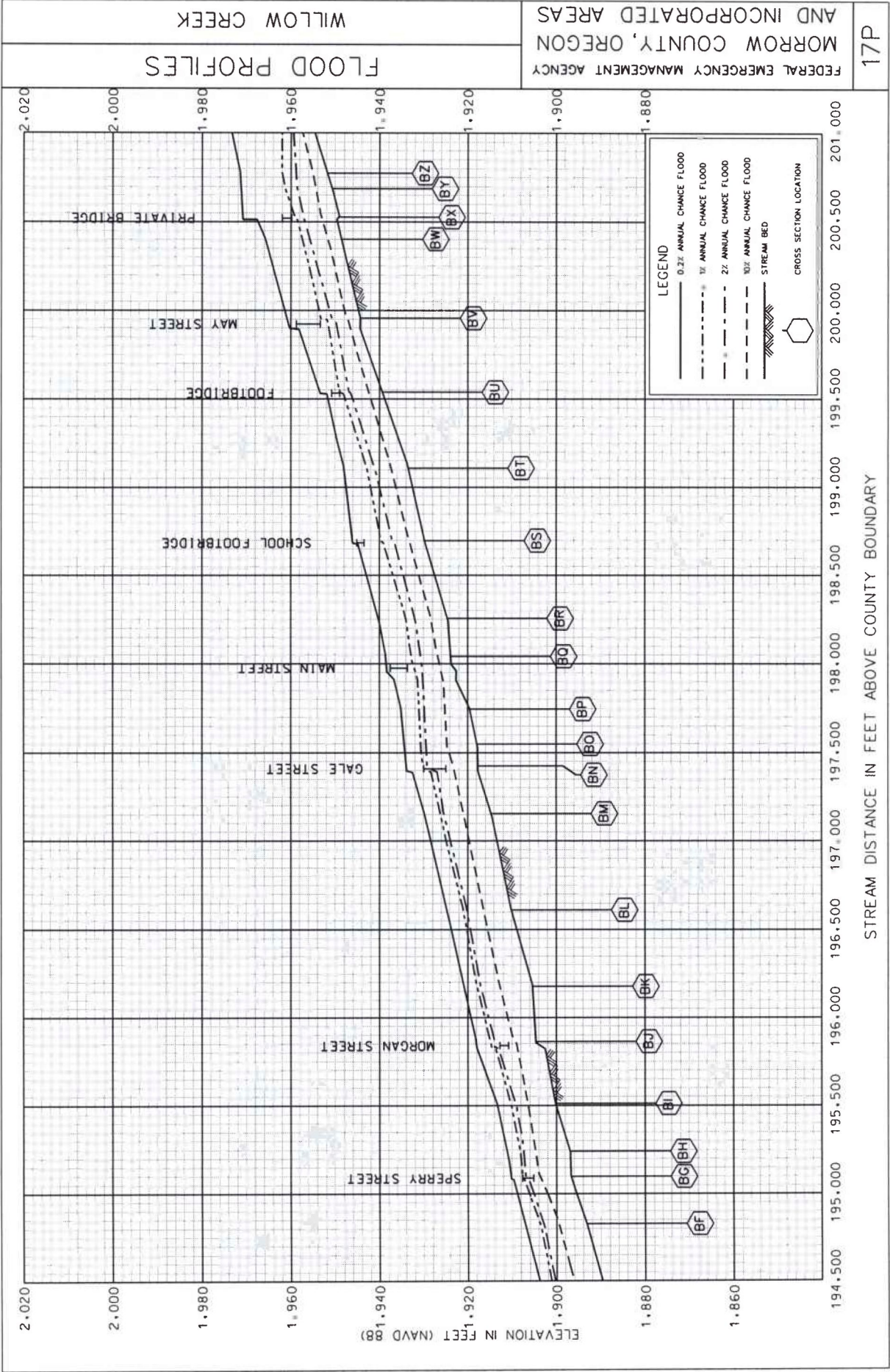




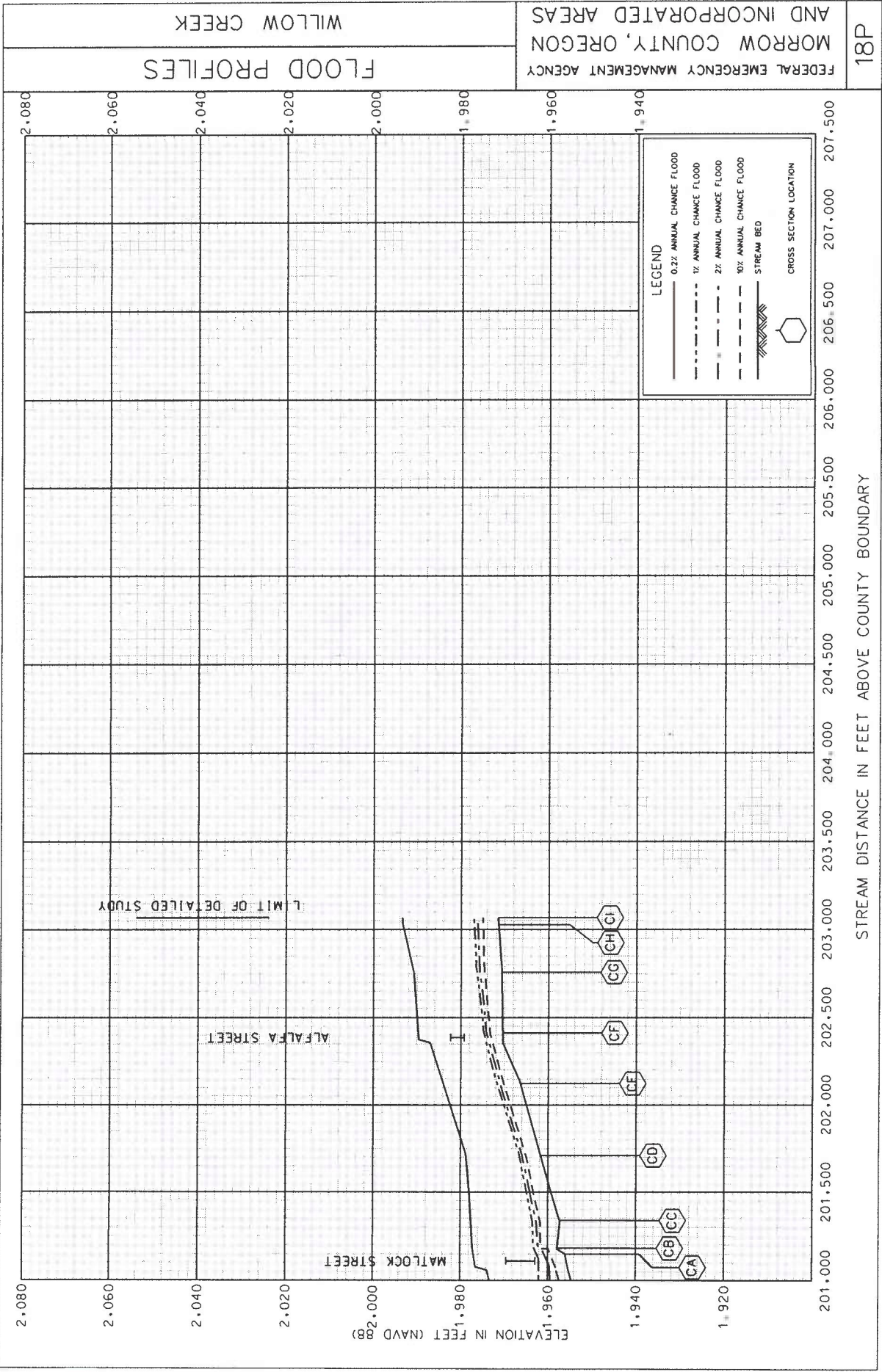












**SECTION 3.100. FLOOD HAZARD OVERLAY ZONE, FP.** In any zone which is a FH Overlay Zone, the requirements and standards of this section shall apply in addition to those herein specified for such zone previously, provided that if a conflict in regulations or standards occurs, the provisions of this section shall govern.

(1) APPLICATION OF PROVISIONS. The provisions of this section shall apply to all areas of special flood hazards within the jurisdiction of the County. The areas of special flood hazard identified by the Federal Insurance Administration on the "Flood Study" with accompanying "Flood Insurance Rate Maps" is hereby adopted by reference and declared to be a part of this Ordinance, and, thereof, the provisions of this section shall apply to all flood hazard areas identified by said Maps.

(2) DEFINITIONS. Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

"APPEAL" means a request for a review of the Planning Director's interpretation of any provision of this ordinance or a request for a variance.

"AREA OF SHALLOW FLOODING" means a designated AO or AH Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and, velocity flow may be evident. AO is characterized as sheet flow and AH indicates ponding.

"AREA OF SPECIAL FLOOD HAZARD" or "SPECIAL FLOOD HAZARD AREA (SFHA)" means the land in the flood plain within a community subject to a one-percent or greater chance of flooding in any given year. Designation on maps always includes the letter A.

"BASE FLOOD" means the flood have a one percent chance of being equaled or exceeded in any given



year. Also referred to as the "100-year-flood." Designation on maps always includes the letter A.

"BASEMENT" means any area of the building having its floor subgrade (below ground level) on all sides. Not to be confused with "below-grade crawlspace" which differs in function and size. (see below-grade crawlspace definition)

"BEFORE REGULATORY FLOODWAY" means a floodway without an actual "floodway" designation on the FEMA maps. Until FEMA makes an official designation concerning these areas and when the area has been designated within Zones A1 - 30 and AE on the FIRMs, development is limited as outlined in Section 5.3.

"BELOW-GRADE CRAWLSPACE" for this Ordinance means that area of a building which is bounded by foundation walls and is located between the bottom of the lowest floor and the ground. The interior grade of a crawlspace below the base flood elevation must not be more than two feet below the lowest adjacent exterior grade. Below-grade crawl spaces are generally less than four feet in height and provide a means of ventilation, visual inspection and access to pipes, ducts, and electrical wiring.

"CRITICAL FACILITY" means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to schools, nursing homes, hospitals police, fire and emergency response installations, installations which produce, use or store hazardous materials or hazardous waste.

"DEVELOPMENT" means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, or storage of equipment or materials, mining, dredging, filling, grading, paving, excavation or drilling operations located within the area of special flood hazard.

"ELEVATION CERTIFICATE" means the official document, FEMA Form 81-31, in which lowest floor and flood-proofing elevations are recorded. It provides information necessary to ensure compliance with Morrow

County's floodplain management ordinance, to determine flood insurance rates, and to support a request for a Letter of Map Amendment (LOMA) or Letter of Map Revision based on fill (LOMR-F).

"FLOOD" or "FLOODING" means a general and temporary condition of partial or complete inundation of normally dry land areas from:  
(1) The overflow of rivers or streams or  
(2) The unusual and rapid accumulation of or runoff of surface waters from any source.

"FLOOD INSURANCE RATE MAP (FIRM)" means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

"FLOOD INSURANCE STUDY" means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Boundary-Floodway Map, and the water surface elevation of the base flood.

"FLOODPLAIN" (OR "FLOOD-PRONE AREA") means any land area susceptible to being inundated by water from any source.

"FLOOD-PROOFING" means protection measures made to a non-residential building that is not elevated above the Base Flood level. It includes ensuring that the walls and floor are water-tight and capable of withstanding hydrostatic pressures and hydrodynamic forces (dry flood-proofing).

"FLOODWAY" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. Once established, nothing can be placed in the floodway that would cause any rise in Base Flood Elevation (i.e., 0.0 ft.)

"LOWEST FLOOR" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for the parking of vehicles, building access or storage, in an area other than a



basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance found at Section 5.2-1(2).

"MANUFACTURED HOME" means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include park trailers, travel trailers, and other similar recreational vehicles.

"MEAN SEA LEVEL" means, for purposes of the National Flood Insurance Program, the North American Vertical Datum (NAVD) of 1988, which is the horizontal or base line of reference for the FIRM elevations.

"NEW CONSTRUCTION" means structures for which the "start of construction commenced on or after the effective date of this ordinance.

"START OF CONSTRUCTION" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the state of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footing, piers, or foundation or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

"RECREATIONAL VEHICLE" means a vehicle which is:

- (a) Built on a single chassis;
- (b) 400 square feet or less when measured at the largest horizontal projection;
- (c) Designed to be self-propelled or permanently towable by a light duty truck; and
- (d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

"STRUCTURE" means a walled and roofed building including a gas or liquid storage tank that is principally above ground.

"SUBSTANTIAL DAMAGE" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

"SUBSTANTIAL IMPROVEMENT" means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

- (1) Before the improvement or repair is started, or
- (2) If the structure has been damaged and is being restored, before the damage occurred.

For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either:

- (1) Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, or



(2) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

"VARIANCE" means a grant of relief from the requirements of this ordinance which permits constructing in a manner that would otherwise be prohibited by this ordinance.

(3) GENERAL PROVISIONS

3.1 LANDS TO WHICH THIS ORDINANCE APPLIES. This ordinance shall apply to all areas of special flood hazards within the jurisdiction of Morrow County.

3.2 BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD. The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for Morrow County", dated December 18, 2007, with accompanying Flood Insurance Maps is hereby adopted by reference and declared to be a part of this ordinance.

3.3 PENALTIES FOR NONCOMPLIANCE. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this ordinance and other applicable regulations. Violation of the provisions of this ordinance by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall, upon conviction, be punishable by imposition of a fine not to exceed:

(1) \$500 in the case of a non-continuing offense; or

(2) \$1000 in the case of a continuing offense.

3.4 ABROGATION AND GREATER RESTRICTIONS. This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restriction. However, where this ordinance and another ordinance, easement, covenant, or deed

restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

3.5 INTERPRETATION. In the interpretation and application of this ordinance, all provisions shall be:

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the governing body; and
- (3) Deemed neither to limit nor repeal any other powers granted under State Statutes.

3.6 WARNING AND DISCLAIMER OF LIABILITY. The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Morrow County, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

#### (4) ADMINISTRATION

##### 4.1 ESTABLISHMENT OF DEVELOPMENT PERMIT

4.1-1 Development Permit Required. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 3.2. The permit shall be for all structures including manufactured homes, as set forth in the "DEFINITIONS", and for all development including fill and other activities, also as set forth in the "DEFINITIONS".



4.1-2 Application for Development Permit. Application for a development permit shall be made on forms furnished by the Morrow County Planning Director and may include but not be limited to; plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

- (1) Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;
- (2) Elevation in relation to mean sea level to which any structure has been flood proofed;
- (3) Certification by a registered professional engineer or architect that the flood proofing methods for any non-residential structure meet the flood proofing criteria in Section 5.2-2; and
- (4) Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.

4.2 DESIGNATION OF THE MORROW COUNTY PLANNING DIRECTOR. The Morrow County Planning Director is hereby appointed to administer and implement this ordinance by granting or denying development permit applications in accordance with its provisions.

4.3 DUTIES AND RESPONSIBILITIES OF THE PLANNING DIRECTOR. Duties of the Morrow County Planning Director shall include, but not be limited to:

4.3-1 Permit Review

- (1) Review all development permits to determine that the permit requirements of this ordinance have been satisfied;

(2) Review all development permits to determine that all necessary permits have been obtained from those Federal, State, or local governmental agencies from which prior approval is required;

(3) Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 5.3(1) are met.

4.3-2 Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the Planning Director shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, State or other source, in order to administer Sections 5.2, SPECIFIC STANDARDS, and 5.3 FLOODWAYS.

4.3-3 Information to be Obtained and Maintained

(1) Where base flood elevation data is provided through the Flood Insurance Study or required as in Section 4.3-2, obtain and record on FEMA Form 81-31 the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.

(2) For all new or substantially improved flood proofed structures:

(i) Verify and record on FEMA Form 81-31 the actual elevation (in relation to mean sea level), and

(ii) Maintain the flood proofing certifications required in Section 4.1(3).

(3) Maintain for public inspection all records pertaining to the provisions of this ordinance.



#### 4.3-4 Alteration of Watercourses

(1) Notify adjacent communities, the Department of State Lands, and the Department of Land Conservation and Development prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.

(2) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

4.3-5 Interpretation of FIRM Boundaries. Make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 4.4.

#### 4.4 VARIANCE PROCEDURE

##### 4.4-1 Appeal Board

(1) The Morrow County Planning Commission as established by Morrow County shall hear and decide appeals and requests for variances from the requirements of this ordinance.

(2) The Morrow County Planning Commission shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the Planning Director in the enforcement or administration of this ordinance.

(3) Those aggrieved by the decision of the Planning Commission, or any taxpayer, may appeal such decision to the Morrow County Court, as provided in the Morrow County Zoning Ordinance.

(4) In passing upon such applications, the Planning Commission and the Morrow County Court shall consider all technical evaluations, all relevant factors, standards specified in other sections of this ordinance, and:

(i) The danger that materials may be swept onto other lands to the injury of others;

(ii) The danger to life and property due to flooding or erosion damage;

(iii) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;

(iv) The importance of the services provided by the proposed facility to the community;

(v) The necessity to the facility of a waterfront location, where applicable;

(vi) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;

(vii) The compatibility of the proposed use with existing and anticipated development;

(viii) The relationship of the proposed use to the comprehensive plan and flood plain management program for that area;

(ix) The safety of access to the property in times of flood or for ordinary and emergency vehicles;

(x) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and



(xi) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

(5) Upon consideration of the factors of Section 4.4-1(4) and the purposes of this ordinance, the Planning Commission or the Morrow County Court may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.

(6) The Planning Director shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request.

#### 4.4-2 Conditions for Variances

(1) Generally, the only condition under which a variance from the elevation standard may be issued is for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (i-xi) in Section 4.4-1(4) have been fully considered. As the lot size increases the technical justification required for issuing the variance increases.

(2) Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in this section.

(3) Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.

(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(5) Variances shall only be issued upon:

(i) A showing of good and sufficient cause;

(ii) A determination that failure to grant the variance would result in exceptional hardship to the applicant;

(iii) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in Section 4.1-4(4), or conflict with existing local laws or ordinances.

(6) Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from the flood elevations should be quite rare.

(7) Variances may be issued for non-residential buildings in very limited circumstances to allow a lesser degree of flood proofing than watertight or dry-flood proofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except Section 4.1-2(1), and otherwise complies with Sections 5.1-1 and 5.1-2 of the GENERAL STANDARDS.



(8) Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

(5) PROVISIONS FOR FLOOD HAZARD REDUCTION

5.1 General Standards. In all areas of special flood hazards, the following standards are required:

5.1-1 Anchoring

(1) All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

(2) All manufactured homes must likewise be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas: guidebook for additional techniques).

5.1-2 Construction Materials and Methods

(1) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

(2) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

(3) Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed

and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

#### 5.1-3 Utilities

(1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

(2) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and

(3) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

#### 5.1-4 Subdivision Proposals

(1) All subdivision proposals shall be consistent with the need to minimize flood damage;

(2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;

(3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and

(4) Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less).

#### 5.1-5 Review of Building Permits. Where elevation data is not available either through the Flood



Insurance Study or from another authoritative source (Section 4.3-2), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc. where available. Failure to elevate at least two feet above the highest adjacent grade in these zones may result in higher insurance rates.

5.2 SPECIFIC STANDARDS. In all areas of special flood hazards where base flood elevation data has been provided as set forth in Section 3.2, BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD or Section 4.3-2, Use of Other Base Flood Data, the following provisions are required:

5.2-1 Residential Construction

(1) New Construction and substantial improvement of any **residential structure** shall have the lowest flood, including basement, elevated one-foot (1.0 ft.) or more above the base flood elevation.

(2) Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

(i) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;

(ii) The bottom of all openings shall be no higher than one foot above grade.

(iii) Openings may be equipped with screens, louvers, or other coverings or

devices provided that they permit the automatic entry and exit of floodwaters.

5.2-2 Non-residential Construction. New construction and substantial improvement of any commercial, industrial or other non-residential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation; or together with attendant utility and sanitary facilities, shall:

(1) Be flood proofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water.

(2) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(3) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in Section 4.3-3(2).

(4) Non-residential structures that are elevated, not flood proofed, must meet the same standards for space below the lowest floor as described in 5.2-1(2).

(5) Applicants flood proofing non-residential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the flood proofed level (e.g., a building constructed for the base flood level will be rated as one foot below that level).



### 5.2-3 Below-Grade Crawl Spaces.

Morrow County will allow below-grade crawlspace construction provided that the interior grade of the crawlspace below the base flood elevation must not be more than two feet below the lowest adjacent exterior grade and the height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall, must not exceed four feet at any point. Additionally there must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. (Reference: Crawlspace Construction for Buildings Located in Special Flood Hazard Areas, Federal Insurance Administration Technical Bulletin 11-01).

Below grade-crawlspace construction. Below-grade crawlspaces are allowed subject to the following standards as found in FEMA Technical Bulletin 11-01, Crawlspace Construction for Buildings Located in Special Flood Hazard Areas:

(1) The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy. Hydrostatic loads and the effects of buoyancy can usually be addressed through the required openings stated in Section B below. Because of hydrodynamic loads, crawlspace construction is not allowed in areas with flood velocities greater than five (5) feet per second unless the design is reviewed by a qualified design professional, such as a registered architect or professional engineer. Other types of foundations are recommended for these areas.

(2) The crawlspace is an enclosed area below the base flood elevation (BFE) and, as such, must have openings that equalize hydrostatic pressures by allowing the automatic entry and exit of floodwaters. The bottom of each flood vent opening can be no more than one (1) foot above the lowest adjacent exterior grade.

(3) Portions of the building below the BFE must be constructed with materials resistant to flood damage. This includes not only the foundation walls of the crawlspace used to elevate the building, but also any joists, insulation, or other materials that extend below the BFE. The recommended construction practice is to elevate the bottom of joists and all insulation above BFE.

(4) Any building utility systems within the crawlspace must be elevated above BFE or designed so that floodwaters cannot enter or accumulate within the system components during flood conditions. Ductwork, in particular, must either be placed above the BFE or sealed from floodwaters.

(5) The interior grade of a crawlspace below the BFE must not be more than two (2) feet below the lowest adjacent exterior grade.

(6) The height of the below-grade crawlspace, measured from the interior grade of the crawlspace to the top of the crawlspace foundation wall must not exceed four (4) feet at any point. The height limitation is the maximum allowable unsupported wall height according to the engineering analyses and building code requirements for flood hazard areas.

(7) There must be an adequate drainage system that removes floodwaters from the interior area of the crawlspace. The enclosed area should be drained within a reasonable time after a flood event. The type of drainage system will vary because of the site gradient and other drainage characteristics, such as soil types. Possible options include natural drainage through porous, well-drained soils and drainage systems such as perforated pipes, drainage tiles or gravel or crushed stone drainage by gravity or mechanical means.

(8) The velocity of floodwaters at the site should not exceed five (5) feet per second for any crawlspace. For velocities in excess of



five (5) feet per second, other foundation types should be used.

For more detailed information refer to FEMA Technical Bulletin 11-01.

5.2-4 Manufactured Homes. All manufactured homes to be placed or substantially improved within Zones A1-30, AH and AE on the community's FIRM shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is a minimum of one foot (1.0 ft.) above the base flood elevation, and shall be securely anchored to an adequately anchored foundation system in accordance with the provisions of subsection 5.1-1(2).

#### 5.2-5 Recreational Vehicles.

Recreational vehicles placed on sites are required to either:

- (i) Be on the site for fewer than 180 consecutive days,
- (ii) Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- (iii) Meet the requirements of 5.2-4 (Manufactured Homes) above and the elevation and anchoring requirements for manufactured homes.

#### 5.3 BEFORE REGULATORY FLOODWAY

In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the county's FIRMs, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the Base Flood more than one foot (1.0 ft.) at any point within the county.

#### 5.4 FLOODWAYS

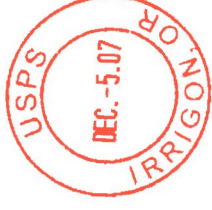
Located within areas of special flood hazard established in Section 3.2 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

(1) Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer or architect is provided demonstrating that encroachments **shall not result in any increase** in flood levels during the occurrence of the base flood discharge.

(2) If Section 5.4(1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Section 5.0, PROVISIONS FOR FLOOD HAZARD REDUCTION.



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