Demystifying Your 620 and 630 Applications

ISO/CRS Specialist Short Round Robin Discussions

January 28, 2014

Pensacola, FL

What We Will Discuss

1. EMA linkages, why they are so important.
2. Activity Credit Criterion: 620 Levees
    1. 620 Documentation Checklist
    2. 620 Community Score Sheet
3. Activity Credit Criterion: 630 Dams
    1. 630 Documentation Checklist
    2. 630 Community Score Sheet
4. Class 4 and Class 1 Prerequisites
5. Impact Adjustments
6. Scenarios (If we have the time.)

NFIP/CRS

YouTube Webinar:
CRS Credits for Flood Warning

http://www.youtube.com/watch?v=R_UiWz2Ogu8

600 Series begins at 5:15 time hack.

NFIP/CRS

CRS 600 Series Warning and Response

— A Handout for the National Flood Insurance Program Community Rating System —

The 600 series of activities within the Community Rating System (CRS) relies on linkages between a community's emergency management mission and its CRS functions. These credited activities focus on the life safety aspect of a community's floodplain management program, particularly its emergency management flood warning programs, and can result in additional CRS discounts for your citizens.

For more information: http://www.youtube.com/watch?v=R_UiWz2Qzu8 = Link to 'YouTube' webinar 'CRS: Credits for Flood Warning.'

Catalyst of Change. Even though flood preparedness and response operations frequently rest within the purview of the community's (or county's) emergency management office, the emergency manager's role in advancing public safety, property protection, and disaster resiliency and sustainability through the National Flood Insurance Program and the CRS is sometimes overlooked by the community. The community CRS Coordinator typically coordinates with the emergency management agency to document activities that are credited under the 600 Series. The daily emergency management mission of prevention, preparedness, response, recovery, and mitigation can successfully be integrated with the CRS.

Background. Activities under the 600 Series encourage and promote the development and use of community-based flood detection systems, warning dissemination programs, coordinated flood response activities, and critical facility planning. These are the activities that help reduce the threat to life safety, health, and property damage. The emergency manager is the identified catalyst of this effort.

Three activities make up the 600 Series. Activity 610 (Flood Warning and Response) forms the building block of the series, because all communities must have these basic services. Activity 620 (Levees) and Activity 630 (Dams) are for more specific threats that are not present in every community, namely levees and dams. All three activities are organized in a similar fashion, with pertinent credit criteria, and require some actions for

- Advance notification of an impending flood (threat recognition),
- Warnings issued to the threatened population (warning),
- Steps taken to protect life and reduce losses (operations), and
- Coordination with critical facilities (critical facilities planning).

All three activities have a public information prerequisite to educate residents and businesses concerning safety measures before, during, and after a flood. All three activities require the annual completion of a drill, a flood exercise, or documentation of an actual response to an emergency. The latter also requires the submittal of an after-action report or lessons-learned document, including any recommendations for changes to the adopted plan. A flood, levee failure, dam failure, or hurricane exercise qualifies as an exercise for all three activities.

Activity 610 (Flood Warning and Response) is based on the principle that an ample warning combined with a flood response plan can prevent loss of life and property damage. It also encourages the development and documentation of more flood warning capabilities, redundancies in the acquisition and dissemination of hydrologic warning, greater accuracy in forecasting flood arrival times and peak elevations, and enhanced flood contingency planning that involves critical facilities.

The possible 395 points found within the five elements of Activity 610 are the building blocks of every community's emergency management program.

- Flood threat recognition system (FTR) is aimed at determining the capability level of the community's FTR system or systems.
- Emergency warning dissemination (EWD) looks at the linkages between FTR and the community's response to the emergency.
- Flood response operations (FRO) credit is based on the extent and level of the community's flood warning and response operations.
- Critical facilities planning (CFP) considers the coordination between the community and critical facilities within its environs.
- StormReady community (SRC) and TsunamiReady community (TRC) credits a community's participation in the National Weather Service's StormReady and TsunamiReady programs.

The community must receive some credit in the first four elements in order to receive any credit under Activity 610. For more details, refer to the 2013 *CRS Coordinator's Manual*.

Activity 620 (Levees) credits locally coordinated inspection and maintenance of levees and identification of impending levee failure areas, combined with a flood warning response plan that recognizes the hazards of levee failure. The 235 points are spread among five elements, which are similar to the first four elements of Activity 610.

- Levee maintenance (LM),
- Levee failure threat recognition system (LFR),
- Levee failure warning (LFW),
- Levee failure response operations (LFO), and
- Levee failure critical facilities planning (LCF)

Credit can be provided to accredited and non-accredited levees. Documentation of annual inspection and maintenance for LM credit is required, however, LM is not provided for accredited levees or levees owned and operated by a federal agency. As in 610, the community must receive some credit in each of the last four elements in order to be assigned any credit in Activity 620.

Activity 630 (Dams) encourages states to provide dam safety information to communities and encourages communities to provide timely identification of impending dam failure. For credit, a community must identify its high-hazard-potential dams and have corresponding inundation maps Credit is also available for dissemination of warnings and coordination of emergency response activities to reduce threats to life and property from dam failure. A maximum of 160 points are available under five elements:

- State dam safety program (SDS),
- Dam failure threat recognition system (DFR),
- Dam failure warning (DFW),
- Dam failure response operations (DFO), and
- Dam failure critical facilities planning (DCF).

Communities impacted by high-hazard-potential dams receive SDS credit. To receive additional credit in Activity 630, the community must obtain points in each of the last four elements.

NFIP/CRS

Activity	Element	2007 Max	Element	2013 Max	Title
		40	FTR	75	Flood Threat Recognition system
			FWD	75	Emergency Warni
	CFP				ning
	SRC				
				30	Tsunami
		255		395	
620	LPL		LM	95	Levee Maintenance
			LFR	30	Levee Failure threat Recognition system
			LFW	50	Levee Failure Warning
			LFO	30	Levee Failure response Operations
			LCF	30	Levee failure Criticial Facilities planning
		900		235	
630	SDS	75	SDS		State Dam Safety program
				15	condition assessment
				15	emergency action planning
				15	risk communication/public awareness
	DFP1	25	DFR	30	Dam Failure threat Recognition system
	DFP2	25	DFW	35	Dam Failure Warning
	DFP3	50	DFO	30	Dam Failure response Operations
			DCF	20	Dam failure Critical Facilities planning
		175		160	

Goals of the CRS

- Reduce and avoid flood damage to insurable property;
- Strengthen and support the insurance aspects of the NFIP, and;
- Foster comprehensive floodplain management.

EMA Linkages

Recognizes the role of the local emergency manager:

- Advancing Public Safety;
- Property Protection, and;
- Disaster resiliency / recovery through the NFIP and the CRS programs.

- Local Emergency Managers can be catalysts… agents of change.

EMA Linkages

620:

- **Levee maintenance/ warning and response/ identification of at risk area and critical facilities/maps**

630:

- **High Hazard Potential Dams/EAPs/warning and response/at risk areas and critical facilities**

Where does the CRS Coordinator fit?

EMA Linkages

If the Community CRS Coordinator is <u>not</u> the community's emergency manager:

- **Coordination required;**
- **Exchange and read each others plans, and;**
- **Become part of the emergency management team (planning cell and damage assessment teams, ESF5/ESF14)**
- **EM should be part of the community's CRS team.**

620: Levees

NO MOTORIZED VEHICLES PERMITTED on levee
NO TRESPASSING

MAY 13 2011

620: Levees

2007 Manual	Max Points		2012 Manual	Max Points
LPL – Level Protection Level	**900**		Dropped as the basis for credit	
Prerequisite: Levee built before 1991 and protects to the 25 year – 100 year level			Removed, but the levee must meet FEMA criteria for a levee	
Levee maintenance			**LM** – Levee Maintenance	**95**
Emergency plan			**LFR** – Levee Failure threat Recognition system	**30**
			LFW – Levee Failure Warning	**50**
			LFO – Levee Failure response Operations	**30**
			LCF – Levee failure Critical Facilities planning	**30**
Activity Max	**900**			**235**

620: Levees

621.b Activity Credit Criteria

(1) The lev… d
constructe…

(2) The lev… ained by a
public age…

(3) The cor… oded if the
levee were… ooded…

(4) The cor… and an
EAP…

(5) The cor… businesses
in the area…

(6) The cor… s local levee
failure and…

(7) The cor… rder to
receive LF…

(8) There must be at least one exercise and evaluation of the flood warning and response plan each year. (Flood, levee failure, dam failure, or hurricane) There must be an evaluation of the performance of the plan and recommended changes.

NFIP/CRS

Number of buildings in the community affected by levee failure	bLF =
622.a LM - Levee Maintenance	
LM1 - for the levee system maintenance plans	LM1 =
LM2 - for the levee system emergency actions plans	LM2 =
LM = LM1 + LM2	LM =
Number of buildings resulting from a failure of the levee being maintained	bLM =
Impact adjustment ratio = rLM = bLM ÷ bLF	rLM =
cLM = bLM x rLM	cLM =
622.b LFR - Levee Failure Threat Recognition System	
Levee failure threat recognition system	LFR =
Number of buildings that benefit from the levee threat failure recognition system	bLFR =
Impact adjustment ratio = rLFR = bLFR ÷ bLF	rLFR =
cLFR = LFR x rLFR	cLFR =
622.c LFW - Levee Failure Warning	
Levee failure warning	LFW =
Number of buildings that benefit from the levee failure flood warning	bLFW =
Impact adjustment ratio = rLFW = bLFW ÷ bLF	rLFW =
cLFW = LFW x rLFW	cLFW =
622.d LFO - Levee Failure Response Operations	
Levee failure response operations	LFO =
Number of buildings in the area covered by the levee failure response operations	bLFO =
Impact adjustment ratio = rLFO = bLFO ÷ bLF	rLFO =
cLFO = LFO x rLFO	cLFO =

Add numbers of buildings to Documentation Checklist.

Community : _____ County:_____

Activity 620 (Levees) Documentation Checklist

Levee Failure Recognition (LFR), Levee Failure Warning (LFW), Le
Operations (LFO), and Levee Failure Critical Facilities (LC
Credit Criteria and Documentation

Credit criteria for this activity are described in more detail in Section 621.b of th
Coordinator's Manual. The community must receive some LM 1 and LM 2 cre
credit for LFR, LFW, LFO, and LCF to receive any credit under this activity.

(1) The levee system(s) for which the community requests credit (or qualificatio
must have been designed and constructed as a levee (see Section 120 (Gloss
such as road and railroad embankments that divert flood waters are not cons
for the purposes of this credit unless it can be documented that they were int
levees and were designed and constructed accordingly.

☐ For an accredited levee: A statement signed by the owner of the commu
by a licensed professional engineer that states that the levee(s) meets all
recognition requirements; and the community must provide documentati
the inspection, maintenance, and emergency action plan criteria of the ac
levee(s).
[See Attachment _____ pages _____]

(2) The levee system(s) for which the community requests credit (or qualificatio
must be operated and maintained by a public agency. This could be a federa
a levee district, an office or department of the community, or other public en

☐ For the levee(s), being requested for credit, documentation that the levee
and owned by a public agency and was designed and constructed using s
engineering practices to contain, control, or divert flood waters in accord
designated risk reduction level. [Also provide levee name(s) (e.g., "Salt
and owner name(s).]
[See Attachment _____ pages _____]

(3) The community must submit a map showing the location of each levee and t
would be flooded if the levee were to be overtopped or fail and an inventory
and critical facilities that would be flooded upon overtopping or failure. For
following information must be submitted:

☐ (a) The approximate protection level of the levee and the expected overt
if different.
[See Attachment _____ pages _____]

☐ (b) A map of the levee(s) and the area(s) affected should the levee(s) be
fail. If there are no detailed levee breach maps or levee failure studie

Community : _____ County:_____ State: _____

would show the area below the expected overtopping elevation. Guidance for this mapping can be found in Section 621.c.
[See Attachment _____ pages _____.]

☐ (c) A list of the addresses of all properties with insurable buildings in the inundated areas. This list is needed for the required outreach project and the impact adjustment (bLF).
[See Attachment _____ pages _____.]

☐ (d) A list of the critical facilities that would be flooded or otherwise affected by a failure or by the overtopping of the levee.
[See Attachment _____ pages _____.]

(4) The community [or levee owner] must have a **levee maintenance plan** that includes annual inspections and an emergency action plan for the levee system(s), and the plans must meet the credit criteria for LM1 and LM2.

(5) The community must implement one or more **outreach projects** to the residents and businesses in the area(s) expected to be inundated by a flood that overtops a levee. The project(s) must tell people about their risk of flooding, how they will be warned of a levee failure flood, the safety measures they should take during a flood (e.g., evacuation procedures and routes), and the benefits of purchasing flood insurance. This can be done by using one or more of the following approaches:

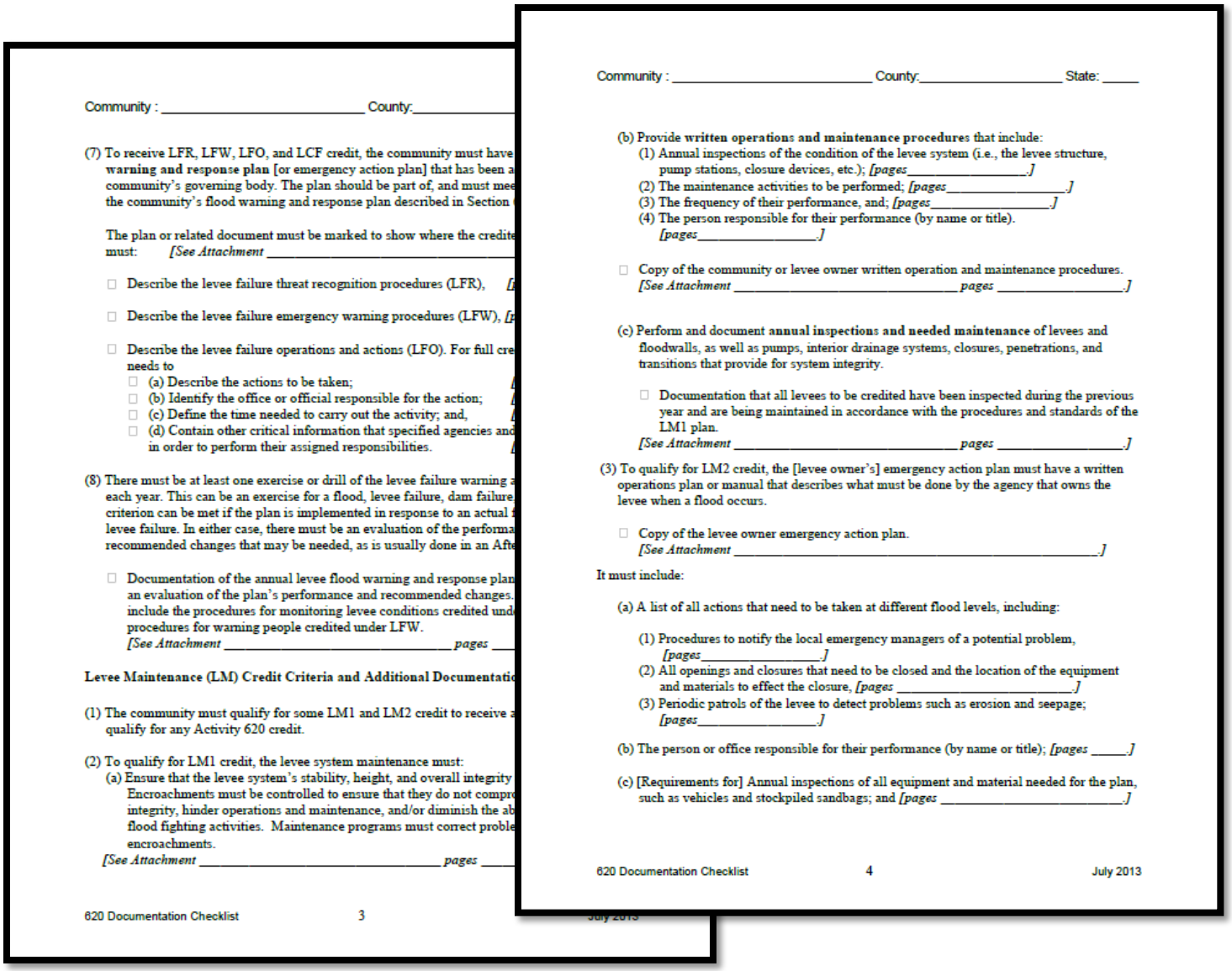
____ (a) Sending an outreach project (e.g., a letter, brochure, or newsletter) each year to all properties with insurable buildings in the area(s) subject to a flood that overtops the levee, or

____ (b) Developing an appropriate approach as part of a Program for Public Information credited Activity 330 (Outreach Projects).

☐ Documentation of outreach projects to the residents and businesses in the area(s) which will be inundated by a levee overtopping.
[See Attachment _____ pages _____.]

(6) The community must obtain some credit in all four levee failure warning and response elements (LFR, LFW, LFO, and LCF) to receive credit for its local levee failure and response planning.

NFIP/CRS



Community : _____ County:_____

(7) To receive LFR, LFW, LFO, and LCF credit, the community must have
warning and response plan [or emergency action plan] that has been a
community's governing body. The plan should be part of, and must mee
the community's flood warning and response plan described in Section

The plan or related document must be marked to show where the credite
must: *[See Attachment* _____

☐ Describe the levee failure threat recognition procedures (LFR), *[*

☐ Describe the levee failure emergency warning procedures (LFW), *[p*

☐ Describe the levee failure operations and actions (LFO). For full cre
needs to
- ☐ (a) Describe the actions to be taken; *[*
- ☐ (b) Identify the office or official responsible for the action; *[*
- ☐ (c) Define the time needed to carry out the activity; and, *[*
- ☐ (d) Contain other critical information that specified agencies and
in order to perform their assigned responsibilities. *[*

(8) There must be at least one exercise or drill of the levee failure warning a
each year. This can be an exercise for a flood, levee failure, dam failure,
criterion can be met if the plan is implemented in response to an actual
levee failure. In either case, there must be an evaluation of the performa
recommended changes that may be needed, as is usually done in an Afte

☐ Documentation of the annual levee flood warning and response plan
an evaluation of the plan's performance and recommended changes.
include the procedures for monitoring levee conditions credited und
procedures for warning people credited under LFW.
[See Attachment _____ *pages* ___

Levee Maintenance (LM) Credit Criteria and Additional Documentatio

(1) The community must qualify for some LM1 and LM2 credit to receive a
qualify for any Activity 620 credit.

(2) To qualify for LM1 credit, the levee system maintenance must:
(a) Ensure that the levee system's stability, height, and overall integrity
Encroachments must be controlled to ensure that they do not compr
integrity, hinder operations and maintenance, and/or diminish the ab
flood fighting activities. Maintenance programs must correct proble
encroachments.
[See Attachment _____ *pages* ___

Community : _____ County:_____ State: _____

(b) Provide **written operations and maintenance procedures** that include:
(1) Annual inspections of the condition of the levee system (i.e., the levee structure, pump stations, closure devices, etc.); *[pages_____.]*
(2) The maintenance activities to be performed; *[pages_____.]*
(3) The frequency of their performance, and; *[pages_____.]*
(4) The person responsible for their performance (by name or title).
[pages_____.]

☐ Copy of the community or levee owner written operation and maintenance procedures.
[See Attachment _____ *pages* _____.*]*

(c) Perform and document **annual inspections and needed maintenance** of levees and floodwalls, as well as pumps, interior drainage systems, closures, penetrations, and transitions that provide for system integrity.

☐ Documentation that all levees to be credited have been inspected during the previous year and are being maintained in accordance with the procedures and standards of the LM1 plan.
[See Attachment _____ *pages* _____.*]*

(3) To qualify for LM2 credit, the [levee owner's] emergency action plan must have a written operations plan or manual that describes what must be done by the agency that owns the levee when a flood occurs.

☐ Copy of the levee owner emergency action plan.
[See Attachment _____.*]*

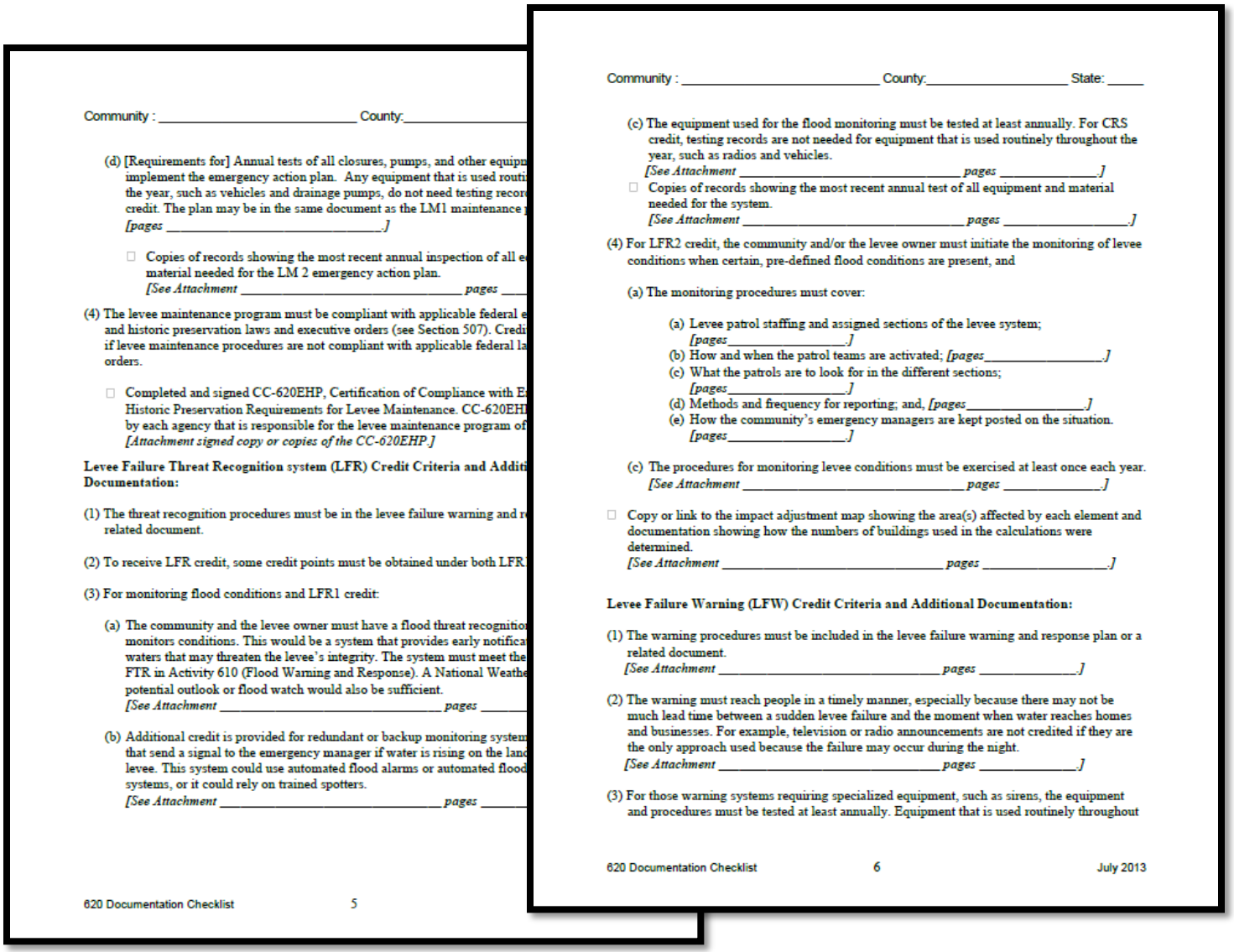
It must include:

(a) A list of all actions that need to be taken at different flood levels, including:

(1) Procedures to notify the local emergency managers of a potential problem, *[pages_____.]*
(2) All openings and closures that need to be closed and the location of the equipment and materials to effect the closure, *[pages* _____.*]*
(3) Periodic patrols of the levee to detect problems such as erosion and seepage; *[pages_____.]*

(b) The person or office responsible for their performance (by name or title); *[pages* _____.*]*

(c) [Requirements for] Annual inspections of all equipment and material needed for the plan, such as vehicles and stockpiled sandbags; and *[pages* _____.*]*



Community : _____ County:_____

(d) [Requirements for] Annual tests of all closures, pumps, and other equipu
implement the emergency action plan. Any equipment that is used routi
the year, such as vehicles and drainage pumps, do not need testing recor
credit. The plan may be in the same document as the LM1 maintenance
[pages _____.]

☐ Copies of records showing the most recent annual inspection of all e
material needed for the LM 2 emergency action plan.
[See Attachment _____ pages ____

(4) The levee maintenance program must be compliant with applicable federal e
and historic preservation laws and executive orders (see Section 507). Credi
if levee maintenance procedures are not compliant with applicable federal la
orders.

☐ Completed and signed CC-620EHP, Certification of Compliance with E
Historic Preservation Requirements for Levee Maintenance. CC-620EH
by each agency that is responsible for the levee maintenance program of
[Attachment signed copy or copies of the CC-620EHP.]

**Levee Failure Threat Recognition system (LFR) Credit Criteria and Additi
Documentation:**

(1) The threat recognition procedures must be in the levee failure warning and r
related document.

(2) To receive LFR credit, some credit points must be obtained under both LFR

(3) For monitoring flood conditions and LFR1 credit:

(a) The community and the levee owner must have a flood threat recognitio
monitors conditions. This would be a system that provides early notifica
waters that may threaten the levee's integrity. The system must meet the
FTR in Activity 610 (Flood Warning and Response). A National Weathe
potential outlook or flood watch would also be sufficient.
[See Attachment _____ pages _____

(b) Additional credit is provided for redundant or backup monitoring system
that send a signal to the emergency manager if water is rising on the lan
levee. This system could use automated flood alarms or automated flood
systems, or it could rely on trained spotters.
[See Attachment _____ pages _____

620 Documentation Checklist 5

Community : _____ County:_____ State: _____

(c) The equipment used for the flood monitoring must be tested at least annually. For CRS credit, testing records are not needed for equipment that is used routinely throughout the year, such as radios and vehicles.
[See Attachment _____ pages _____.]

☐ Copies of records showing the most recent annual test of all equipment and material needed for the system.
[See Attachment _____ pages _____.]

(4) For LFR2 credit, the community and/or the levee owner must initiate the monitoring of levee conditions when certain, pre-defined flood conditions are present, and

(a) The monitoring procedures must cover:

(a) Levee patrol staffing and assigned sections of the levee system;
[pages_____.]
(b) How and when the patrol teams are activated; *[pages_____.]*
(c) What the patrols are to look for in the different sections;
[pages_____.]
(d) Methods and frequency for reporting; and, *[pages_____.]*
(e) How the community's emergency managers are kept posted on the situation.
[pages_____.]

(c) The procedures for monitoring levee conditions must be exercised at least once each year.
[See Attachment _____ pages _____.]

☐ Copy or link to the impact adjustment map showing the area(s) affected by each element and documentation showing how the numbers of buildings used in the calculations were determined.
[See Attachment _____ pages _____.]

Levee Failure Warning (LFW) Credit Criteria and Additional Documentation:

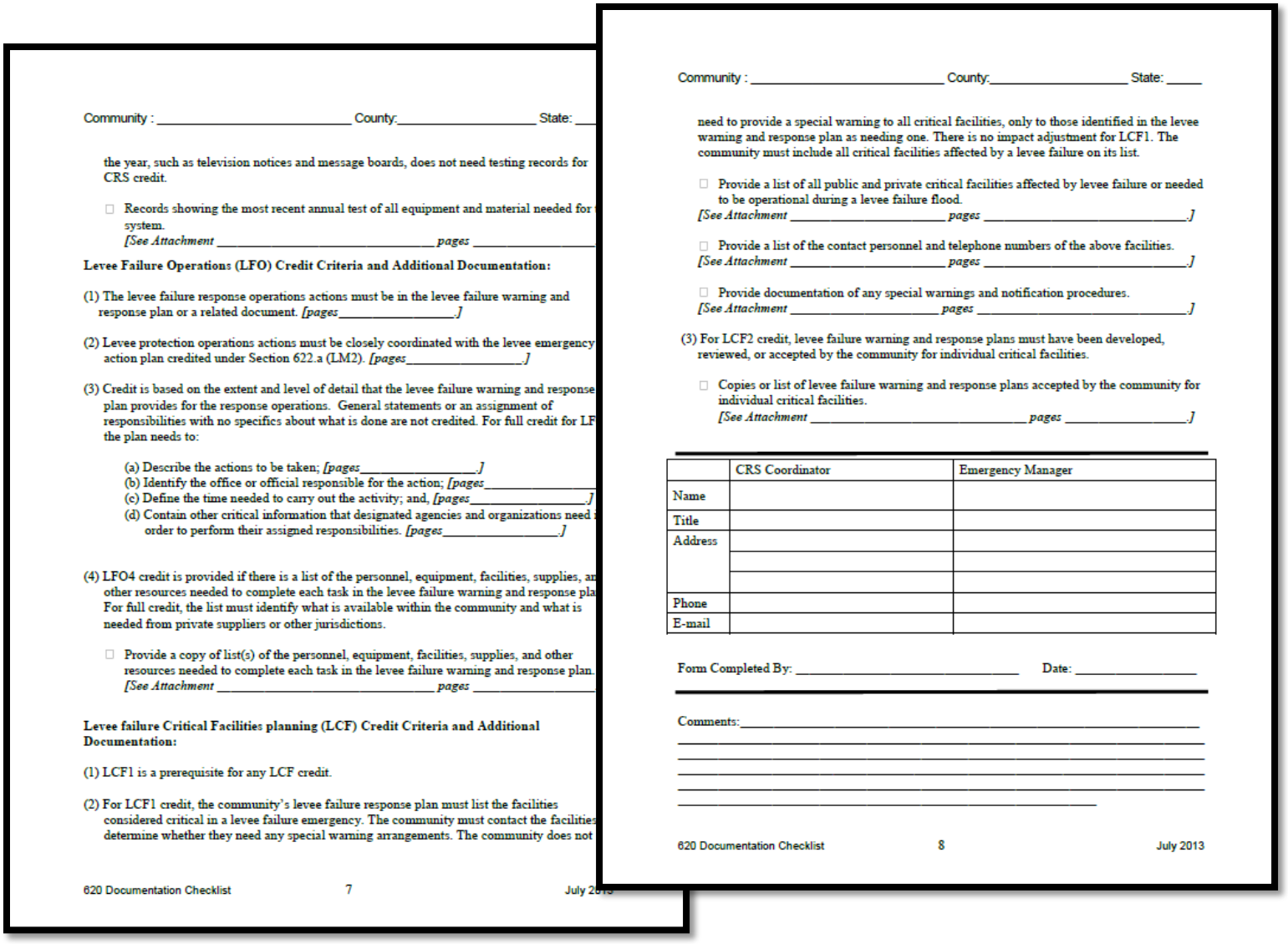
(1) The warning procedures must be included in the levee failure warning and response plan or a related document.
[See Attachment _____ pages _____.]

(2) The warning must reach people in a timely manner, especially because there may not be much lead time between a sudden levee failure and the moment when water reaches homes and businesses. For example, television or radio announcements are not credited if they are the only approach used because the failure may occur during the night.
[See Attachment _____ pages _____.]

(3) For those warning systems requiring specialized equipment, such as sirens, the equipment and procedures must be tested at least annually. Equipment that is used routinely throughout

620 Documentation Checklist 6 July 2013

NFIP/CRS



Community : _____ County:_____ State: ___

the year, such as television notices and message boards, does not need testing records for CRS credit.

☐ Records showing the most recent annual test of all equipment and material needed for system.
[See Attachment _____ pages _____

Levee Failure Operations (LFO) Credit Criteria and Additional Documentation:

(1) The levee failure response operations actions must be in the levee failure warning and response plan or a related document. *[pages_____.]*

(2) Levee protection operations actions must be closely coordinated with the levee emergency action plan credited under Section 622.a (LM2). *[pages_____.]*

(3) Credit is based on the extent and level of detail that the levee failure warning and response plan provides for the response operations. General statements or an assignment of responsibilities with no specifics about what is done are not credited. For full credit for LF the plan needs to:

(a) Describe the actions to be taken; *[pages_____.]*
(b) Identify the office or official responsible for the action; *[pages_____*
(c) Define the time needed to carry out the activity; and, *[pages_____.]*
(d) Contain other critical information that designated agencies and organizations need order to perform their assigned responsibilities. *[pages_____.]*

(4) LFO4 credit is provided if there is a list of the personnel, equipment, facilities, supplies, a other resources needed to complete each task in the levee failure warning and response pla For full credit, the list must identify what is available within the community and what is needed from private suppliers or other jurisdictions.

☐ Provide a copy of list(s) of the personnel, equipment, facilities, supplies, and other resources needed to complete each task in the levee failure warning and response plan.
[See Attachment _____ pages _____

Levee failure Critical Facilities planning (LCF) Credit Criteria and Additional Documentation:

(1) LCF1 is a prerequisite for any LCF credit.

(2) For LCF1 credit, the community's levee failure response plan must list the facilities considered critical in a levee failure emergency. The community must contact the facilities determine whether they need any special warning arrangements. The community does not

Community : _____ County:_____ State: _____

need to provide a special warning to all critical facilities, only to those identified in the levee warning and response plan as needing one. There is no impact adjustment for LCF1. The community must include all critical facilities affected by a levee failure on its list.

☐ Provide a list of all public and private critical facilities affected by levee failure or needed to be operational during a levee failure flood.
[See Attachment _____ pages _____.]

☐ Provide a list of the contact personnel and telephone numbers of the above facilities.
[See Attachment _____ pages _____.]

☐ Provide documentation of any special warnings and notification procedures.
[See Attachment _____ pages _____.]

(3) For LCF2 credit, levee failure warning and response plans must have been developed, reviewed, or accepted by the community for individual critical facilities.

☐ Copies or list of levee failure warning and response plans accepted by the community for individual critical facilities.
[See Attachment _____ pages _____.]

	CRS Coordinator	Emergency Manager
Name		
Title		
Address		
Phone		
E-mail		

Form Completed By: _____ Date: _____

Comments:_____

A Quick Pause…

Feel like you are missing something vital?

Activity 620 (Levees)

620 Score Sheet

July 2013

620 Levees (Max 235 Points)

Community: _____ **County:** _____ **State:** _____

621 Credit Points: *(LM is a prerequisite for the four emergency preparedness and response elemen credit in LFR, LFW, LFO, and LCF must be obtained to receive any 620 credit.)*

a. Activity Credit Criteria:

(a) Levee(s) designed and constructed as a levee, (yes or no) _____
(b) Requested for credit levee system(s) are operated and maintained by a public agency, (yes or no) _____
(c) Map(s) showing location of each levee and the areas that would be impacted if overtopped or failure, (yes or no) _____
(d) Inventory of buildings and critical facilities that would be flooded upon overtopping or failure submitted, (yes or no) _____
(e) Approximate protection level/overtopping elevation of levee(s) submitted, (yes or no) _____
(f) List of the addresses of all insurable buildings in the inundation areas submitted, (yes or no) _____
(g) List of critical facilities that would be flooded submitted, (yes or no) _____
(h) Levee maintenance/annual inspection/EAP submitted, (yes or no) _____
(i) Implements one or more creditable outreach projects, (yes or no) _____
(j) Community adopted levee failure flood warning & response plan submitted, (yes or no) _____
(k) Conducted exercise or drill during the past year, (yes or no) _____

b. Levee Maintenance (**LM**): *(Up to 95 points)*

(l) LM 1: Levee system maintenance plan (50 points) _____
(m) LM 2: Levee system emergency action plans (45 points) _____
LM = the total of (a) and (b) above: **LM =** _____

c. Levee Failure threat Recognition system (**LFR**): *(Up to 30 points)*

(a) LFR 1a: Monitoring river flood conditions (10 points): _____
(b) LFR 1b: Monitoring flood conditions along levee (5 points): _____
(c) LFR 2: Monitoring levee conditions (up to 15 points): _____
LFR = the total of (a) through (c) above. **LFR =** _____

620 Community Score Sheet Edition: July 2013

d. Levee Failure Warning (**LFW**): *(Up to 50 points)*

(a) LFW 1: Scripted messages and staff guidance (5 points): _____
(b) LFW 2: Public message content (up to 5 points): _____
(c) LFW 3: Outdoor voice system or siren system (10 points): _____
(d) LFW 4: Either
  a. Agencies responsible, or (2 points): _____
  b. Routes, procedures, staff, and equipment (10 points): _____
(e) LFW 5: EAS with pre-scripted messages (10 points): _____
(f) LFW 6: Telephonic warning and notification (10 points): _____
(g) LFW 7: NOAA weather radio & other flood warning (up to 10 points): _____
LFW = the total of (a) through (g) above.
If the total is greater than 50, then LFW = 50: **LFW =** 0

e. Levee Failure response Operations (**LFO**): *(Up to 30 points)*

(a) LFO 1: Scenarios for levee failure or overtopping (10 points): _____
(b) LFO 2: Plan assigns tasks (10 points): _____
(c) LFO 3: Special needs database and plan (5 points): _____
(d) LFO 4: Sum of the following
  a. Estimated staff (5 points): _____
  b. Sources of necessary resources (5 points): _____
LFO = the total of (a) through (d) above.
If the total is greater than 30, then LFO = 30: **LFO =** 0

f. Levee failure Critical Facilities planning (**LCF**): *(Up to 30 points)*

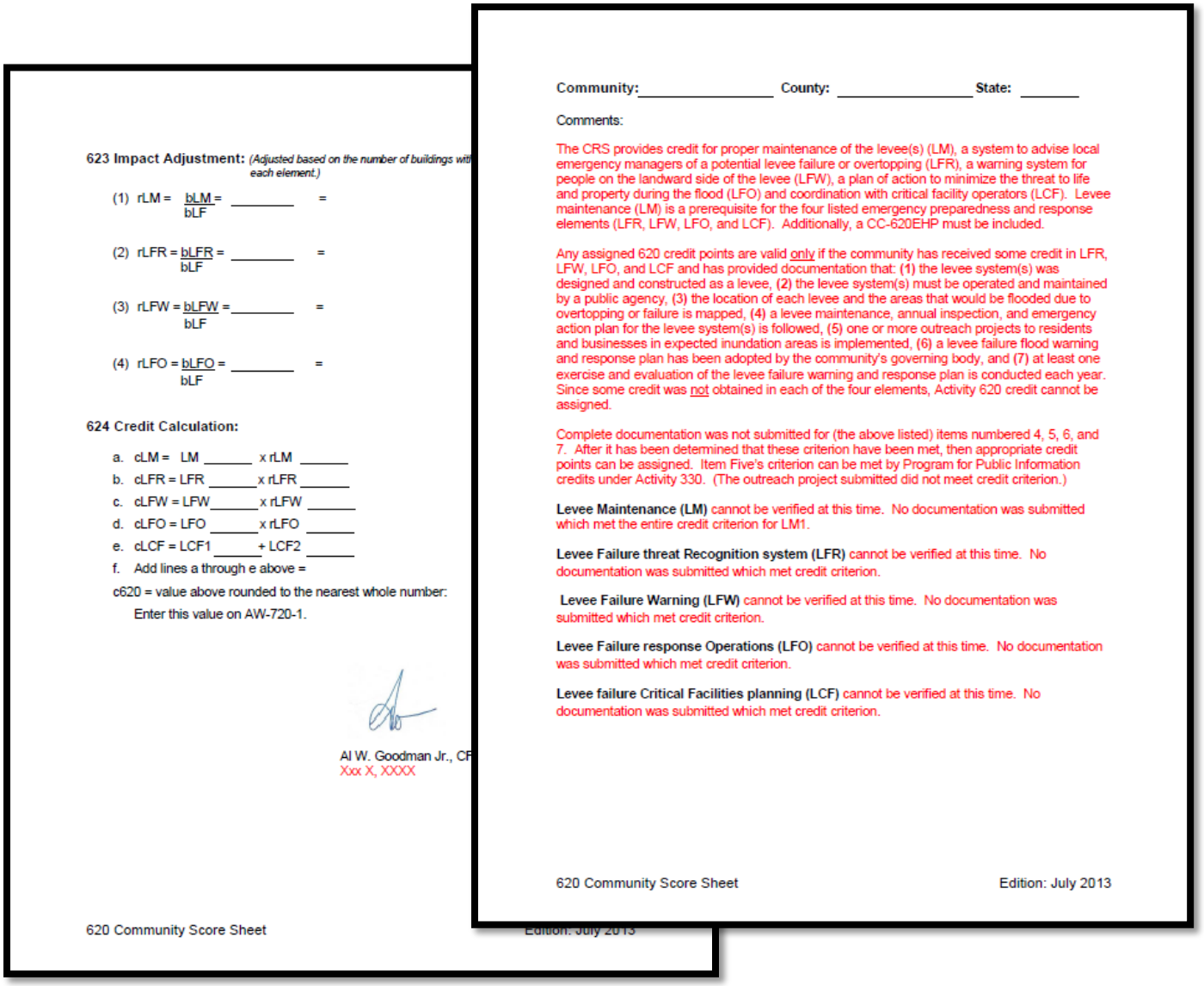
(a) LCF 1: Up to 15 points, if plan includes
  a. List of facilities (5 points): _____
  b. Names and numbers (5 points): _____
  c. Special warnings & notifications (5 points): _____
(b) LCF 2: Individual plans (15 points): _____
LCF = the total of (a) through (b) above: **LCF =** 0

620 Community Score Sheet Edition: July 2013

Activity 620 (Levees)

620 Score Sheet

July 2013



623 Impact Adjustment: *(Adjusted based on the number of buildings with each element.)*

(1) rLM = bLM / bLF = _____ =

(2) rLFR = bLFR / bLF = _____ =

(3) rLFW = bLFW / bLF = _____ =

(4) rLFO = bLFO / bLF = _____ =

624 Credit Calculation:

a. cLM = LM _____ x rLM _____
b. cLFR = LFR _____ x rLFR _____
c. cLFW = LFW _____ x rLFW _____
d. cLFO = LFO _____ x rLFO _____
e. cLCF = LCF1 _____ + LCF2 _____
f. Add lines a through e above =

c620 = value above rounded to the nearest whole number:
Enter this value on AW-720-1.

Al W. Goodman Jr., CF
Xxx X, XXXX

620 Community Score Sheet

Edition: July 2013

Community: _____ County: _____ State: _____

Comments:

The CRS provides credit for proper maintenance of the levee(s) (LM), a system to advise local emergency managers of a potential levee failure or overtopping (LFR), a warning system for people on the landward side of the levee (LFW), a plan of action to minimize the threat to life and property during the flood (LFO) and coordination with critical facility operators (LCF). Levee maintenance (LM) is a prerequisite for the four listed emergency preparedness and response elements (LFR, LFW, LFO, and LCF). Additionally, a CC-620EHP must be included.

Any assigned 620 credit points are valid only if the community has received some credit in LFR, LFW, LFO, and LCF and has provided documentation that: **(1)** the levee system(s) was designed and constructed as a levee, **(2)** the levee system(s) must be operated and maintained by a public agency, **(3)** the location of each levee and the areas that would be flooded due to overtopping or failure is mapped, **(4)** a levee maintenance, annual inspection, and emergency action plan for the levee system(s) is followed, **(5)** one or more outreach projects to residents and businesses in expected inundation areas is implemented, **(6)** a levee failure flood warning and response plan has been adopted by the community's governing body, and **(7)** at least one exercise and evaluation of the levee failure warning and response plan is conducted each year. Since some credit was not obtained in each of the four elements, Activity 620 credit cannot be assigned.

Complete documentation was not submitted for (the above listed) items numbered 4, 5, 6, and 7. After it has been determined that these criterion have been met, then appropriate credit points can be assigned. Item Five's criterion can be met by Program for Public Information credits under Activity 330. (The outreach project submitted did not meet credit criterion.)

Levee Maintenance (LM) cannot be verified at this time. No documentation was submitted which met the entire credit criterion for LM1.

Levee Failure threat Recognition system (LFR) cannot be verified at this time. No documentation was submitted which met credit criterion.

Levee Failure Warning (LFW) cannot be verified at this time. No documentation was submitted which met credit criterion.

Levee Failure response Operations (LFO) cannot be verified at this time. No documentation was submitted which met credit criterion.

Levee failure Critical Facilities planning (LCF) cannot be verified at this time. No documentation was submitted which met credit criterion.

620 Community Score Sheet

Edition: July 2013

NFIP/CRS

DOCUMENTATION REVIEWED FOR CREDIT (X/XX/XXXX):

- Activity 620 Documentation Checklist. (July 2013 edition.)
- CC-620EHP-1 community certification. (Signed 6/19/2013.)
- Memo from CRS Coordinator to ISO: 'Number of structures down
  two dams and two levees is 410.' (Dated 6/18/2013.)
- Sample letter from community to homeowner near a dam or levee
- City, Storm Drainage Facilities Operation and Maintenance Manu
- FIRMettes of panels (3200010092E, 3200010083E, and 3200010
  1/16/2009. Note stamp indicates to 'reflect LOMR from 4/30/2010
- Six page document listing 430 addresses of" inundated areas by f
- Copy of the 'Geotechnical Stability Evaluation: Eagle Valley Creek
  No. 08-09-1740 P. (Dated 8/2009.)
- Seepage Analysis report for Combs Canyon Levees (Project No.
  7/19/2002.)
- FEMA Form 81-89G (Levee/Floodwall System Analyses): City of
  Comb's Canyon Creek.
- DHS-FEMA Form 81-89B (Riverine Structures Form): Combs Car
- City Public Works – Storm Water Maintenance Program: Inspectio
  Combs Spillway and Sedimentation Basin, Eagle Creek Detention
  Creek Detention Middle Basin, Eagle Creek Detention Upper Bas
- City Public Works – Storm Water Maintenance Program: Inspectio
  Eagle Creek Detention Lower and Middle Basin and Eagle Creek
  Basin. (Dated 3/1/2010.)
- City Public Works – Storm Water Maintenance Program: Inspectio
  Eagle Creek Levees (Dated 6/8/2011, 7/11/2011, and 11/29/2012

PREVIOUS DOCUMENTATION ALSO REVIEWED:

- Not Applicable. No previous Activity 620 credit.

620 Community Score Sheet Edition: July 2013

DOCUMENTATION VERIFICATION OR STATUS (for ISO/CRS Specialist Use)

1. Documentation of the outreach materials used to advise people of the levee failure hazard and ways to protect themselves which meets credit criterion.

Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

1. LM

1. Documentation of the annual inspection of all levees.

Yes: ___x_____ No: _____ Date Confirmed: _____7/25/2013_____

2. Documentation of annual inspection of all equipment and material needed for levee emergency action plan.

Yes: _____ No: _____ Date Confirmed: _____

3. Documentation of annual test of all closures, pumps, and other equipment needed to implement levee emergency action plan.

Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

2. LFR/LFW/LFO

1. Copy of levee failure and warning and response plan.

Yes: _____ No: _____ Date Confirmed: _____

620 Community Score Sheet Edition: July 2013

2. Impact adjustment map showing area(s) affected by each element and documentation showing how the numbers of buildings used in the calculations were determined.

Yes: _____ No: _____ Date Confirmed: _____

3. Documentation of annual test of all equipment and material needed for the system.

Yes: _____ No: _____ Date Confirmed: _____

4. Documentation of the exercise, drill, or response to an actual emergency or disaster during the previous year.

Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

3. LCF

1. A list of all facilities considered critical in a levee failure emergency.

Yes: _____ No: _____ Date Confirmed: _____

2. The names and phone numbers of the operators of all public and private critical facilities affected by levee failure.

Yes: _____ No: _____ Date Confirmed: _____

3. Arrangements for issuing special warnings or early notifications directly to those critical facilities that need advance warning.

Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

620 Community Score Sheet Edition: July 2013

A Quick Pause…

Feel like you are missing something vital?

630: Dams

NFIP/CRS

630: Dams

2007 Manual	Max Points		2012 Manual	Max Points
SDS – State Dam Safety program	**75**		**SDS** – State Dam Safety program	
DFP - Dam Failure emergency action Plan			Condition Assessment	**15**
			Emergency Action Planning	**15**
			Risk Communication/Public Awareness	**15**
Dam failure recognition	**25**		**DFR** – Dam Failure threat Recognition system	**30**
Dam failure warning dissemination	**25**		**DFW** – Dam Failure Warning	**35**
Evacuation/critical facilities coordination/notification	**50**		**DFO** – Dam Failure response Operations	**30**
			DCF – Dam failure Critical Facilities planning	**20**
Total DFP	**100**			
Activity Max	**175**			**160**

NFIP/CRS

630: Dams

631.b Activity Credit Criteria

(1) There must be at least one insurable building within the community subject to inundation due to the failure of a high-hazard potential dam.

(2) The community must submit a description of the dam failure threat...

a) A general description of the dam, including the distance upstream from the community;

b) A dam failure inundation map;

c) Dam failure flood hazard data, including arrival times at different locations...

d) The development exposed to dam failure flooding...

e) The expected impacts of dam failure flooding on health and safety...

(3) The community must obtain some credit in DFR, DFW, DFO, and DCF in order to receive any credit for its dam failure warning and response planning.

(4) The community must have an adopted dam failure warning and response plan, in order to receive DFR, DFW, DFO, and DCF credit....

(5) The community must implement one or more outreach projects to the residents and businesses in the area(s) inundated by a dam failure, in order to receive DFR, DFW, DFO, and DCF credit...

(6) There must be at least one exercise and evaluation of the dam failure warning and response plan each year. (Flood, levee failure, dam failure, or hurricane) There must be an evaluation of the performance of the plan and recommended changes, in order to receive DFR, DFW, DFO, and DCF credit...

NFIP/CRS

SDS Credit

ISO/CRS Specialists will now assign SDS credit.

- For the state dam safety credit:
  - 1. The community must show the emergency manager's copy of the map to the ISO/CRS Specialist at the verification visit. The Specialist will note that the map was seen and verified that the community is affected by the failure of a high-hazard potential dam.

SDS Credit

ISO/CRS Specialists will now assign SDS credit.

- For the state dam safety credit:
  - 2. Only if (1.) is not possible, the community may obtain a letter from the state dam safety office that it is affected by the failure of a high-hazard potential dam. The local CRS Coordinator must also provide a map that shows the dam's location in relation to the community.

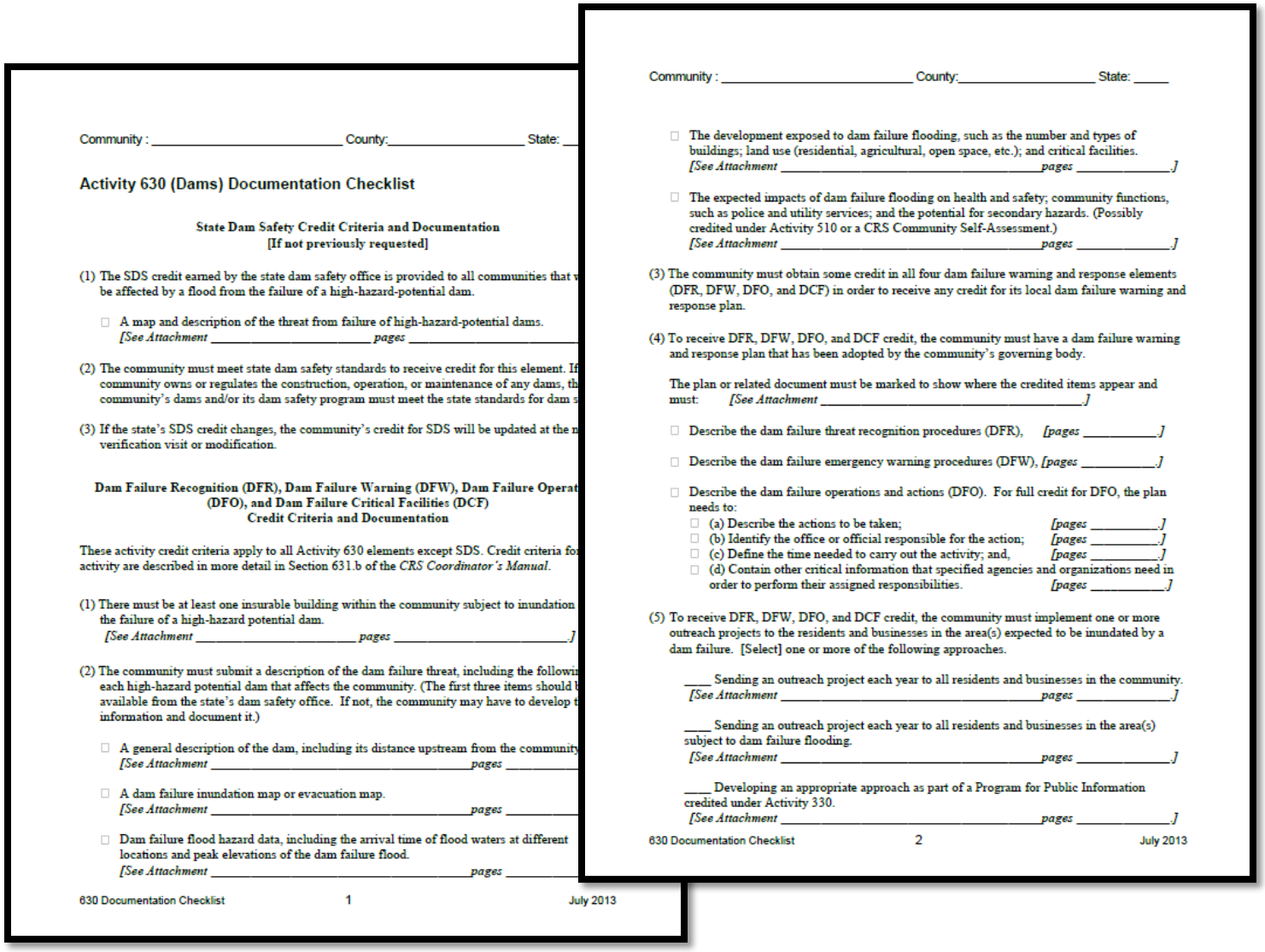
Fairfax, VA, Bay County, FL, Harris County, TX, Sacramento, CA and Las Cruces, NM

1	Community Rating System - Activity 630 (Dams) State Dam Safety (SDS) Program Credit as of July 1, 2013					
2	**State**	**NID State-Regulated High-Hazard-Potential Dams**	**SDS: Condition Assessment (CA)** (15 pts max)	**SDS: Risk Communication/ Public Awareness (RC/PA)** (15 pts max)	**SDS: Emergency Action Planning (EAP)** (15 pts max)	**SDS: Total Credit** (45 pts max)
3	Alabama	--	0	0	0	**0**
4	Alaska	20	7		7	**14**
5	Arizona	106	15	15	15	**45**
6	Arkansas	148	7	15	7	**29**
7	California	689	15	15	0	**30**
8	Colorado	347	15	15	15	**45**
9	Connecticut	221	0	2	7	**9**
10	Delaware	44	15	11	0	**26**
11	Florida	72	0	15	0	**15**
12	Georgia	473	15	15	0	**30**
13	Hawaii	122	15	15	15	**45**
14	Idaho	90	15	2	7	**24**
15	Illinois	223	0	15	15	**30**
16	Indiana	242	15	6	0	**21**
17	Iowa	94	15	13	0	**28**
18	Kansas	225	15	15	15	**45**

State Dam Safety Credit Table

Number of buildings in the community affected by dam failure	bDF =
632.a SDS - State Dam Safety Program	
SDS1 - Condition Assessment (CA)	SDS1 =
SDS2 - Risk Communication/Public awareness (RC/PA)	SDS2 =
SDS3 - Emergency Action Planning (EAP)	SDS3 =
SDS = SDS1 + SDS2 + SDS3	SDS =
632.b DFR - Dam Failure Recognition System	
Dam failure recognition system	DFR =
Number of buildings that benefit from the dam failure threat recognition system	bDFR =
Impact adjustment ratio = rDFR = bDFR ÷ bDF	rDFR =
cDFR = DFR x rDFR	cDFR =
632.c DFW - Dam Failure Warning	
Dam failure warning	DFW =
Number of buildings that benefit from the dam failure flood warning	bDFW =
Impact adjustment ratio = rDFW = bDFW ÷ bDF	rDFW =
cDFW = DFW x rDFW	cDFW =
632.d DFO - Dam Failure Response Operations	
Dam failure response operations	DFO =
Number of buildings in the area covered by the dam failure response operations	bDFO =
Impact adjustment ratio = rDFO = bDFO ÷ bDF	rDFO =
cDFO = DFO x rDFO	cDFO =

Add numbers of buildings to Documentation Checklist.



Community : _____ County:_____ State: ___

Activity 630 (Dams) Documentation Checklist

State Dam Safety Credit Criteria and Documentation
[If not previously requested]

(1) The SDS credit earned by the state dam safety office is provided to all communities that w
be affected by a flood from the failure of a high-hazard-potential dam.

☐ A map and description of the threat from failure of high-hazard-potential dams.
[See Attachment _____ *pages* _____

(2) The community must meet state dam safety standards to receive credit for this element. If
community owns or regulates the construction, operation, or maintenance of any dams, th
community's dams and/or its dam safety program must meet the state standards for dam s

(3) If the state's SDS credit changes, the community's credit for SDS will be updated at the n
verification visit or modification.

**Dam Failure Recognition (DFR), Dam Failure Warning (DFW), Dam Failure Operat
(DFO), and Dam Failure Critical Facilities (DCF)
Credit Criteria and Documentation**

These activity credit criteria apply to all Activity 630 elements except SDS. Credit criteria fo
activity are described in more detail in Section 631.b of the *CRS Coordinator's Manual*.

(1) There must be at least one insurable building within the community subject to inundation
the failure of a high-hazard potential dam.
[See Attachment _____ *pages* _____*.]*

(2) The community must submit a description of the dam failure threat, including the followi
each high-hazard potential dam that affects the community. (The first three items should b
available from the state's dam safety office. If not, the community may have to develop t
information and document it.)

☐ A general description of the dam, including its distance upstream from the community
[See Attachment _____ *pages* _____

☐ A dam failure inundation map or evacuation map.
[See Attachment _____ *pages* _____

☐ Dam failure flood hazard data, including the arrival time of flood waters at different
locations and peak elevations of the dam failure flood.
[See Attachment _____ *pages* _____

Community : _____ County:_____ State: _____

☐ The development exposed to dam failure flooding, such as the number and types of buildings; land use (residential, agricultural, open space, etc.); and critical facilities.
[See Attachment _____ *pages* _____*.]*

☐ The expected impacts of dam failure flooding on health and safety; community functions, such as police and utility services; and the potential for secondary hazards. (Possibly credited under Activity 510 or a CRS Community Self-Assessment.)
[See Attachment _____ *pages* _____*.]*

(3) The community must obtain some credit in all four dam failure warning and response elements (DFR, DFW, DFO, and DCF) in order to receive any credit for its local dam failure warning and response plan.

(4) To receive DFR, DFW, DFO, and DCF credit, the community must have a dam failure warning and response plan that has been adopted by the community's governing body.

The plan or related document must be marked to show where the credited items appear and must: *[See Attachment* _____*.]*

☐ Describe the dam failure threat recognition procedures (DFR), *[pages* _____*.]*

☐ Describe the dam failure emergency warning procedures (DFW), *[pages* _____*.]*

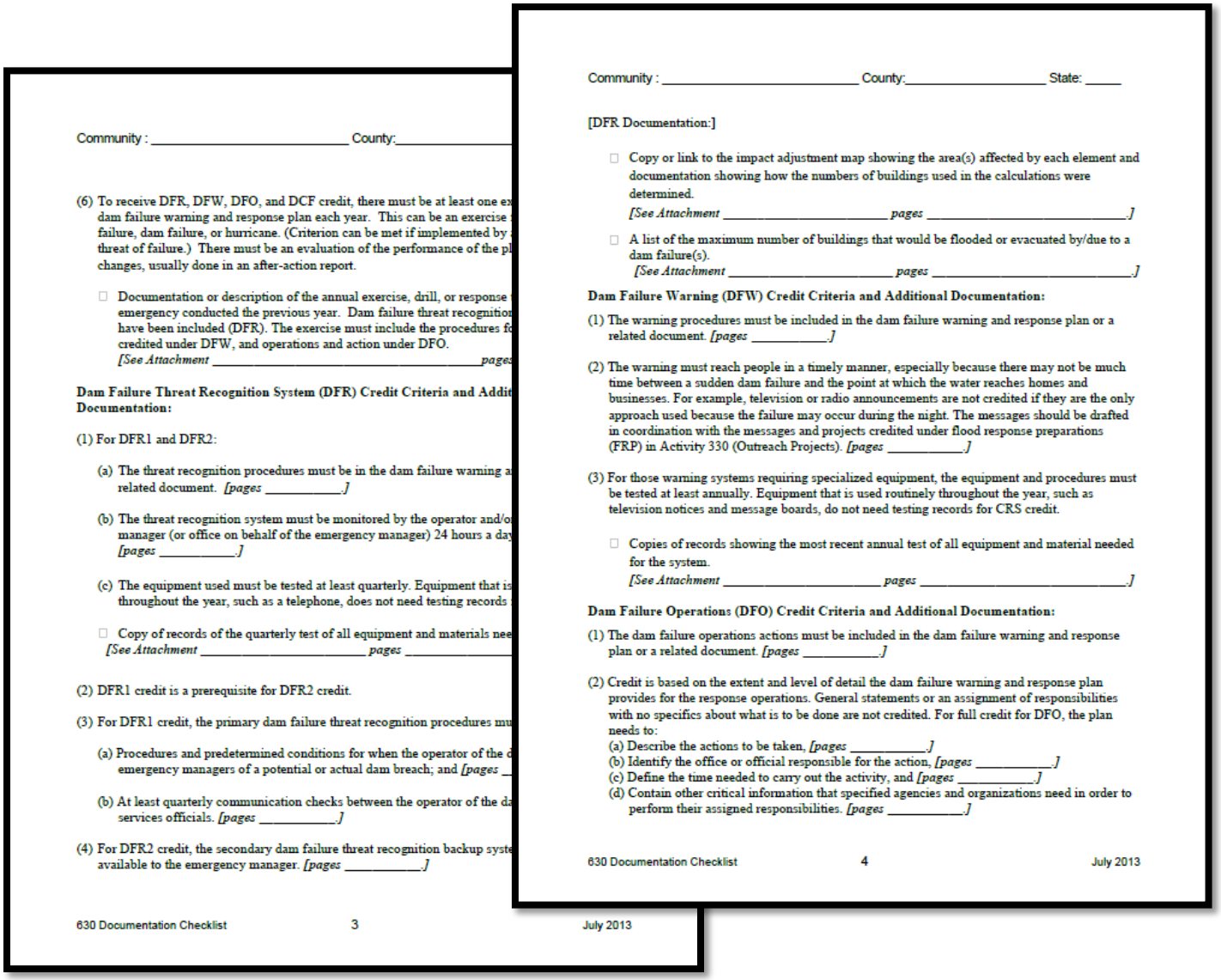
☐ Describe the dam failure operations and actions (DFO). For full credit for DFO, the plan needs to:
- ☐ (a) Describe the actions to be taken; *[pages* _____*.]*
- ☐ (b) Identify the office or official responsible for the action; *[pages* _____*.]*
- ☐ (c) Define the time needed to carry out the activity; and, *[pages* _____*.]*
- ☐ (d) Contain other critical information that specified agencies and organizations need in order to perform their assigned responsibilities. *[pages* _____*.]*

(5) To receive DFR, DFW, DFO, and DCF credit, the community must implement one or more outreach projects to the residents and businesses in the area(s) expected to be inundated by a dam failure. [Select] one or more of the following approaches.

____ Sending an outreach project each year to all residents and businesses in the community.
[See Attachment _____ *pages* _____*.]*

____ Sending an outreach project each year to all residents and businesses in the area(s) subject to dam failure flooding.
[See Attachment _____ *pages* _____*.]*

____ Developing an appropriate approach as part of a Program for Public Information credited under Activity 330.
[See Attachment _____ *pages* _____*.]*



Community : _____ County:_____

(6) To receive DFR, DFW, DFO, and DCF credit, there must be at least one ex
dam failure warning and response plan each year. This can be an exercise
failure, dam failure, or hurricane. (Criterion can be met if implemented by
threat of failure.) There must be an evaluation of the performance of the pl
changes, usually done in an after-action report.

☐ Documentation or description of the annual exercise, drill, or response
emergency conducted the previous year. Dam failure threat recognitio
have been included (DFR). The exercise must include the procedures f
credited under DFW, and operations and action under DFO.
[See Attachment _____ pages

**Dam Failure Threat Recognition System (DFR) Credit Criteria and Addit
Documentation:**

(1) For DFR1 and DFR2:

(a) The threat recognition procedures must be in the dam failure warning a
related document. *[pages _____.]*

(b) The threat recognition system must be monitored by the operator and/o
manager (or office on behalf of the emergency manager) 24 hours a da
[pages _____.]

(c) The equipment used must be tested at least quarterly. Equipment that is
throughout the year, such as a telephone, does not need testing records

☐ Copy of records of the quarterly test of all equipment and materials nee
[See Attachment _____ pages _____

(2) DFR1 credit is a prerequisite for DFR2 credit.

(3) For DFR1 credit, the primary dam failure threat recognition procedures mu

(a) Procedures and predetermined conditions for when the operator of the d
emergency managers of a potential or actual dam breach; and *[pages _*

(b) At least quarterly communication checks between the operator of the da
services officials. *[pages _____.]*

(4) For DFR2 credit, the secondary dam failure threat recognition backup syste
available to the emergency manager. *[pages _____.]*

630 Documentation Checklist 3 July 2013

Community : _____ County:_____ State: _____

[DFR Documentation:]

☐ Copy or link to the impact adjustment map showing the area(s) affected by each element and documentation showing how the numbers of buildings used in the calculations were determined.
[See Attachment _____ pages _____.]

☐ A list of the maximum number of buildings that would be flooded or evacuated by/due to a dam failure(s).
[See Attachment _____ pages _____.]

Dam Failure Warning (DFW) Credit Criteria and Additional Documentation:

(1) The warning procedures must be included in the dam failure warning and response plan or a related document. *[pages _____.]*

(2) The warning must reach people in a timely manner, especially because there may not be much time between a sudden dam failure and the point at which the water reaches homes and businesses. For example, television or radio announcements are not credited if they are the only approach used because the failure may occur during the night. The messages should be drafted in coordination with the messages and projects credited under flood response preparations (FRP) in Activity 330 (Outreach Projects). *[pages _____.]*

(3) For those warning systems requiring specialized equipment, the equipment and procedures must be tested at least annually. Equipment that is used routinely throughout the year, such as television notices and message boards, do not need testing records for CRS credit.

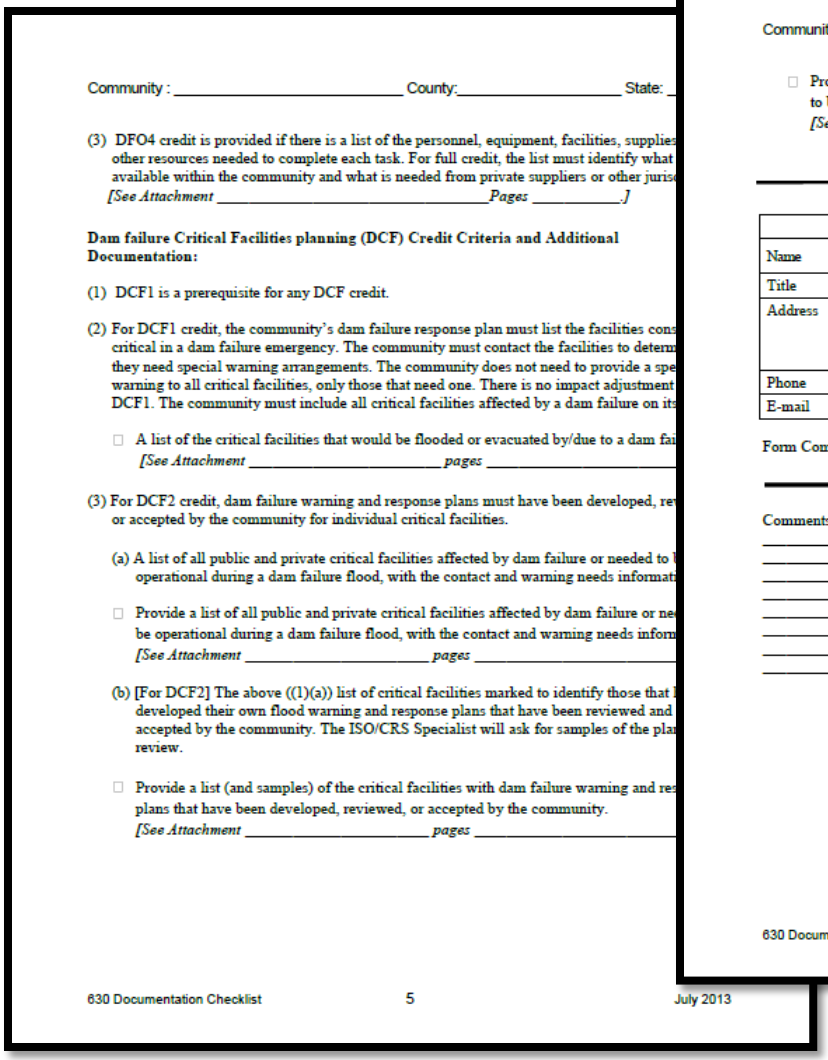
☐ Copies of records showing the most recent annual test of all equipment and material needed for the system.
[See Attachment _____ pages _____.]

Dam Failure Operations (DFO) Credit Criteria and Additional Documentation:

(1) The dam failure operations actions must be included in the dam failure warning and response plan or a related document. *[pages _____.]*

(2) Credit is based on the extent and level of detail the dam failure warning and response plan provides for the response operations. General statements or an assignment of responsibilities with no specifics about what is to be done are not credited. For full credit for DFO, the plan needs to:
(a) Describe the actions to be taken, *[pages _____.]*
(b) Identify the office or official responsible for the action, *[pages _____.]*
(c) Define the time needed to carry out the activity, and *[pages _____.]*
(d) Contain other critical information that specified agencies and organizations need in order to perform their assigned responsibilities. *[pages _____.]*

630 Documentation Checklist 4 July 2013



Community : _____ County:_____ State: _

(3) DFO4 credit is provided if there is a list of the personnel, equipment, facilities, supplies other resources needed to complete each task. For full credit, the list must identify what available within the community and what is needed from private suppliers or other juris
[See Attachment _____Pages _____.]

Dam failure Critical Facilities planning (DCF) Credit Criteria and Additional Documentation:

(1) DCF1 is a prerequisite for any DCF credit.

(2) For DCF1 credit, the community's dam failure response plan must list the facilities cons critical in a dam failure emergency. The community must contact the facilities to determ they need special warning arrangements. The community does not need to provide a spe warning to all critical facilities, only those that need one. There is no impact adjustment DCF1. The community must include all critical facilities affected by a dam failure on its

☐ A list of the critical facilities that would be flooded or evacuated by/due to a dam fai
[See Attachment _____ pages _____]

(3) For DCF2 credit, dam failure warning and response plans must have been developed, re or accepted by the community for individual critical facilities.

(a) A list of all public and private critical facilities affected by dam failure or needed to operational during a dam failure flood, with the contact and warning needs informati

☐ Provide a list of all public and private critical facilities affected by dam failure or ne be operational during a dam failure flood, with the contact and warning needs inform
[See Attachment _____ pages _____]

(b) [For DCF2] The above ((1)(a)) list of critical facilities marked to identify those that developed their own flood warning and response plans that have been reviewed and accepted by the community. The ISO/CRS Specialist will ask for samples of the pla review.

☐ Provide a list (and samples) of the critical facilities with dam failure warning and re plans that have been developed, reviewed, or accepted by the community.
[See Attachment _____ pages _____]

Community : _____ County:_____ State: _____

☐ Provide a page from the latest list of the critical facilities affected by dam failure or needed to be operational during a dam failure flood. This list must be updated at least annually.
[See Attachment _____ pages _____.]

	CRS Coordinator	Emergency Manager
Name		
Title		
Address		
Phone		
E-mail		

Form Completed by: _____ Date _____

Comments:

_____
_____
_____
_____
_____
_____
_____
_____

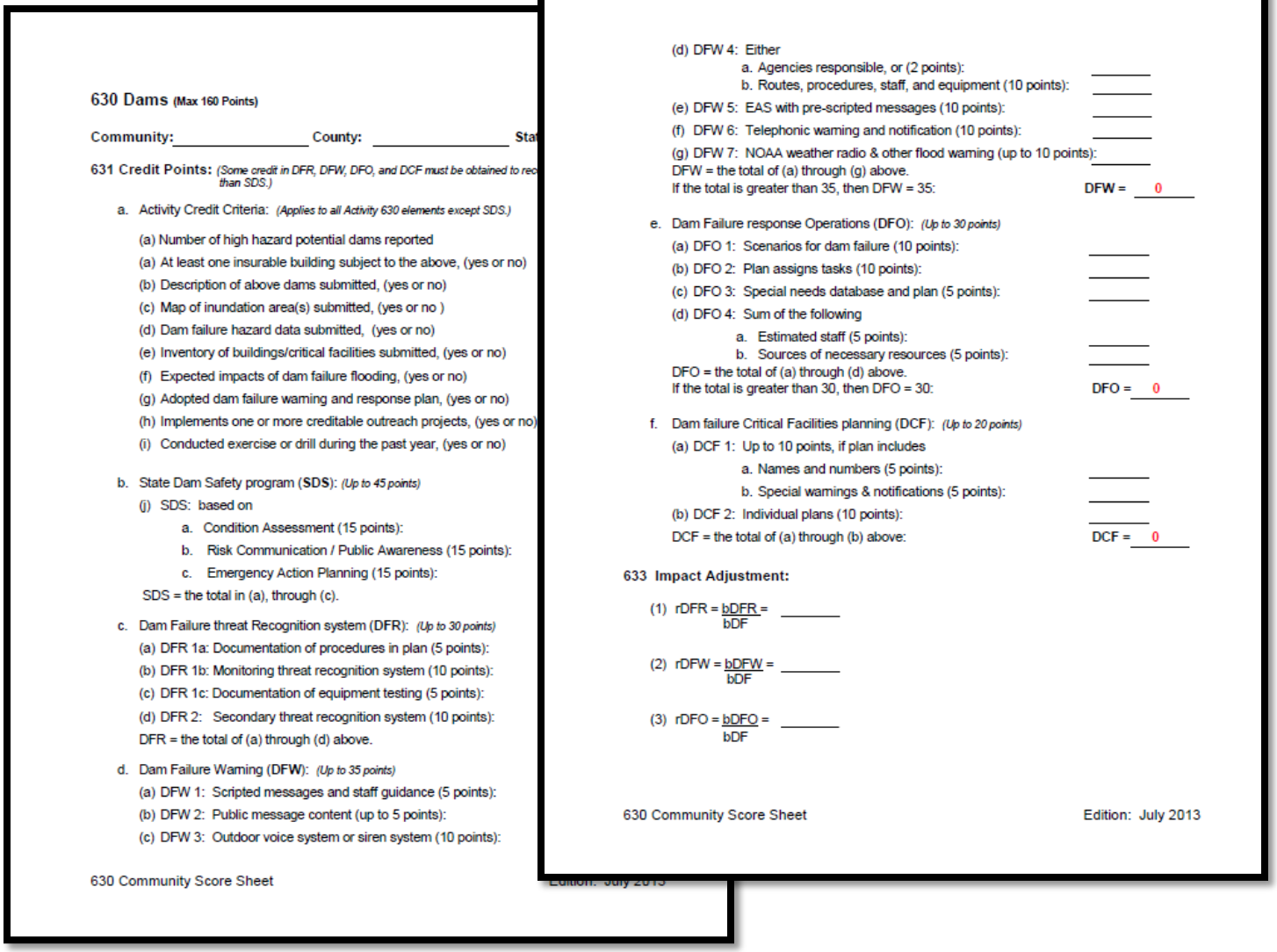
A Quick Pause…

Feel like you are missing something vital?

Activity 630 (Dams)

630 Score Sheet

July 2013



630 Dams (Max 160 Points)

Community: _____ County: _____ Sta

631 Credit Points: *(Some credit in DFR, DFW, DFO, and DCF must be obtained to rec than SDS.)*

a. Activity Credit Criteria: *(Applies to all Activity 630 elements except SDS.)*

(a) Number of high hazard potential dams reported
(a) At least one insurable building subject to the above, (yes or no)
(b) Description of above dams submitted, (yes or no)
(c) Map of inundation area(s) submitted, (yes or no)
(d) Dam failure hazard data submitted, (yes or no)
(e) Inventory of buildings/critical facilities submitted, (yes or no)
(f) Expected impacts of dam failure flooding, (yes or no)
(g) Adopted dam failure warning and response plan, (yes or no)
(h) Implements one or more creditable outreach projects, (yes or no)
(i) Conducted exercise or drill during the past year, (yes or no)

b. State Dam Safety program (**SDS**): *(Up to 45 points)*
(j) SDS: based on
a. Condition Assessment (15 points):
b. Risk Communication / Public Awareness (15 points):
c. Emergency Action Planning (15 points):
SDS = the total in (a), through (c).

c. Dam Failure threat Recognition system (**DFR**): *(Up to 30 points)*
(a) DFR 1a: Documentation of procedures in plan (5 points):
(b) DFR 1b: Monitoring threat recognition system (10 points):
(c) DFR 1c: Documentation of equipment testing (5 points):
(d) DFR 2: Secondary threat recognition system (10 points):
DFR = the total of (a) through (d) above.

d. Dam Failure Warning (**DFW**): *(Up to 35 points)*
(a) DFW 1: Scripted messages and staff guidance (5 points):
(b) DFW 2: Public message content (up to 5 points):
(c) DFW 3: Outdoor voice system or siren system (10 points):

630 Community Score Sheet

(d) DFW 4: Either
a. Agencies responsible, or (2 points): _____
b. Routes, procedures, staff, and equipment (10 points): _____
(e) DFW 5: EAS with pre-scripted messages (10 points): _____
(f) DFW 6: Telephonic warning and notification (10 points): _____
(g) DFW 7: NOAA weather radio & other flood warning (up to 10 points): _____
DFW = the total of (a) through (g) above.
If the total is greater than 35, then DFW = 35: DFW = 0

e. Dam Failure response Operations (**DFO**): *(Up to 30 points)*
(a) DFO 1: Scenarios for dam failure (10 points): _____
(b) DFO 2: Plan assigns tasks (10 points): _____
(c) DFO 3: Special needs database and plan (5 points): _____
(d) DFO 4: Sum of the following
a. Estimated staff (5 points): _____
b. Sources of necessary resources (5 points): _____
DFO = the total of (a) through (d) above.
If the total is greater than 30, then DFO = 30: DFO = 0

f. Dam failure Critical Facilities planning (**DCF**): *(Up to 20 points)*
(a) DCF 1: Up to 10 points, if plan includes
a. Names and numbers (5 points): _____
b. Special warnings & notifications (5 points): _____
(b) DCF 2: Individual plans (10 points): _____
DCF = the total of (a) through (b) above: DCF = 0

633 **Impact Adjustment:**

(1) $rDFR = \frac{bDFR}{bDF} =$ _____

(2) $rDFW = \frac{bDFW}{bDF} =$ _____

(3) $rDFO = \frac{bDFO}{bDF} =$ _____

630 Community Score Sheet Edition: July 2013

Activity 630 (Dams)

630 Score Sheet

July 2013

Community:_____ **County:** _____ S

634 Credit Calculation:

a. cSDS = SDSa ____ + SDSb ____ + SDSc____
b. cDFR = DFR ____ x rDFR ____
c. cDFW = DFW ____ x rDFW ____
d. cDFO = DFO ____ x rDFO ____
e. cDCF = DCF 1 ____ + DCF2 ____
f. Add lines a through e above =

c630 = value above rounded to the nearest whole number:
Enter this value on AW-720-1.

Al W. Goodman Jr., CFM
Xxx xx, xxxx

630 Community Score Sheet

Comments:

Activity 630 Program credit is verified at 37* points. Floodville (encompasses approximately 168 sq. miles) reported ___ dams, which are considered to be high hazard potential dams (Shenandoah Detention Basin, Eagle Valley Golf Course Dam). There are ____ buildings that benefit from the dam failure threat recognition system, _____buildings that benefit from the dam failure flood warnings, _____ buildings in the area covered by the dam failure operations actions, and _____ buildings expected to be inundated by a failure of all the high-hazard potential dams that affect the community.

Any assigned 630 credit points (other than SDS points) are valid only if the community has received some credit in DFR, DFW, DFO, and DCF and has provided documentation that: **(1)** there is at least one insurable building subject to inundation, **(2)** a general description of the dam, **(3)** a dam failure inundation map, **(4)** dam failure flood hazard data, **(5)** development exposed to dam failure flooding, **(6)** the expected impacts of dam failure flooding are submitted, **(7)** a dam failure warning and response plan has been adopted, **(8)** one or more annual creditable outreach projects are implemented, and **(9)** at least one exercise or drill of the dam failure and response plan is conducted each year.* Since some credit was not obtained in each of the four dam failure warning and response elements, Activity 630 credit cannot be assigned.

Documentation was not submitted for (the above listed) items numbered 4, 5, 6, 7, 8, and 9. After it has been determined that these criterion have been met, then appropriate credit points can be assigned. *The fourth item can be covered by PPI credits under Activity 330. Item six's criterion can be met by a FPM or hazard mitigation plan under Activity 510, or through a completed CRS Community Self-Assessment described in Section 240 of the CRS Coordinator's Manual.*

Dam Failure threat Recognition system (DFR) cannot be verified at this time. No documentation was submitted which met credit criterion.

Dam Failure Warning (DFW) cannot be verified at this time. No documentation was submitted which met credit criterion.

Dam Failure response Operations (DFO) cannot be verified at this time. No documentation was submitted which met credit criterion.

Dam failure Critical Facilities planning (DCF) cannot be verified at this time. No documentation was submitted which met credit criterion.

630 Community Score Sheet Edition: July 2013

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DOCUMENTATION REVIEWED FOR CREDIT (X/XX/XXXX):

- Activity 630 Documentation Checklist. (May 2013 edition.)
- Floodville Public Works – Storm Water Maintenance Program Inspection Chec the Shenandoah Detention Basin. (Dated 11/29/2012.)
- Floodville Public Works – Storm Water Maintenance Program Inspection Chec the' Sutro.' (Dated 11/29/2012.)
- Floodville Public Works – Storm Water Maintenance Program Inspection Chec the EVGC Dam and Channels. (Dated 6/18/2012.)
- Floodville Public Works – Storm Water Maintenance Program Inspection Chec the EV Golf Course. (Dated 11/29/2012.)
- Copy of outreach letter from city to property owner located in proximity to levee facility and list of 430 addresses.
- Emergency Action Plan for Eagle Valley Golf Course Dam. (Dated 1/2009.)
- Emergency Action Plan: Shenandoah Detention Basin. (Dated 10/2006.)

PREVIOUS DOCUMENTATION ALSO REVIEWED:

- Not Applicable. No previous Activity 630 credit (other than SDS).

630 Community Score Sheet Edition

DOCUMENTATION VERIFICATION OR STATUS (for ISO/CRS Specialist Use)

1. Documentation of the outreach materials used to advise people of the risk of flooding, how they will be warned of a dam failure flood and the safety measures they should take during a flood which meets credit criterion.

   Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

2. DFR 1

1. Documentation of the threat recognition procedures are in an adopted dam failure warning and response plan or related document.

   Yes: _____ No: _____ Date Confirmed: _____

2 Documentation that the threat recognition system is monitored 24/7.

   Yes: _____ No: _____ Date Confirmed: _____

3 Documentation that threat recognition system equipment used is tested quarterly.

   Yes: _____ No: _____ Date Confirmed: _____

DFR 2

1 Documentation that the secondary dam failure threat recognition backup systems are directly available to the emergency manager.

   Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

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3. DFW/DFO

1. The annotated portion(s) of the dam failure and response plan that describe the emergency warning procedures.

   Yes: _____ No: _____ Date Confirmed: _____

2 Documentation or records of the annual testing of all equipment and material needed.

   Yes: _____ No: _____ Date Confirmed: _____

3 Documentation of or a description of the drill, exercise, or response to an actual emergency or disaster conducted during the past year which meets 630 credit criterion.

   Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

4. DCF

1. A list of all public and private critical facilities affected by dam failure or needed to be operational during a dam failure flood, with contact information and agreed upon warning needs.

   Yes: _____ No: _____ Date Confirmed: _____

   For DCF 2: a list of critical facilities marked to identify those that have developed their own flood warning and response plans that have been reviewed and accepted by the community.

   Yes: _____ No: _____ Date Confirmed: _____

   For DCF 1: a page from the latest list of critical facilities that must be updated annually.

   Yes: _____ No: _____ Date Confirmed: _____

Documentation Used in Verification:

_____

630 Community Score Sheet Edition: July 2013

A Quick Pause…

Feel like you are missing something vital?

Class 4 & Class 1 Prerequisites

Class 4:

- Obtain some credit under Activity 610;
- Have a map of all levees and all areas protected by levees, and an inventory of the buildings and critical facilities that would be flooded if the levees were overtopped, and;
- Have a description of the dam failure threat, including a map of all areas that would be flooded by the failure of each high-hazard potential dam that affects the community, and an inventory of the buildings and critical facilities that would be flooded.

Class 4 & Class 1 Prerequisites

Class 1:

- **Have a program to address the threat to life safety that flooding poses to the residents of the community.**
  - **The community must obtain some credit under all the elements in Activity 620 for all levees mapped and identified in the inventory prepared for the Class 4 prerequisite, and;**
  - **The community must obtain some credit under all the local elements in Activity 630 for all areas mapped and identified as subject to dam failure flooding in the inventory prepared for the Class 4 prerequisite.**

620: Levees

(1) $rLM = \frac{bLM}{bLF}$

(2) $rLFR = \frac{bLFR}{bLF}$

(3) $rLFW = \frac{bLFW}{bLF}$

(4) $rLFO = \frac{bLFO}{bLF}$, where

bLM = the number of buildings in the area affected by a flood resulting from a failure of the levee being maintained.

bLFR = the number of buildings that benefit from the levee failure threat recognition system,

bLFW = the number of buildings that benefit from the levee failure flood warnings,

bLFO = the number of buildings in the area covered by the levee failure response operations actions, and

bLF = the total number of buildings in the community affected by levee failure

(5) bLFO cannot be greater than bLFW. bLFW cannot be greater than bLFR. bLFR cannot be greater than bLM. rLM cannot be greater than 1.0.

(6) There is no impact adjustment for LCF 1. The community must include all critical facilities affected by a levee failure on its list

$$c620 = (LM \times rLM) + (LFR \times rLFR) + (LFW \times rLFW) + (LFO \times rLFO) + LCF\ 1 + LCF\ 2$$

Now, let's see an example….

620: Levees

Example:
The community has a FEMA accredited levee which "protects" 47 buildings. **bLF = 47 or 47 = 1.0**
47

- The levee maintenance program qualifies for LM credit. **LM = 45, bLM = 47**
- There is a levee failure threat recognition system which monitors river flood conditions and the condition of the levee itself. **LFR = 25, bLFR = 47**
- A levee failure warning program uses scripted messages, an outdoor voice system and siren system, the EAS is used with pre-scripted messages, along with a telephonic warning and notification system. **LFW = 35, bLFW = 47**
- The levee failure response contains scenarios for levee failure and describes the tasks to be taken with the identification of the required staff. **LFO = 25, bLFO = 47**
- There are six critical facilities in the overtopping area; the plan lists the names and phone numbers of only three of the critical facilities. One facility requires special warning and notification. **LCF = 8.5 (partial credit)**

LM = 45	rLM = 1.0
LFR = 25	rLFR = 1.0
LFW = 35	rLFW = 1.0
LFO = 25	rLFO = 1.0
LCF1 = 8.5	LCF2 = 0

C620 = (45 x 1.0) + (25 x 1.0) + (35 x 1.0) + (25 x1.0) + 8.5 = 138.5 = 139 (rounded)

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630: Dams

633 Impact Adjustment

There is no impact adjustment for the state dam safety program (SDS). All communities that benefit from the program receive the same credit. There is no impact adjustment for DCF.

(1) $rDFR = \frac{bDFR}{bDF}$

(2) $rDFW = \frac{bDFW}{bDF}$

(3) $rDFO = \frac{bDFO}{bDF}$, where

bDFR = the number of buildings that benefit from the dam failure threat recognition system,

bDFW = the number of buildings that benefit from the dam failure flood warnings,

bDFO = the number of buildings in the area covered by the dam failure operations actions, and

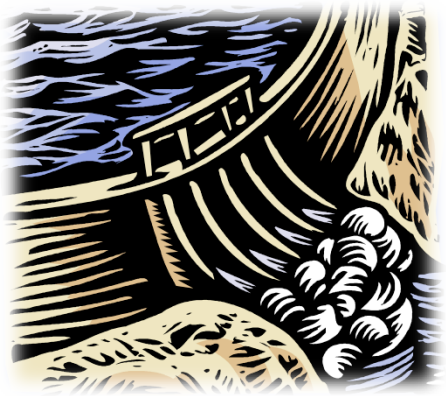
bDF = the number of buildings in the community expected to be inundated by a failure of all the high-hazard potential dams that affect the community

(4) bDFO cannot be greater than bDFW. bDFW cannot be greater than bDFR. rDFR cannot be greater than 1.0

$$c630 = SDS + (DFR \times rDFR) + (DFW \times rDFW) + (DFO \times rDFO) + DCF\ 1 + DCF\ 2$$

Now, let's see an example….

630: Dams



Example:
The community has two high-hazard potential dams, which threaten 250 buildings. Dam 'A' threatens 100 buildings and Dam 'B' threatens 200. Of those 300 structures, 50 buildings are subject to flooding from both 'A' and 'B.' **bDF = 250**

- The community has only been able to develop a creditable dam failure warning and response program in conjunction with the operator of Dam 'B.' There is no credit for the area affected by a failure of Dam 'A.' The number of buildings that benefit from the dam failure warning and response program is 200. **bDFR = bDFW = bDFO = 200**
- **rDFR = bDFR = 200 = 0.8.** The ratios for DFW and DFO are the same. **bDF = 250.**
  bDF 250
- The State Dam Safety program has provided assessments of the condition of the two dams, descriptions and a map of the inundation areas. Only Dam 'B' has an EAP. Inventories of all at risk buildings, from both dams, have been conducted by the community.
- The community's dam failure threat recognition procedures include documentation of procedures, the monitoring of the system and documentation of equipment testing. **DFR = 20**.
- Dam failure public warning consists of a plan that includes scripted messages, public message content, an outdoor voice system and a network of sirens, a list of community departments and state agencies responsible for portions of the plan, the use of the EAS with pre-scripted messages, a telephonic public alerting system, and the use of NOAA weather radios. **DFW = 35**.
- The community has planned for four scenarios concerning possible dam failure and assigned tasks to various staff and departments. The necessary resources have been identified. **DFO = 20**.
- There are a total of 20 critical facilities identified with the contact numbers and names of the dam operators listed. **DCF1 = 5.**

SDS = 45
DFR = 20 rDFR = 0.8
DFW = 35 rDFW = 0.8
DFO = 20 rDFO = 0.8
DCF1 = 5 DCF2 = 0

C630 = 45 + (20 x 0.8) + (35 x 0.8) + (20 x 0.8) + 5 = 110

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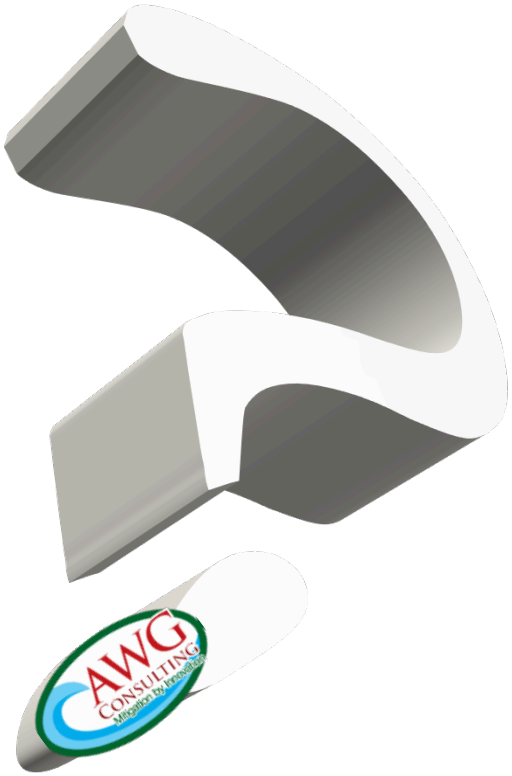
What we quickly discussed…

1. EMA linkages, why they are so important.
2. Activity Credit Criterion: 620 Levees
    1. 620 Documentation Checklist
    2. 620 Community Score Sheet
3. Activity Credit Criterion: 630 Dams
    1. 630 Documentation Checklist
    2. 630 Community Score Sheet
4. Class 4 and Class 1 Prerequisites
5. Impact Adjustments
6. Scenarios (If we had the time.)

620 & 630 Series of Actitivites

Other Questions



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