


CRS Webinar Series



Natural Floodplain Functions and the Community Rating System

- ✓ Molly O'Toole, PE CFM
- ✓ Dave Carlton, PE CFM
- ✓ Becca Fricke-Croft, CFM

Visual 430-1

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CRS Webinar Series

Housekeeping

- ✓ Attendees may be muted to reduce background noise
- ✓ To increase efficiency and so that we can end on time,
 - Use "Raise Hand" icon if you want to speak
 - Use "Q&A" feature to ask a question
- ✓ Please do NOT put your phone on "hold", it plays the hold music for everyone else on this call.
 - If you have to step away, mute your phone or hang up and rejoin the call later.

Visual 430-2

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CRS Webinar Series


Continuing Education Credits

- ✓ For full credit (1 CEC) you must be attentive and participate in the polls and activities
- ✓ Credit eligibility is based on attendance and participation
- ✓ We report to ASFPM once per month for the previous month
- ✓ If eligible, you will receive a Certificate of Attendance via email that you can forward to other agencies

Visual 430-3

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CRS Webinar Series



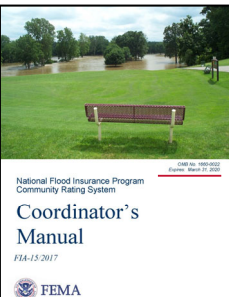
Natural Floodplain Functions and the Community Rating System

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Visual 430-4

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CRS Coordinator's Manual



Manual available on our websites in PDF:
fema.gov
CRSresources.org

2017 CRS Coordinator's Manual will be used throughout 2020.

Visual 430-5

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Natural Floodplain Functions and the CRS

CRS Activities and Elements					
300 Series - Public Information Activities	Max	Page	400 Series - Mapping and Regulations	Max	Page
310 (Elevation Certificates)	38	310-11	410 (Floodplain Mapping)	200	410-8
a EC Elevation Certificates after CRS application	48	310-13	b LEV Leverage	N/A	410-14
b ECPO Elevation Certificate on post-FIRM buildings	20	310-15	c SR State Review	180	410-18
c ECPC Elevation Certificate on pre-FIRM buildings	10	320-11	d HSS Higher study standards	180	410-19
320 (Map Information Service)	10	320-7	e SFDS Special hazards mapping	50	410-24
a MII Providing descriptive information from FIRMs	20	320-11	f MAPSH Special hazards mapping	50	410-24
b MIZ LHM/A Floodway into CBRF area	20	320-9	g CTF Cooperating Technical Partner	132	410-31
c MIO Other flood problems not shown on FIRM	20	320-11	420 (Open Space Preservation)	1,600	420-3
d MIA Flood depth data	20	320-14	a OSP Prepared open space	50	420-19
e MIO Special flood-related hazards	20	320-15	b DR Dead restriction	200	420-20
f MIE Historical/respective flood information	20	320-15	c SFODS Natural functions open space	50	420-19
g MIF Natural floodplain functions	200	330-6	d SFODS Special hazards open space	50	420-19
330 (Outreach Projects)	80	330-12	e OOI Open space incentives	100	420-26
a OIP Outreach projects	50	330-9	f LZ Low density zoning	800	420-28
b FRP Flood response preparations	80	330-12	g SFSP Natural shoreline protection	100	420-28
c PPI Program for Public Information bonus	30	330-17	a CC Development limitations	1,330	430-6
d IIR Stakeholder bonus	35	340-3	b FRB Freshwater	500	430-10
340 (Hazard Disclosure)	25	340-5	c FDN Foundation protection	80	430-18
a DRH Real estate agent disclosure of SFHA	12	340-7	d CBI Cumulative substantial improvements	90	430-17
b ODR Other disclosure requirements	8	340-10	e LSI Lower substantial improvements	22	430-19
c REB Real estate brochure	15	350-3	f PCF Protection of critical facilities	80	430-21
d OOH Disclosure of other hazards	10	350-6	g ENL Enclosure limits	240	430-23
350 (Flood Protection Information)	10	350-3	h BC Building code	100	430-25
a LIB Library	10	350-6	i LCP Local drainage protection	100	430-29
b LFD Locally pertinent documents in the library	40	360-4	j SFSP Special hazards theme plan	16	430-31
c WES Website	10	360-6	k CAZ Coastal A Zone regulations	650	430-32
360 (Flood Resistance Assessment)	40	360-4	l SHS Special hazards regulations	100	430-35
a FPA Property protection advice	10	360-7	m OHS Other higher standards	100	430-37
b FAD Advice after a risk visit	10	360-8	n SHS State-mandated standards	20	430-38
c FAA Financial assistance advice	10	360-10	o RA Regulations administration	67	430-40
d TRD Training	10	370-3			
370 (Flood Insurance Promotion)	10	370-3			
a FA Flood insurance assessment	15	370-8			
b CP Coverage plan	60	370-9			
c PI Plan implementation	20	370-11			
d TA Technical assistance					

Visual 430-6

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Natural Floodplain Functions and the CRS

CRS Activities and Elements			
Max	Page	Max	Page
400 Series: Mapping and Regulations		400 Series: Warning and Response	
a	160	a	75
b	15	b	75
c	27	c	115
d	20	d	25
e	350	e	30
f	315	f	30
g	40	g	95
h	20	h	30
i	40	i	30
j	20	j	30
k	382	k	30
l	140	l	30
m	100	m	30
n	2,250	n	30
o	1,600	o	30
p	200	p	45
q	50	q	30
r	70	r	30
s	30	s	30
t	120	t	20
u	100	u	30
v	540-511	v	30
w	540-11	w	30
x	540-13	x	30
y	540-18	y	30
z	540-21	z	30

For more details on the CRS: www.CRSResources.org

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CRS Resources

Home | 2013 Manual | **100 Series** | 200 Series | 300 Series | 400 Series | 500 Series | 600 Series | 700 Series | Training

100 Series: Introduction

ISO/CRS Specialists and FEMA CRS Contacts

ISO/CRS Specialists are responsible for reviewing community-developed plans and verifying implementation of activities created by the CRS. A state is listed below. The ISO/CRS Specialist is an employee of Insurance Services Office, Inc. (ISO), FEMA's CRS management contractor.

General questions may be directed to:

NFIP/CRS
P.O. Box 501016
Indianapolis, IN 46250-1016
(317) 848-2898
Fax: (201) 748-1936
nfipcrs@iso.com

[SPECIALISTS BY STATE](#) | [SPECIALISTS CONTACT INFORMATION](#) | [FEMA CRS REGIONAL COORDINATORS](#)

ISO/CRS Specialists by State

Alabama – Jonathan Smith
Alaska – Marlene Jacobs
Arizona – Kerry Redente
Nebraska – Christina Groves
Nevada – (S) Dave Arkins, (N) Gina Gabriel

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CRS Coordinator's Manual

Manual Page

National Flood Insurance Program
Community Rating System

Coordinator's Manual

FIA-15-2017

FEMA

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CRS Coordinator's Manual

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CONTENTS	
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400 Mapping and Regulations	400-1
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<u>420 Open Space Preservation</u>	<u>420-1</u>
430 Higher Regulatory Standards	430-1
440 Flood Data Maintenance	440-1
<u>450 Stormwater Management</u>	<u>450-1</u>
210 requesting CRS Credit	210-1
220 Credit Calculation	220-1
230 Verification	230-1
240 CRS Community Self Assessment	240-1
300 Public Information Activities	300-1
310 Elevation Certificates	310-1
320 Map Information Service	320-1
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340 Hazard Disclosure	340-1
350 Flood Protection Information	350-1

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Community Rating System

Manual Page 110-1

Goals

1. Reduce and avoid flood damage to insurable property
2. Strengthen and support the insurance aspects of the NFIP
3. Foster comprehensive floodplain management

Community Rating System
Insurance Manual

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Natural Floodplain Functions and the CRS

Floodplain management is a decision-making process that aims to achieve the wise use of the nation's floodplains.

"Wise use" means both reduced flood losses and protection of the natural resources and function of floodplains.

fema.gov/floodplain-management

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Natural Floodplain Functions and the CRS

Role of the Floodplain:

The diagram illustrates a cross-section of a floodplain. In the center is a 'Stream Channel' containing water. On either side of the channel is a 'Floodway' area. Beyond the floodways are the 'Flood Fringe' areas. The entire area is labeled as the 'Floodplain'. The ground level is shown in brown, and the water level is in blue.

FEMA NFP/CRS Visual 430-13

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Natural Floodplain Functions and the CRS

Role of the Floodplain:
Store and convey floodwaters

- Space
 - open space
- Ecosystem
 - prevent erosion and other degradation

The photograph shows a lush green golf course that has been partially inundated with floodwater. A wooden bench is visible in the foreground, and the water reflects the surrounding trees and sky.

FEMA NFP/CRS Visual 430-14

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Natural Functions - Ecosystem Services

The infographic features a central globe labeled 'Ecosystem Services'. Arrows point from the globe to various service categories, each with a small representative image:

- Atmospheric and Climate Regulation
- Flood Attenuation/Storm Surge Protection
- Biogeochemical Cycling
- Soil and Sediment Regulation
- Water Quality and Supply
- Pest and Disease Regulation
- Habitat/Fisheries
- Waste Regulation
- Food and Fiber
- Recreation / Aesthetic

FEMA NFP/CRS Visual 430-16

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Natural Floodplain Functions and the CRS

Webinar Overview:

- ✓ Floodplain open space
- ✓ Natural shoreline protection
- ✓ Prohibiting fill in floodplains
- ✓ Mapping natural functions or natural areas
- ✓ Watershed management
 - Low impact development (LID)
 - Erosion and sediment control and water quality
- ✓ Natural floodplain functions planning

FEMA NFP/CRS Visual 430-17

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Natural Floodplain Functions and the CRS

Activity 420

- Open space preservation (OSP)
- Natural functions open space (NFOS)
- Natural shoreline protection (NSP)

Activity 430

- Prohibition of fill (DL1)

Activity 440

- Additional map data (AMD12) natural functions layer

FEMA NFP/CRS Visual 430-18

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Natural Floodplain Functions and the CRS

Activity 450

- Managing the volume of stormwater runoff (DS),
- Low impact development (LID)
- Watershed management plan (WMP), items 3, 5, 6, and 7
- Erosion and sediment control (ESC)
- Water quality (WQ)

Activity 510

- Natural floodplain functions plan (NFP)



Visual 430-19

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Natural Floodplain Functions and the CRS

Activity 320 – Map Information Service

- National Wetlands Inventory
- Critical habitat by the U.S. Fish and Wildlife Service
- Areas identified in state or regional programs
- Existing and potential conservation areas
- Areas receiving CRS natural floodplain functions credit

Activity 330 – Outreach Projects

- Topic 6: Protect natural floodplain functions



Visual 430-20

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Natural Floodplain Functions and the CRS


Class 4 Prerequisite

100 points of natural and beneficial functions credit

Class 1 Prerequisite

150 points of natural and beneficial functions credit

Ten CRS elements award credit for natural and beneficial functions



Visual 430-21


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Natural Floodplain Functions and the CRS

Manual Page 210-5

CRS Natural and Beneficial Functions Activities and Elements

- 420—Natural functions open space (NFOS),
- 420—Natural shoreline protection (NSP),
- 430—Prohibition of fill (DL1),
- 440—Additional map data (AMD12) natural functions layer,
- 450—Managing the volume of stormwater runoff (SMR, DS),
- 450—Low impact development (LID),
- 450—Watershed management plan (WMP)
- 450—Erosion and sediment control (ESC),
- 450—Water quality (WQ), and
- 510—Natural floodplain functions plan (NFP).





Visual 430-22

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Natural Floodplain Functions and the CRS

Activity 420 (Open Space Preservation) 2,020 points

- Open space preservation (OSP) up to 1,450 points
- Open space incentives (OSI) up to 250 points
- Natural shoreline protection (NSP) up to 120 points
- Low-density zoning (LZ) up to 600 points

Visual 430-23

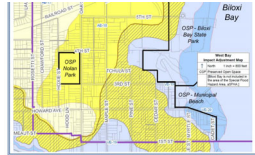

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Natural Floodplain Functions and the CRS

Open space preservation (OSP) up to 1,450 points

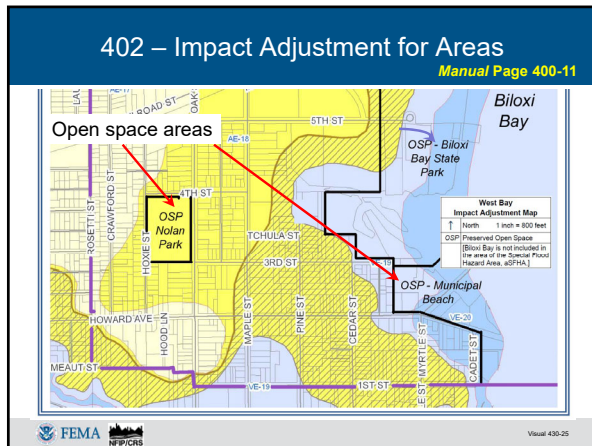
Area of regulatory floodplain open space x 1,450 = OSP credit

Area of SFHA

Visual 430-24

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Natural Floodplain Functions and the CRS

Activity 420 (Open Space Preservation) 2,020 points

- Open space preservation (OSP) up to 1,450 points
- Natural functions open space (NFOS) up to 350 points
- Natural shoreline protection (NSP) up to 120 points
- Open space incentives (OSI) up to 250 points
- Low-density zoning (LZ) up to 600 points

NFOS and NSP are "bonus" credits with OSP credit

FEMA NFP/CRS Visual 430-26

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Natural Floodplain Functions and the CRS

420 Natural Functions Open Space (350 points)

- NFOS1 – Naturally functioning, 170 points
- NFOS2 – within a NFP, 50 points
- NFOS3 – critical habitat, 50 points
- NFOS4 – within an open space corridor, 60 points
- NFOS5 – educational materials on site, 15 points

FEMA NFP/CRS Visual 430-27

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Natural Floodplain Functions and the CRS

Manual Page 420-13

422.c Natural functions open space (NFOS)

Open space in its natural state provides more benefits:

- Flood storage
- Reduced sedimentation
- Water quality
- Aquifer recharge
- Richer soils
- Biodiversity
- Habitat

FEMA NFP/CRS Visual 430-28

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Natural Floodplain Functions and the CRS

Manual Page 420-14

NFOS1 Parcel in its natural state

Examples:

- Areas not built on
- Restored to natural state
- Designated by recognized program

Not credited:

- Scenic designation
- Recreational areas
- Clear cutting allowed
- Dune/beach nourishment

FEMA NFP/CRS Visual 430-29

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Natural Floodplain Functions and the CRS

Manual Page 420-5

NFOS2 – Parcel in a natural functions protection plan

NFOS3 – Parcel is critical habitat

HABITAT CONSERVATION PLAN
A PLAN FOR THE PROTECTION OF SEA TURTLES AND ANASTASIA ISLAND BEACH MICE ON THE BEACHES OF ST. JOHNS COUNTY, FLORIDA

Prepared for:
U.S. FISH AND WILDLIFE SERVICE

SALMON HABITAT PROTECTION AND RESTORATION STRATEGY

WR1A-10
Puyallup Watershed

WR1A-12
Chambers/Clover Creek Watershed

Prepared by:
Paces & Curtis
March, 2008

FEMA NFP/CRS Visual 430-30

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Natural Floodplain Functions and the CRS

Manual Page 420-15

NFOS4 – Parcel in a designated open space corridor

The Green Infrastructure Plan for Nashville

FEMA NFP/CRS Visual 430-31

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Natural Floodplain Functions and the CRS

NFOS5 – Retired, but telling people about natural functions is an Activity 330 Outreach Project

FEMA NFP/CRS Visual 430-32

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Natural Floodplain Functions and the CRS

Manual Pages 420-17 – 18

NFOS Documentation

(1) Report or
(2) Letter or form signed by a professional

FEMA NFP/CRS Visual 430-33

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Natural Floodplain Functions and the CRS

Poll Questions

FEMA NFP/CRS Visual 430-34

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Natural Floodplain Functions and the CRS

Manual Page 420-28

Is this a naturally functioning stream?

Is this a naturally functioning shoreline?

FEMA NFP/CRS Visual 430-35

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Natural Floodplain Functions and the CRS

Manual Page 420-28

422.g NSP (Natural Shoreline Protection)

Requires preservation/protection of natural shorelines
(Will mean less **armoring** of property along shoreline)


FEMA NFP/CRS Visual 430-36

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Natural Floodplain Functions and the CRS
Manual Pages 420-28 – 29

422.g Natural shoreline protection (NSP)

- ✓ Regulations on private property
- ✓ Policy for public lands
- ✓ Programs that restore channels or shorelines




FEMA NFP/CRS Visual 430-37

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Natural Floodplain Functions and the CRS

420 Natural Shoreline Protection – 120 points

- Shoreline must currently be natural
- Protected by ordinance or plan
- No hardening, riprap or bulkheads
- Migration allowed,
- Discourages structures



FEMA NFP/CRS

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Natural Floodplain Functions and the CRS
Manual Pages 430-6 – 7

432.a Development limitations (DL)

(1) Prohibition of fill (DL1) (up to 280 points)

DL1a includes not approving any CLOMR-Fs or LOMR-Fs

DL1b: partial credit for compensatory storage requirement




FEMA NFP/CRS Visual 430-39

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Natural Floodplain Functions and the CRS

Activity 430 Prohibiting Fill

- ✓ Preventing fill preserves storage capacity of SFHA
- ✓ Preventing fill encourages natural vegetation
- ✓ Prevents higher flood elevations



FEMA NFP/CRS Visual 430-40

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Natural Floodplain Functions and the CRS

440 Additional Map Data (AMD12) – 14 points

AMD12 – natural flood functions layer

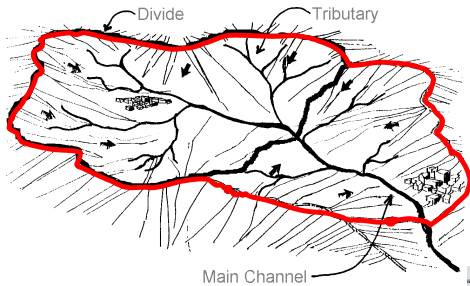
- Used by regulatory staff
- Wetland, riparian habitat

FEMA NFP/CRS Visual 430-41

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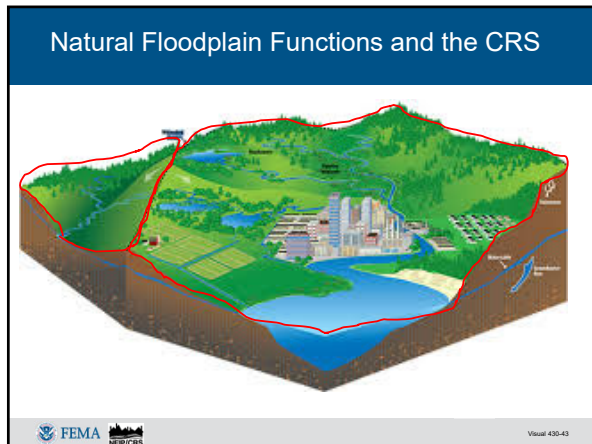
Natural Floodplain Functions and the CRS

Watershed

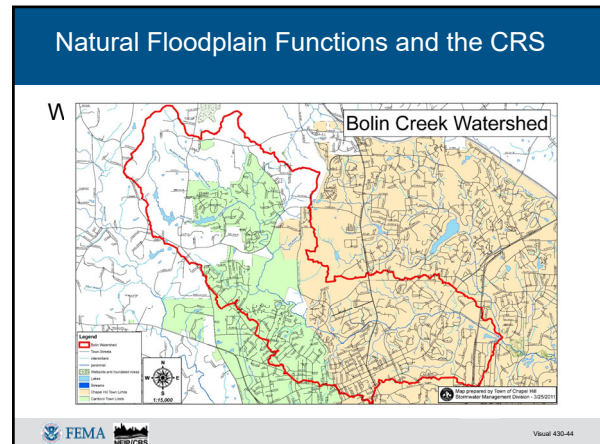


FEMA Visual 430-42

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Natural Floodplain Functions and the CRS
Manual Page 450-1

Activity 450 Stormwater Management

Development outside of floodplain creates additional runoff which creates additional flood flow and flood storage needs in the floodplain.

Objective: prevent future development
 ✓ from increasing flood hazards to existing development
 ✓ and to maintain and improve water quality

FEMA NFP/CRS Visual 430-45

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Natural Floodplain Functions and the CRS

450 Stormwater Management (DS) – 225 points

Manage the volume of runoff in addition to peaks

- Prevents erosion of stream systems
- Promotes recharge of groundwater and base flows
- Prevents increased peak flows
- Preserves stream health

FEMA NFP/CRS Visual 430-46

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Natural Floodplain Functions and the CRS

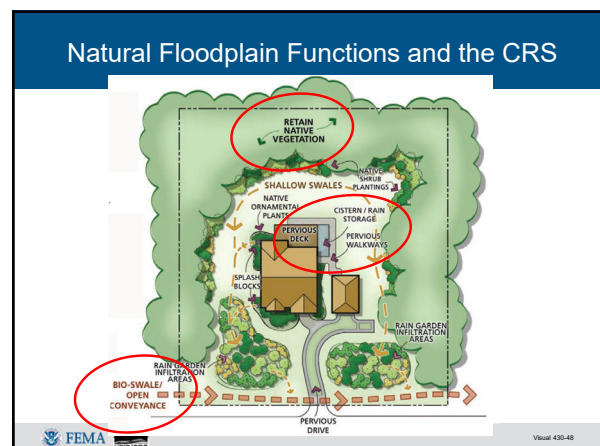
450 Stormwater Management (LID) – 25 points

Low Impact Development Techniques

- Reduces stormwater runoff
- Improves water quality
- Maintains base flows
- Maintains stream health
- Prevents erosion

FEMA NFP/CRS Visual 430-47


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Natural Floodplain Functions and the CRS
Manual Page 450-21

452.d. Water quality regulations (WQ)
WQ = 20 points, if new developments must incorporate BMPs



FEMA NFP/CRS Visual 430-55

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Natural Floodplain Functions and the CRS

510 Natural Flood Functions Plan (NFP) – 100 points
Credit for:

- Adopting plans that protect natural functions
- Habitat conservation plans
- Species/habitat restoration plans
- Green infrastructure plan
- Inventory of ecological functions – plan to preserve

In 2021 – more focus on community attention to the Endangered Species Act

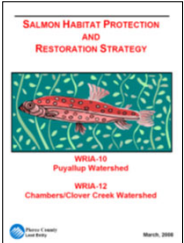
FEMA NFP/CRS Visual 430-56

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Natural Floodplain Functions and the CRS
Manual Page 510-35

512.c Natural floodplain functions plan (NFP)
A plan that protects one or more natural functions within the community's floodplain

- A habitat conservation plan
- A habitat protection or restoration plan
- A green infrastructure plan
- A section of a comprehensive or other community plan that has an ecological inventory and recommends actions




FEMA NFP/CRS Visual 430-57

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Natural Floodplain Functions and the CRS

Education:

Tell people about natural floodplain functions



FEMA NFP/CRS Visual 430-58

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Natural Floodplain Functions and the CRS

CRS Losses Avoided Study
FEMA and Texas A&M

Most effective elements are:

- Freeboard (FRB in Activity 430)
- Open space protection (OSP in Activity 420)

FEMA NFP/CRS Visual 430-59

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FEMA

<http://www.fema.gov/media-library/assets/videos/91096>

FEMA Higher Standards




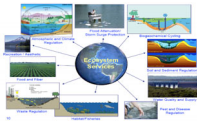
Video by Dave Stearrett - Jan 14, 2014

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Natural Floodplain Functions and the CRS

Summary

- ✓ CRS Activities 420 and 430
- ✓ CRS Activity 450 and LID
- ✓ Functions of the floodplain
- ✓ Ecosystem services
- ✓ Tell people about the important of protecting natural floodplain functions

Visual 430-61

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CRS Resources

[Home](#) | [Manual](#) | [100/General](#) | [200 Series](#) | [300 Series](#) | [400 Series](#) | [500 Series](#) | [600 Series](#) | [700 Series](#) | [Training & Videos](#)

100 Series: Introduction

ISO/CRS Specialists and FEMA CRS Contacts

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General questions may be directed to:

NFIP/CRS
 P.O. Box 501016
 Indianapolis, IN 46250-1016
 (317) 848-2898
 Fax: (201) 748-1936
 nfipcrs@iso.org

[SPECIALISTS BY STATE](#) | [SPECIALISTS CONTACT INFORMATION](#) | [FEMA CRS REGIONAL COORDINATORS](#)

ISO/CRS Specialists by State

Alabama – Jonathan Smith	Nebraska – Christina Groves	
Alaska – Marlene Jacobs	Nebraska – (D) Dave Adkins, (M) Gina Cahill	
Arizona – Kerry Redmond		

www.CRSResources.org

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CRS Webinar Series

CRS Webinar Series
(all times are 1:00 p.m. Eastern)


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NFIP/CRS Update Newsletter for CRS course offerings (E0278)


Visual 430-63

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Natural Floodplain Functions and the CRS



Questions?



Visual 430-64

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