SULTAN CITY COUNCIL

AGENDA ITEM COVER SHEET

ITEM NUMBER:	**Workshop**
DATE:	April 12, 2007
SUBJECT:	Staff Report National Flood Insurance Program's (NFIP) Community Rating System (CRS)
FROM:	Craig Bruner, Building Official
SUMMARY:	The CRS program provides discounts on flood insurance that range from 5% up to 45%. Those discounts provide an incentive for new flood protection activities that can help save lives and property in the event of a flood while leading us towards a sustainable economy. The CRS assigns credit points for each of the 18-floodplain management activities described in the CRS coordinators manual. Currently we are doing 12 of the activities and are receiving 1009 points for a CRS classification of 8 giving all of the citizens in the floodplain a 10% flood insurance discount.
FISCAL IMPACTS:	The cost will depend on our level of work in the program. It cost $2,000 plus to sustain our current outreach projects and if we undertake acquisition and relocation of flood prone properties or do new flood studies the cost will go up proportionately.
RECOMMENDED	Staff Recommends that the City pursue cost effective opportunities to improve our CRS classification.
Attachments:	A. Staff Report B. CRS Coordinator's Manual sections

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COUNCIL ACTION:

ACTION DATE:

Staff Report

City of Sultan
Community Rating System
2007

The Federal Emergency Management Agency is mandated by congress to implement the National Flood Insurance Program (NFIP). The NFIP provides federally backed flood insurance that encourages communities to enact and enforce floodplain regulations. Under the Community Rating System (CRS) program, there is an incentive for communities to do more than just regulate construction of new buildings to minimum national standards. Through the CRS program, flood insurance premiums are adjusted to reflect community activities the reduce flood damage to existing buildings, manage development in areas not mapped by the NFIP, protect new buildings beyond the minimum NFIP protection level, assist insurance agents obtain flood data, and help people obtain flood insurance.

The City participates in the CRS program; currently our CRS rating is 8, this allows a 10% premium reduction while creating a safer environment for all of our citizens. Premium reductions take affect one-year after CRS points are awarded.

The CRS program is segmented into 4 main categories of activities a community may implement; each main category has a varying number of subcategories a community may implement in order to achieve the maximum CRS points. For every 500 points accumulated the community is awarded an additional 5% premium reduction.

The CRS activities are as follows:

300 PUBLIC INFORMATION ACTIVITIES

- 300 Public Information
  - 301 Definition of Building
  - 302 Impact Adjustments for Buildings
  - 303 Counting Buildings

- 310 Elevation Certificates: See Summary of Activity 310
  - 311 Credit Points; maximum of 162 points.
  - 312 Impact Adjustment
  - 313 Credit Calculation
  - 314 Credit Documentation
  - 315 For more detailed information

The City can significantly increase our points for 310 by utilizing the ISO software to make corrections to the Elevation Certificates. We need to enter every single Elevation Certificate into the software program correcting those fields that are in error, noting the

correction in the comment section of the Certificate and attaching the original EC to the corrected EC.

320 Map Information: See Summary of Activity 320
- 321 Credit Points; maximum 140 points
- 322 Credit Calculation
- 323 Credit Documentation
- 324 For more detailed information

We may improve our point standing by creating an address list of Realtors, Insurance agents and Lenders that serve the City of Sultan, and annually send them an announcement stating the City will provide floodplain map information upon request. This announcement must include our phone number, address, a person to contact, and a list of services; map information, elevation certificates, letters of map amendment, the City will provide. We can do this through E-Mail.

330 Outreach Projects: See Summary of Activity 330
- 331 Credit Points; maximum 315 points
- 332 Credit Calculation
- 333 Credit Documentation
- 334 For more detailed information

We will improve our point standing by virtue of the annual flyer sent out for all the Natural Hazard Mitigation Plan coalition partners.

340 Hazard Disclosure: See Summary of Activity 340
- 341 Credit Points; maximum 81 points
- 342 Credit Calculation
- 343 Credit Documentation
- 344 For more detailed information

We will improve our point standing by providing the ISO with a copy of the Critical Areas Ordinance that requires final plat disclosure of identified critical areas.

350 Flood Protection Information: See Summary of Activity 350
- 351 Credit Points; maximum 66 points
- 352 Credit Calculation
- 353 Credit Documentation
- 354 For more detailed information

We need to make sure all the creditable items for this activity are in place and cataloged in the library. Including; Flood protection Library, Locally Pertinent Documents, Flood Protection Website.

360 Flood Protection Assistance: See Summary of Activity 360
- 361 Credit Points; maximum 71 points
- 362 Credit Calculation

363 Credit Documentation
364 For more detailed information

We need to make sure our outreach/flyer to the floodplain residents includes notice that the City can and will provide site specific flood protection assistance upon request, flyer must include telephone number, address, point of contact, and E-Mail address.

400 MAPPING AND REGULATIONS

400 Mapping and Regulatory Activities
- 401 Special Hazard Areas
- 402 Impact Adjustment Ratios for Areas
- 403 Impact Adjustment Map
- 404 Area Calculations

410 Additional Flood Data: See Summary of Activity 410
- 411 Credit Points; maximum 1,373 points
- 412 Impact Adjustment
- 413 Credit Calculation
- 414 Credit Documentation
- 415 For more detailed Information

420 Open Space Preservation: See Summary of Activity 420
- 421 Credit Points; maximum 900 points
- 422 Impact Adjustment
- 423 Credit Calculation
- 424 Credit Documentation
- 425 For more detailed Information

430 Higher Regulatory Standards: See Summary of Activity 430
- 431 Credit Points; maximum 2,720 points
- 432 Impact Adjustment
- 433 Credit Calculation
- 434 Credit Documentation
- 435 For more detailed Information

430LD Land Development Criteria: See Summary of Activity 430LD
- 431LD Credit Points; maximum 700 points
- 432LD Impact Adjustment
- 433LD Credit Calculation
- 434LD Credit Documentation
- 435LD for more detailed Information

440 Flood Data Maintenance: See Summary of Activity 440
- 441 Credit Points; maximum 231 points
- 442 Impact Adjustment

443 Credit Calculation
444 Credit Documentation
445 For more detailed Information

450 Stormwater Management: See Summary of Activity 440
451 Credit Points; maximum 670 points
452 Impact Adjustment
453 Credit Calculation
454 Credit Documentation
455 For more detailed Information

The City needs to provide a copy of the ordinance adopting the DOE Storm Water Management manual for Western Washington.

500 FLOOD DAMAGE REDUCTION ACTIVITIES

500 Flood Damage Reduction Activities
501 The Repetitive Loss List
502 Repetitive Loss Category
503 Repetitive Loss Area Outreach Project
504 National Flood Insurance Reform Act of 1994

510 Flood Plain Management Planning: See Summary of Activity 510
511 Credit Points; maximum 309 points
512 Impact Adjustment
513 Credit Calculation
514 Credit Documentation
515 For more detailed Information

520 Acquisitions and Relocation: See Summary of Activity 520
521 Credit Points; maximum 3,200 points
522 Impact Adjustment
523 Credit Calculation
524 Credit Documentation
525 For more detailed Information

530 Flood Protections: See Summary of Activity 530
531 Credit Points; maximum 2,800 points
532 Impact Adjustment
533 Credit Calculation
534 Credit Documentation
535 For more detailed Information

540 Drainage System Maintenance: See Summary of Activity 540
541 Credit Points; maximum 330 points
542 Impact Adjustment
543 Credit Calculation

544 Credit Documentation
545 For more detailed Information

The City needs to develop Standard Operation Procedures (SOP) for maintenance and develop a system for record keeping. We could simply follow the example below.

I.) Introduction

The Community Rating System (CRS) provides credit under activity 540 for the inspection and maintenance of a community's drainage system. One of the objectives of the CRS is to encourage and recognize stormwater utility programs that prevent flooding caused by blockages or reduction in storage due to debris accumulation.

Communities within the Pacific Northwest that attempt to qualify for credit under activity 540, do not rely on certain natural features as part of their drainage system because they have limitations that are imposed upon them due to Federal mandates associated with the Endangered Species Act (ESA). This paper will attempt to provide guidance to CRS communities within the Pacific Northwest, or any regions that are impacted by similar issues, to follow in the preparation of activity 540 documentation so that fair and accurate credit can be verified. This script will attempt to illustrate full CRS compliance for activity 540, within ESA mandated requirements. It should be noted that such a script would not be possible if it were not for total and complete consultation with all agencies associated with the issues at hand. This paper is based on a collaboration of the following entities:

King County, WA. Pierce County, WA. Thurston County, WA. City of North Bend, WA. National Marine Fisheries Service WA. Department of Ecology, Northwest Floodplain Management Association (NORFMA)

To receive the base credit under CRS activity 540, a program must include all of the following elements:

- ✓ **Inspections of the defined drainage system are conducted at least once per year**
- ✓ **An inspection is conducted after each storm that could adversely impact the system**
- ✓ **Inspections are conducted in response to citizen complaints**
- ✓ **Action is taken after an inspection identifies a need for maintenance**

Additional credit can be provided if a community has identified problem spots that are inspected and maintained differently or more frequently than other parts of the drainage system. Also, additional credit is provided for when a stormwater utility capital improvement plan to eliminate or correct known problem sites is implemented. These credit points are to be adjusted based on the area impacted by the inspection and maintenance program. A community that maintains 100% of the defined drainage system within developed portions of its jurisdiction should

receive 100% of the credit for the element. These mandatory elements are to be documented by procedures, instructions, or other documents (SOP – standard operating procedures) that explain the community's routine inspection and maintenance program. This SOP shall address 5 elements:

- ✓ **Identify who is responsible for the program**
- ✓ **Define the drainage system (includes a map)**
- ✓ **Procedures for inspection and maintenance**
- ✓ **Explain debris removal procedures**
- ✓ **Summarize what types of records will be maintained**

Most CRS communities within the Pacific Northwest have been able to provide satisfactory documentation for these required elements. The controversy lies within two primary issues. The first is the definition of the drainage system. In the past, Northwest Communities have developed SOP's for CRS documentation purposes that defined a drainage system that eliminated or decreased the importance of steams with ESA listed species. This was due to interpretation of the "define your drainage system" requirement under the CRS. The second is clear definitions of what can be done on these types of systems. The concern surrounds implementing CRS maintenance in natural stream systems with ESA listed species, where federal regulations protecting these species and their habitat preclude the type of routine maintenance activities specified by the CRS. This paper will address these 2 points.

II.)Definition of Your Drainage System

The lack of a detailed description of the drainage system servicing a community within the CRS parameters have led some who administer the CRS to conclude that portions of the drainage system is not maintained. To address this concern, the following theme is recommended when defining your drainage system: ***"If it floods, we don't care"*** In other words, exclude those systems where flood events typical for that system will not impact buildings. The CRS allows categorical exclusions when defining your drainage system. The CRS model for activity 540 states:

"For the purposes of this activity, the drainage system consists of all natural and human-made watercourses, conduits, and storage basins that must be maintained in order to prevent flood damage to buildings from smaller, more frequent storms".

With this definition in mind, it also states that systems within the following areas do not need to be included for CRS credit:

- ✓ **Drainage facilities in undeveloped areas. This is defined as agricultural and open space areas, and areas with less than one building per acre.**
- ✓ **Channels that will not inundate buildings during a flood.**
- ✓ **Natural storages areas such as lakes, ponds, marshes, and wetlands.**
- ✓ **Irrigation canals that are not utilized as part of the defined drainage system**

With these parameters stipulated by the CRS Coordinators Manual, use the following guidance when defining your drainage system:

1. **Define flooding:** Throughout activity 540 in the CRS Coordinators Manual and the activity 540 model you see the following statement: "protect buildings from flooding". Protection from what frequency of flood event? The 100 -year flood? The 50-year flood? The 25 or 10 year flood? It is not the intention of activity 540 to create and maintain 100-year flood protection on all drainage systems. The goal of the activity is to protect buildings from flooding from smaller more frequent events typical for a system. This would be 2,5, or 10-year events, which would be typical events that a regional retention/detention system would be designed for, and up to a 25-year event for culverts. FEMA maps represent flood inundation for the 100-year flood that could be considered the worst-case scenario for those systems mapped by FEMA. The CRS Coordinators Manual requires communities to count these areas when determining the area impacted by the drainage system maintenance program. For those systems that have not been mapped by FEMA, attempt to quantify typical flooding that could affect buildings for each system for out of banks, smaller and more frequent flooding. This may be a 25-year event for some systems and a 2-year event for others. Detailed studies are not needed to determine this quantification. Approximate methods such as interpolation or historical observed data for a system is adequate. Communities should be able to substantiate this determination as this information will be important when determining which areas will meet the standards for "excluded areas" for maintenance.
2. **Define your drainage system:** When defining your drainage system, include each and every mechanism that will be utilized to store and convey stormwater. Ask yourself; if I were a drop of rainwater, how would I get through your community to the desired end point? Illustrate these on a map.
3. **Excluded areas**: Once you have defined and mapped your drainage system, exclude the following:
   - All corporate jurisdictions not within your regulatory control.
   - All federal and tribal lands.
   - Any tract of land that was credited under the CRS as Open Space.
   - Any parcel that has a current zoning and existing land use where the minimum lot size is one acre or greater. (1 structure/acre or less dense).
   - Lakes, natural ponds, marshes or mapped wetlands and bodies of water greater than 10 acres.
   - Regulatory buffers adjacent to streams or channels unmapped by FEMA that would result in a structure being set back from flooding from smaller more frequent events typical for that system. For example: If your community has a regulatory 75-foot buffer on a class 2 stream that requires new structures to be set back from the buffer, exclude those systems from the area impacted by the inspection and maintenance program. Remember the theme: "if it floods, we don't care". Flooding from smaller more frequent events typical for this system will not impact buildings.

Now that you have identified the drainage system subject to the SOP, identify the streams with ESA listed species. This is necessary because ESA compliant procedures will be identified for streams with ESA listed species. Because of the concept of

"presumed presence", this may be all of the systems you have identified. Attempt to identify and segregate systems based on the maintenance protocol that can occur. These will only be in the areas left after you have gone through the exclusion exercise outlined above.

When this exercise is done, you should have a map that will show corporate limits, and defined drainage systems that are inspected and maintained according to the SOP, not removed due to the categorical exclusions noted above. It is suggested that the excluded areas be "blanked" out when preparing this map using GIS. This map will be used to illustrate the area impacted by the program, and thus justify the credit verified. If systems are left on this map that are allowed to be excluded, it will cloud the picture and confuse the application of the standards required under the SOP. You may wish to produce 2 maps, one that shows the entire system, and one that shows what is left after the exclusion exercise.

III.) Address ESA issues in SOP

Now that the drainage system has been defined, the SOP should clearly address that defined drainage system. As stated earlier, Northwest communities have done a good job of developing SOP's in the past. These SOP's should not be changed, but enhanced. This enhancement should focus on 2 important aspects.

One is to categorize the degree of importance a drainage facility plays in the entire drainage system scheme. For example, active Stormwater management of the increase in run-off from new development is very prevalent today with federal mandates such as the Clean Water Act and NPDES programs. Communities like King, Pierce and Thurston Counties have done excellent jobs of using this mandate to create regional facilities that seek to decrease the impact of stormwater on natural fish bearing streams. In the hierarchy of importance to the functionality of a drainage system as a whole, these regional facilities should be rated higher than systems not relied as heavily upon to covey stormwater, such as natural fish bearing streams. This should be illustrated in the SOP. Do not ignore these systems with critical habitat in the SOP, just attempt to classify their level of importance based upon the whole drainage system. This is important because the CRS does not attempt to quantify the types of maintenance that can occur on a system. All that it asks for is maintenance to occur based on need identified by periodic inspection.

Second, clearly establish an SOP for inspection and maintenance in streams with ESA listed species. These systems have been identified and mapped during the "define the drainage system" exercise. It is recommended that a separate category in the SOP be created. Since a Regional Road Maintenance (RMP) program has recently been recognized and concurred by the National Marine Fisheries Service (NMFS) that will offer protection under section 4 of the ESA, it is recommended that the (RMP) program be referenced in this section. This RMP was designed so that routine road maintenance activities would be protective of salmonids and their habitat. This RMP is more than a BMP manual. It establishes a program framework for maintenance of facilities including drainage systems that include 10 program elements. These 10

program elements far exceed the CRS drainage system maintenance approach and should address any maintenance concerns in streams with ESA listed species. It may be debated that some of these BMP's may seem contrary to the objectives of the CRS activity 540. This would mainly stem from the issue of woody debris. The CRS guidance would like to see this potential flow obstruction removed, while the RMP would like to see this habitat element reintroduced to a system in a manner that enhances habitat while not adversely affecting flooding potential.

To address these concerns, a community should identify reach areas with listed species that have potential flooding problems due to ESA mandates. These reach areas should then be treated as "hot-spots" in the SOP. Clearly define how these locations will be monitored during potential flooding events. Illustrate that the RMP has outlined a program element for emergency response that expands and expedites maintenance options to a community when there is a threat to life or property. Remember, this will only apply to streams with listed species where maintenance options outlined by the RMP would conflict with CRS objectives (ie: woody debris issues). It should be noted that many of the BMP"s in the RMP are very CRS friendly. For example, providing for fish passage in culverts usually results in increase conveyance.

The following is an example of how this issue might be addressed in an SOP:

Inspection and Maintenance on streams with ESA listed species

Those drainage systems highlighted in red on the drainage system map in exhibit "A" have been identified as having habitat for threatened and endangered salmonid species protected under the Endangered Species Act. Pierce County recognizes that these systems serve a dual purpose within its ecosystem. They do provide conveyance of Stormwater and play a minimal role in the overall drainage system for Pierce County. They also provide habitat for threatened and endangered salmonid species protected under the ESA. With both of these roles in mind, Pierce County will attempt to maintain the functionality of both of these roles within the limits mandated by federal, state and local laws. The key to doing this will be identifying potential problems by periodic inspection. These identified sites will be included in the inventory of drainage facilities monitored by both the Pierce County Road Maintenance and Pierce County Water Programs Divisions.
Once a problem has been identified, maintenance options will be identified using the Best Management Practices (BMP) section (Part 2)of the Regional Road Maintenance Program (RMP). The RMP has been approved by National Marine Fisheries Service (NMFS) and maintenance practices implemented pursuant to RMP policies are not required to consult under section 4 of the ESA. All necessary permits and consultations (404, section 7 if there is a federal nexus) will be sought prior to initiation of this maintenance. It should be understood that the time frame between

problem identification and initiation of maintenance is dependent on due process. Until maintenance can occur, these sites will be monitored. In Pierce County's effort to maintain both roles of these environmentally significant systems, situations may occur where functionality of both roles is not possible. For example, it may not be possible to remove a log-jam from a stream system because of the impact on salmonid habitat. Or the most appropriate BMP for maintenance of a system includes the reintroduction of woody debris into the system to enhance habitat. It should be noted that Pierce County will always yield to the action mandated by federal, state and local law in these situations. When these situations occur, Pierce County Maintenance Divisions will identify these locations as "hot spots" to be monitored during high flow events. Since the RMP establishes programmatic procedures for emergency response, allowed maintenance activities are expanded and procedures are expedited when it is deemed there is a threat to life and property. The end result of this approach is that maintenance is completed within the parameters of federal, state and local law before damage to structures can occur. This clearly meets the intent of CRS activity 540.

IV.) The Routine Road Maintenance Program (RMP)

Based on a collaborative effort between 24 local jurisdictions within the state of Washington, the Washington Department of Transportation (WSDOT) and the National Marine Fisheries Service (NMFS), the Routine Road Maintenance Program was created pursuant to protective regulations promulgated under the ESA. On January 25th 2002, NMFS published a "notice of availability and request for comments" in the Federal Register. The RMP was designed so that routine road maintenance activities would be protective of salmonids and their habitat and meet requirements stipulated under section 4 of the ESA.

Under section 4 of the ESA, the Secretary of Commerce is required to adopt such regulations as he deems necessary and available for the conservation of species listed as threatened. The ESA salmon and steelhead 4(d) rule (65 FR 42422, July 10, 2000) specifies categories of activities that contribute to conservation of listed salmonids and sets out the criteria for such activities. The rule further provides that prohibitions of paragraph (a) of the rule do not apply to activities associated with routine road maintenance provided that a state or local program has been approved by NMFS to be in accordance with the 4(d) rule. The RMP contributes to conservation through ten program elements, including road maintenance best management practices (BMP's) and an in-depth workforce-training program. Part 1 of the RMP describes the framework including the 10 program elements that comprise the program (Regional Forum, Program Review, BMP's and Conservation Outcomes, Training, Compliance Monitoring, Research, Adaptive Management, Emergency response, Biological Data Collection, and Reporting). In Part 2, the RMP elaborates on element 3, the BMP's, in much greater detail and provides instructions to crews, supervisors, environmental support staff, design personnel and managers. Part 3 describes a process by which additional counties, cities, and ports in Washington State may develop routine road

maintenance programs by adopting part 1 and 2 of the RMP, and the submit their RMP to NMFS for review and approval. The RMP defines what activities are routine road maintenance. These consist of maintenance activities that are conducted on currently serviceable structures, facilities, and equipment, involve no expansion of or change in use, ***and "do not result in significant negative hydrological impact".***

V.) Conclusions

It is hoped that this paper will provide guidance to Pacific Northwest communities in the preparation of CRS documentation for activity 540 that will allow for the verification of the most credit possible. It is also the hope of this paper to refute the perception that Pacific Northwest communities are "doing nothing" on streams with ESA listed species. This plain and simply is not the case. The facts support this. There has not been a single flood since the ESA listing of chinook and bull trout impacted the Pacific Northwest that can be directly attributed to the lack of stream maintenance. This paper also hopes to illustrate the importance of coordination with other agencies. This paper is a direct result of a true collaboration and should be viewed as an example of what can occur via this process. Attached with this package is an example SOP (including a map of the defined drainage system) for Pierce County, WA that has been prepared in accordance with the recommendations of this paper. Also attached is a copy of the Washington Department of Transportation Routine Road Maintenance Program (WADOTRMP).

600 FLOOD PREPAREDNESS ACTIVITIES

- 610 Flood Warning Program: See Summary of Activity 410
  - 611 Credit Points; maximum 225 points
  - 612 Impact Adjustment
  - 613 Credit Calculation
  - 614 Credit Documentation
  - 615 For more detailed Information

- 620 Levee Safety: See Summary of Activity 620
  - 621 Credit Points; maximum 900 points
  - 622 Impact Adjustment
  - 623 Credit Calculation
  - 624 Credit Documentation
  - 625 For more detailed Information

- 630 Dam Safety: See Summary of Activity 630
  - 631 Credit Points; maximum 175
  - 632 Impact Adjustment
  - 633 Credit Calculation
  - 634 Credit Documentation
  - 635 For more detailed Information

We may be eligible for additional credit as a result of the Federal Energy Regulatory Commission (FERC) re-licensing of the Henry M. Jackson Hydroelectric Project (FERC No. 2157) on the Sultan River.

700 COMMUNITY CLASSIFICATION CALCULATIONS

710 Community Growth Adjustment
- 711 Growth Data
- 712 Growth Adjustment Calculation
- 713 Credit Documentation

310 ELEVATION CERTIFICATES

Summary of Activity 310

311 Credit Points. There are four elements in this activity for a maximum of 162 points.

a. Maintaining elevation certificates (EC): Up to 56 points are provided for maintaining FEMA elevation certificates on all buildings built in the Special Flood Hazard Area (SFHA) after the date of application to the CRS. All communities applying to the CRS must apply for this element. The community must make copies of the certificates available to all inquirers. The FEMA elevation certificate is shown in Figure 310-2.

b. Maintaining elevation certificates for post-FIRM buildings (ECPO): Up to 56 points are provided for maintaining elevation certificates on buildings built before the date of application to the CRS but after the initial date of the Flood Insurance Rate Map (FIRM).

c. Maintaining elevation certificates for pre-FIRM buildings (ECPR): Up to 15 points are provided for maintaining elevation certificates on buildings built before the initial date of the FIRM.

d. Maintaining elevation certificates in computer format (ECCF): Up to 15 points are provided if the elevation certificate data are kept and made available in computer format. A free elevation certificate computer program may be ordered (see Appendix E).

e. Maintaining elevation certificate data on a website (ECWS): Up to 20 points are provided for putting elevation certificate data on a publicly accessible website.

312 Impact Adjustment. The credit points for the last four elements are adjusted in one of three ways. There is no impact adjustment for EC.

a. Under Option 1, where there are elevation certificates on all buildings that could have them, the impact adjustment ratio is 1.0.

b. Under Option 2, where there are elevation certificates on at least 25% of all buildings that could have them, the impact adjustment ratio is 0.25.

c. Under Option 3, the impact adjustment ratios reflect the proportion of buildings that have elevation certificates.

313 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios.

314 Credit Documentation. The community must have the following available to verify implementation of this activity:

a. [If applying for ECPO or ECPR and the community used a form different from FEMA's] A copy of the elevation certificate form and documentation that FEMA has approved the community's form.

b. [If applying for ECCF credit] A copy of the computer format (if it is different from the software listed in Appendix E).

c. Copies of all completed elevation certificates that the community wants credited for EC, ECPR, or ECPO. Sample copies of the digital or website versions will be collected to document credit for ECCF and ECWS.

d. [If applying for ECWS credit] The website address.

e. Documentation showing how the impact adjustments were determined.

The community must submit the following with its annual CRS recertification.

f. [If applying for ECCF credit] A disk with the previous year's elevation certificate data.

315 For More Information.

320 MAP INFORMATION SERVICE

Summary of Activity 320

321 Credit Points. There is one element in this activity for a maximum of 140 points.

Map Information (MI) Service: up to 140 points are provided if the community or other qualified agency:

1. Provides Flood Insurance Rate Map (FIRM) information to inquirers,
2. Provides information on the flood insurance purchase requirement,
3. Provides information on Coastal Barrier Resources System requirements,
4. Keeps old FIRMs and updates the maps used for the service,
5. Publicizes the service at least once a year,
6. Advises inquirers whether the property is subject to a special flood-related hazard, and
7. Answers questions from the inquirers about related topics such as local floodplain management requirements.

There is no impact adjustment for this activity.

322 Credit Calculation. Up to 140 credit points are provided for this activity. The credit points are based on whether all of the prerequisites are met and whether the service is provided through personal contact, a website, or other remote service provider.

323 Credit Documentation. The community must have the following documentation available to verify implementation of this activity.

a. Documentation that shows how the service was publicized.

b. If another agency provides this service, documentation that the agency agrees to provide the service to all inquirers and it will allow the ISO/CRS Specialist to verify its work.

c. Records of institutions and agencies that were notified of this service.

d. A record or log of requests for information. The record must note the date, the FIRM zone, the address or location of the property in question, and whether the inquirer was advised of the insurance purchase requirement and/or coastal barrier designation.

e. Documentation showing how the FIRM is kept updated at least annually. The community must maintain copies of the FIRMs.

324 For More Information.

330 OUTREACH PROJECTS

Summary of Activity 330

331 Credit Points. There are five elements in this activity for a maximum of 380 points. The credit points are partially based on the number of topics covered by each outreach project.

a. Outreach projects to the entire community (OPC): Up to 60 points are provided for sending written information to all properties in the community through a mailing or newsletter.

b. Outreach projects to the floodplain properties (OPF): Up to 130 points are provided for sending a notice directed to properties in floodprone areas. The notice must clearly explain that the recipient's property is subject to flooding.

c. 1. Additional outreach projects (OPA): Up to 60 points are provided for conducting up to three additional outreach projects, such as a "flood awareness week" or flyers inserted in local newspapers, that will reach some of the population; OR

2. Outreach projects pursuant to a public information program strategy (OPS): Up to 125 points are provided for implementation of additional projects that are identified in a public information program strategy. There is no OPA credit if the community receives credit for OPS.

d. Promotion of flood insurance (PFI): Up to 65 points are provided for distributing a letter or brochure on flood insurance to all properties in the community.

332 Credit Calculation. The credit points for each element are totaled.

333 Credit Documentation. The community must have the following documentation available to verify implementation of this activity.

a. Copies of the notices, flyers, and other materials used in the outreach projects.

b. [If the community applies for credit under Section 331.c.2] A copy of the public information program strategy document and documentation that it is being implemented by the community.

c. Documentation that shows when the outreach projects are undertaken.

d. [If the community applies for credit for PFI under Section 331.d] An estimate of the number of buildings, apartments, and condominium units in the community and in the SFHA and how the numbers were calculated.

The community must submit the following with its annual CRS recertification:

e. Copies of the community's outreach projects that were conducted that year.

f. [If the community applies for credit under Section 331.c.2] A copy of the annual evaluation of the community's public information program strategy.

334 For More Information.

340 HAZARD DISCLOSURE

Summary of Activity 340

341 Credit Points. There are four elements in this activity for a maximum of 81 points.

a. Disclosure of the flood hazard (DFH):

- 46 points are provided if real estate agents notify those interested in purchasing properties located in the Special Flood Hazard Area (SFHA) about the flood hazard and the flood insurance purchase requirement.
- 20 points are provided if there is a state law requiring real estate agents to ensure that potential purchasers of properties in the SFHA are notified of the flood hazard.

b. Other disclosure requirements (ODR): 5 points are provided for each other disclosure method required by law.

c. Real estate agents' brochure (REB): 10 points are provided if real estate agents are providing brochures or handouts that advise potential buyers to investigate the flood hazard for a property.

d. Disclosure of other hazards (DOH): 10 points are provided if the notification to prospective buyers includes disclosure of other flood-related hazards, such as erosion, subsidence, or wetlands.

There is no impact adjustment for this activity.

342 Credit Calculation. The credit points for each element are totaled.

343 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. [If applying for DFH credit under Section 341.a.1] Copies of completed disclosure notices from at least five local real estate agencies showing that they are advising potential property purchasers of the flood hazard and the flood insurance purchase requirement.

b. [If applying for DFH credit under Section 341.a.2] A copy of the state law that requires real estate agents to ensure that those interested in purchasing properties located in floodplains are notified of the hazards.

c. [If applying for ODR credit under Section 341.b] A copy of the portion of the ordinance or law that requires one or more additional disclosure methods at the time of sale or rental of a property.

d. [If applying for REB credit under Section 341.c] The brochure or other document made available by real estate agents.

e. [If applying for DOH credit under Section 341.d] Documentation that the notice for DFH includes disclosure of other flood-related hazards.

344 For More Information.

350 FLOOD PROTECTION INFORMATION

Summary of Activity 350

351 Credit Points. There are three elements in this activity for a maximum of 102 points.

a. Flood protection library (LIB): 25 points are provided if the local public library contains at least one document from these topics and the documents are entered into the library's card catalog or similar system that allows patrons to find publications related to flooding and flood protection.

b. Locally pertinent documents (LPD): Up to 5 points are provided for having documents keyed to local or state conditions.

c. Flood protection website (WEB): Up to 72 points are provided for including flood protection information or links to such information on the community's website.

There is no impact adjustment for this activity.

352 Credit Calculation. The credit points for each element are totaled.

353 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. [Required only if the community is applying for LIB or LPD credit] A statement from the head of the library that includes:

1. A list, with publication dates, of the flood-related documents in the library;
2. Either:
   (a) Certification that the documents have been entered into the library's card catalog or similar system; OR
   (b) A copy of the card catalog cards or printout of the automated system's inventory of flood documents; and
3. Certification that the library will maintain adequate numbers of the listed documents to meet the demand and that the FIRMs and other materials will be kept up to date.

b. [Required only if the community is applying for WEB credit] The address of the community's website.

The community must submit the following with its annual CRS recertification:

c. [Required only if the community is applying for WEB credit] Certification that it has conducted its annual review and update of the information and links on its flood protection website.

354 For More Information.

410 ADDITIONAL FLOOD DATA

Summary of Activity 410

411 Credit Points. Additional flood data (AFD) credit is provided for portions of the floodplain that are mapped and managed to standards exceeding the minimum requirements of the National Flood Insurance Program (NFIP). Six elements make up AFD for a maximum of 1,346 points.

a. New study (NS): Up to 410 points are provided for new flood studies that produce base flood elevations or floodways, with additional credit for studying repetitive loss areas.

b. Leverage (LEV): The points for NS are multiplied by a ratio that reflects how much of the study was financed by non-FEMA funds.

c. Higher study standards (HSS): Up to 160 points are provided if the new study was done to one or more higher standards than the FEMA mapping criteria.

d. More restrictive floodway standard (FWS): Up to 200 points are provided based on the allowable floodway surcharge used in the study.

e. Additional flood data for special hazards (AFDSH): Up to 50 points are provided if the community maps and regulates areas of special flood-related hazards.

f. Cooperating Technical Partner (CTP): Up to 141 points are provided if the community, appropriate regional agency, or state has a signed, qualifying CTP agreement with FEMA.

412 Impact Adjustment. The credit points for each element are adjusted in one of three ways.

a. Under Option 1, if the standards apply throughout the Special Flood Hazard Area (SFHA), the impact adjustment ratio for an element is 1.0.

b. Under Option 2, if the standards do not apply throughout the SFHA, a default impact adjustment ratio of 0.25 may be used.

c. Under Option 3, the impact adjustment ratios may reflect the proportion of the SFHA affected by the element. The ratio may be as high as 1.5 if the community maps and regulates floodplains outside of the SFHA.

413 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and the products are totaled.

414 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. The ordinance or law that adopts the map or standard.

b. A copy of the study or technique used, an explanation of the technique used, and a licensed engineer's statement that the study was based on a technique approved by FEMA, or documentation that the study or technique has been reviewed and accepted by FEMA.

c. [If applying for NS credit for independent review under Section 411.a] Documentation that the study or analysis technique has been reviewed and accepted.

d. [If applying for LEV credit under Section 411.b] Documentation of the non-FEMA share of the flood study.

e. [If the impact adjustment factors were based on Option 3 (412.c)] The Impact Adjustment Map.

f. [If the community is requesting credit for CTP2 under Section 411.f] Documentation of the relation between the study or standard and the CTP agreement.

g. [If the community has received credit for a new study (NS)] At the cycle verification visit, a certification by the community's engineer that the maps are still current.

415 For More Information.

420 OPEN SPACE PRESERVATION

Summary of Activity 420

421 Credit Points. There are four elements in this activity for a maximum of 900 points (excluding special hazards credit).

a. Preserved open space (OS): Up to 725 points are provided for keeping vacant floodplain lands open. This can be done by keeping the land publicly owned (e.g., a park or golf course), by keeping it as a private preserve (e.g., hunting club lands), or by regulating development so that there will be no new buildings or filling on the land.

b. Deed restrictions (DR): Up to 75 points are provided if the deeds for the parcels preserved as OS have restrictions that prevent future owners from developing them.

c. Natural and beneficial functions (NB): Up to 100 points are provided if the parcels preserved as OS are in an undeveloped natural state, have been restored to a natural state, or protect natural and beneficial floodplain functions.

d. Special hazard areas preserved as open space (SHOS): Up to 50 points are provided if the open space is also in an area subject to one of the special flood-related hazards listed in Section 401.

422 Impact Adjustment. The credit points for each element are adjusted in one of three ways.

a. Under Option 1, where the entire regulatory floodplain is affected, the impact adjustment ratio for an element is 1.0.

b. Under Option 2, where at least 5 acres of regulatory floodplain are affected, the impact adjustment ratio for an element is 0.05 for OS and 0.1 for DR and NB.

c. Under Option 3, the impact adjustment ratios reflect the proportion of the regulatory floodplain affected by an element.

423 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios.

424 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. [Required only if credit for OS is based on a prohibitory regulation] A copy of the regulatory language.

b. Documentation showing the development restriction for each parcel to be credited under OS. If Option 2 was used, then documentation is only needed for 5 acres.

c. Documentation showing the deed restriction for each parcel to be credited under DR. If Option 2 was used, then documentation is only needed for 5 acres.

d. Documentation, signed by a professional in a natural science, that parcels credited under NB have been preserved in or restored to an undeveloped natural state. If Option 2 was used, then documentation is only needed for 5 acres.

e. The Impact Adjustment Map, showing the areas designated for credit.

f. [Required only if credit is requested for areas outside the Special Flood Hazard Area (SFHA) shown on the Flood Insurance Rate Map (FIRM)] Documentation showing that floodplain regulations are in effect in those areas.

425 For More Information. Additional credit for open space in special hazard areas is discussed in the supplements on special hazards.

430 HIGHER REGULATORY STANDARDS

Summary of Activity 430

431 Credit Points. There are 16 elements in this activity for a maximum of 2,740 points (excluding special hazards credit):

a. Freeboard (FRB): Up to 300 points for a freeboard requirement.
b. Foundation protection (FDN): Up to 35 points for engineered foundations.
c. Cumulative substantial improvements (CSI): Up to 110 points for counting improvements cumulatively.
d. Lower substantial improvements (LSI): Up to 90 points for a substantial improvement threshold lower than 50%.
e. Protection of critical facilities (PCF): Up to 100 points.
f. Protection of floodplain storage capacity (PSC): Up to 80 points.
g. Natural and beneficial functions regulations (NBR): Up to 40 points.
h. Enclosure limits (ENL): 300 points for prohibiting first-floor enclosures.
i. Other higher standard (OHS): Up to 100 points for other regulations.
j. Land development criteria (LD). Up to 700 points, as calculated in Section 430LD.
k. Special hazards regulations (SH): Credit points vary for regulations keyed to special flood-related hazards.
l. State-mandated regulatory standards (SMS): Up to 45 points.
m. Building code (BC): Up to 190 points, based on the community's classification under the Building Code Effectiveness Grading Schedule and adoption of the International Code Series.
n. Staffing (STF): Up to 50 points, based on certification and training of the community's staff.
o. Manufactured home parks (MHP): Up to 50 points for certain anchoring and elevation requirements.
p. Coastal AE Zones (CAZ): Up to 650 points for construction standards in certain coastal zones.

432 Impact Adjustment. The credit points for each element are adjusted in one of three ways:

a. Under Option 1, if the standards apply throughout the regulatory floodplain, the impact adjustment ratio for an element is 1.0 minus the ratio for open space.
b. Under Option 2, if the standards do not apply throughout the regulatory floodplain, a default impact adjustment ratio of 0.25 may be used; for CAZ credit, the impact adjustment is 0.1.
c. Under Option 3, the impact adjustment ratios may reflect the proportion of the regulatory floodplain affected by the element (excluding open space areas); the adjustment for PCF is based on the 500-year floodplain.

433 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and the products are totaled.

434 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. The portion of the state or local law or ordinance that adopts the regulatory standard.
b. [If impact adjustment factors are based on Option 3 (432.c)] The Impact Adjustment Map.
c. An explanation of the community's enforcement procedures.
d. [If requesting credit for STF (431.n)] A copy of the certification of graduation or floodplain manager certification.

435 For More Information.

430LD LAND DEVELOPMENT CRITERIA

Summary of Activity 430LD

431LD Credit Points. This activity has two elements that provide up to 700 points for managing the development of land in ways that minimize construction of buildings in the floodplain.

a. Land development criteria (LDC): Up to 100 points for regulations that require or encourage appropriate uses in the floodplain and/or discourage construction of buildings in floodprone areas. Additional credit is provided under Activity 420 (Open Space Preservation) as open space is set aside through the regulations credited here.

b. Low density zoning (LZ): Up to 600 points are provided for low density zoning. Low density is considered a minimum of 1 acre per building or unit. Maximum credit is provided for a 10-acre or larger minimum lot size. The credit points are calculated by multiplying the minimum lot size by 60. Credit is provided for up to three different zoning densities.

432LD Impact Adjustment. The credit points for each element are adjusted in one of three ways.

a. Under Option 1, if the same requirement is implemented throughout the regulatory floodplain, the impact adjustment ratio is 1.0, minus the ratio for open space.

b. Under Option 2, if part of the area of regulatory floodplain is zoned for low density, the community may use the default value of 0.10 for each of its two lowest density zones.

c. Under Option 3, the impact adjustment ratio for each element reflects the proportion of the regulatory floodplain affected (excluding open space areas).

433LD Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and the products are totaled.

434LD Credit Documentation. The community must submit the following.

a. The ordinance language that adopts the land development criteria and/or low density zoning standard.

The community must have the following documentation available to verify implementation of this activity:

b. The Impact Adjustment Map.

c. An explanation of the community's enforcement procedures.

d. Examples of developments constructed in accordance with the ordinance language.

435LD For More Information

440 FLOOD DATA MAINTENANCE

Summary of Activity 440

441 Credit Points. There are four elements in this activity for a maximum of 239 points (excluding special hazards credit).

a. Additional map data (AMD): Up to 129 points are provided for implementing digital or paper systems that improve access, quality, and/or ease of updating flood data within the community. Each system must be used by the local regulatory staff on a regular basis. The data in the system must be updated at least annually.

b. Elevation reference mark maintenance (ERM): Up to 90 points are provided if a community maintains its elevation reference marks.

c. Erosion data maintenance (EDM): Points are provided for maintaining coastal erosion data as described in *CRS Credit for Management of Coastal Erosion Hazards*.

d. FIRM maintenance (FM): Up to 20 points for maintaining copies of all Flood Insurance Rate Maps (FIRMs) that have been issued for the community.

442 Impact Adjustment. The credit points for each element are adjusted in one of three ways.

a. Under Option 1, if the program is implemented throughout the Special Flood Hazard Area (SFHA), the impact adjustment ratio for an element is 1.0.

b. Under Option 2, if the program is not implemented throughout the SFHA, a default impact adjustment ratio of 0.25 may be used.

c. Under Option 3, if the program is not implemented throughout the SFHA, the impact adjustment ratios may reflect the proportion of the SFHA affected.

443 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and the products are totaled.

444 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. A summary of all elements of its flood data maintenance program and a description of how these elements are used and updated on a regular basis.

b. [If the community calculates impact adjustment factors using Option 3 (Section 442.c)] The Impact Adjustment Map discussed in Section 403.

c. Copies of the digitized mapping, parcel records, and/or overlay maps, elevation reference mark data, erosion data, shoreline erosion records, and/or old FIRMs, as appropriate.

d. [If the community is applying for credit for maintaining elevation reference marks (ERM)] A copy of the master list of elevation reference marks and documentation that shows when they are inspected and repaired or replaced.

The community must submit the following documentation with its annual CRS recertification:

e. Identification of any reference marks that appear on the FIRM that were found to be missing or inaccurate.

445 For More Information.

450 STORMWATER MANAGEMENT

Summary of Activity 450

451 Credit Points. There are five elements in this activity for a maximum of 670 points.

a. Stormwater management regulations (SMR): Up to 225 points are provided for regulating developments on a case-by-case basis to ensure that the peak flow of stormwater runoff from each site will not exceed the predevelopment runoff. SMR credit is the sum of three subelements:
   1. Size of developments regulated (SZ): Up to 25 points.
   2. Design storms used in regulations (DS): Up to 90 points.
   3. Public maintenance of required facilities (PUB): Up to 110 points.

b. Stormwater management master plan (SMP): Up to 225 points are provided for regulating development according to a stormwater management master plan.

c. Freeboard for new buildings in B, C, D, and X zones (FRX): Up to 150 points are provided for requiring all new buildings (not just those in floodplains) to be protected from local drainage problems.

d. Erosion and sedimentation control regulations (ESC): Up to 45 points are provided for regulations to minimize erosion from land disturbed due to construction or farming.

e. Water quality regulations (WQ): 25 points are provided for regulations that improve the quality of stormwater runoff.

452 Impact Adjustment. The credit points for SMR and SMP are adjusted in one of three ways. The standards for the other elements must apply throughout the community, so there is no impact adjustment for them.

a. Under Option 1, if the standards apply throughout all watersheds affecting the community, the impact adjustment ratio for an element is 1.0.

b. Under Option 2, if the standards do not apply throughout all watersheds affecting the community, a default impact adjustment ratio of 0.25 may be used.

c. Under Option 3, if the standards do not apply throughout all watersheds affecting the community, the impact adjustment ratios may reflect the proportion of the watersheds affected.

453 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and the products are totaled.

454 Credit Documentation. The community must submit the following:

a. [If requesting credit for SMR] A copy of the language from the ordinance or law that tells how surface water runoff from new development is regulated.

b. [If requesting credit for SMP] Certification and appropriate pages from the stormwater master plan.

c. [If requesting credit for FRX] A copy of the language from the ordinance or law that requires elevation of the lowest floor or lowest opening of new buildings.

d. [If requesting credit for ESC] A copy of the erosion and sediment control ordinance or law.

e. [If requesting credit for WQ] A copy of the language from the ordinance or law that requires new developments to implement appropriate best management practices.

f. [If impact adjustment ratios use Options 1 or 3] An Impact Adjustment Map showing the watershed boundaries and stormwater management jurisdiction.

g. [If impact adjustment ratios include areas regulated by another community(ies)] Documentation of the other community's (or communities') regulation.

h. [If requesting credit for PUB] A copy of inspection and maintenance procedures for drainage facilities.

The community must have the following available to verify implementation of this activity:

i. Development and building permit records that demonstrate enforcement of the regulations.

j. An evaluation report on the effectiveness and currency of the stormwater management plans.

455 For More Information.

510 FLOODPLAIN MANAGEMENT PLANNING

Summary of Section 510

Credit is provided for preparing, adopting, implementing, evaluating, and updating a comprehensive floodplain management plan or repetitive loss area analyses. The Community Rating System (CRS) does not specify what must be in a plan, but it only credits plans that have been prepared and kept updated according to the standard planning process explained in Section 511. Credit is also provided for implementing a habitat conservation plan.

511 Credit Points. Up to 359 points are provided for three elements.

a. Up to 294 points are provided for adopting and implementing a floodplain management plan (FMP) that was developed using the following standard planning process. There must be some credit for each of the 10 planning steps.

Step	Max points
1. Organize to prepare the plan	10
2. Involve the public	85
3. Coordinate with other agencies	25
4. Assess the hazard	20
5. Assess the problem	35
6. Set goals	2
7. Review possible activities	30
8. Draft an action plan	70
9. Adopt the plan	2
10. Implement, evaluate, and revise	15

b. Up to 50 points are provided for conducting repetitive loss area analyses (RLAA).

c. Up to 15 points are provided for adopting and implementing a Habitat Conservation Plan (HCP).

512 Impact Adjustment.

a. Under Option 1, if the floodplain management plan covers all of the community's known flood hazard areas, the impact adjustment ratio is 1.0. If the repetitive loss area analyses cover all repetitive loss areas, the impact adjustment ratio is 1.0 A Category C repetitive loss community must use Option 1 if it is preparing a plan or analysis to meet the CRS participation prerequisite specified in Section 502.

b. Under Option 2, if the floodplain management plan or repetitive loss area analyses cover some of the community's hazard areas, the impact adjustment ratio is 0.25. A Category C repetitive loss community must use Option 1.

c. Under Option 3, the impact adjustment ratios reflect the proportion of the community's repetitive loss areas that are covered by area analyses.

513 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and the products are totaled.

514 Credit Documentation. The community must submit the following.

a. The activity worksheet or plan review crosswalk.

b. A copy of the floodplain management plan with the credited elements noted in the margin or explained in an attached memo.

c. Documentation showing how the public was involved in preparing or reviewing the plan.

d. Documentation showing that the plan has been adopted by the community's governing body and/or the habitat conservation plan was accepted by the appropriate agency.

e. A copy of each repetitive loss area analysis.

The community must submit the following with its annual CRS recertification.

f. An annual evaluation report on progress toward implementing the recommendations.

g. An update to the plan, prepared at least every five years.

515 For More Information. A free CRS publication, *Example Plans*, provides more information and examples for this activity.

520 ACQUISITION AND RELOCATION

Summary of Activity 520

521 Credit Points. There are two elements in this activity for a maximum of 3,200 points.

a. Buildings acquired or relocated (bAR): Up to 3,200 points are provided based on the number of buildings acquired, relocated, or otherwise cleared from the regulatory floodplain since the effective date of the Flood Insurance Rate Map (FIRM).

b. Buildings on the repetitive loss list that have been acquired or relocated (bRL). Repetitive loss buildings counted for this element may have been located anywhere in the community.

c. Severe Repetitive Loss Properties that have been acquired, relocated, or otherwise removed from the problem site (bSRL)

522 Impact Adjustment. All buildings must have been removed from the SFHA in order to receive the full 3,200 points for this activity. The credit points are adjusted in one of two ways.

a. Under Option 1, if 20 or fewer buildings have been removed, a default impact adjustment gives 5 points for each building.

b. Under Option 2, the credit points are adjusted to reflect the number of buildings that have been acquired or relocated from the Special Flood Hazard Area (SFHA).

523 Credit Calculation.

a. Under Option 1, the number of buildings (bAR) is multiplied by the default value of 5; the number of buildings on the repetitive loss list (bRL) is multiplied by 10, and the number of Severe Repetitive Loss Properties (bSRL) is multiplied by 15.

b. Under Option 2, the impact adjustment ratio is multiplied by 32.

524 Credit Documentation. The community must have the following:

a. A map showing the parcels where floodprone buildings have been demolished or relocated since the effective date of the FIRM and the total number of such buildings (bAR, bRL, and bSRL).

b. Documentation that shows that each site credited under this activity can also qualify for credit as preserved open space in Activity 420.

c. [If the community is using Option 2] Calculations showing the number of buildings in the SFHA.

d. Real estate or permit records that document the date of removal of each building.

e. [If credit is being requested for buildings outside the SFHA] Documentation showing that floodplain regulations are in effect in the area outside the SFHA.

525 For More Information.

530 FLOOD PROTECTION

Summary of Activity 530

531 Credit Points. Up to 2,800 points are provided. However, there is a maximum of 1,000 points for structural flood control projects and 200 for sewer backup protection projects.

a. Prerequisites: Projects must protect to at least the 25-year flood level, in some cases be designed by an engineer, and meet other requirements specific to the type of project.

b. Retrofitting technique used (TU): The points for TU are based on the effectiveness of:

- Elevation,
- Dry floodproofing,
- Wet floodproofing, and
- Protection from sewer backup.

c. Flood control technique used (TU): The points for TU are based on the effectiveness of:

- Barriers,
- Channel modifications, including enlarging bridges and culverts,
- Diversions,
- Storm sewer improvements, and
- Reservoirs and other storage basins that meet state dam safety requirements.

d. Flood protection improvement (FPI): The points are adjusted based on the difference between the flood protection provided before and after the project.

e. The values for TU and FPI for each building are multiplied and totaled to produce the score for protected buildings (PB)

f. Protected buildings on the FEMA repetitive loss list are counted twice toward PB.

532 Impact Adjustment. The credit points are adjusted in one of two ways.

a. Under Option 1, the community receives 4.2 points for each protected building up to a maximum of 84 points.

b. Under Option 2, PB is divided by the number of buildings in the Special Flood Hazard Area.

533 Credit Calculation. The impact adjustment ratio is multiplied by 28.

534 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. Documentation that demonstrates that each project meets the prerequisites as described in Section 531.a.

b. Documentation for each protected building, appropriate to the flood protection technique used.

c. A map showing the location of all protected buildings for which credit is being requested.

d. [If the community is using Option 2] Calculations showing the number of buildings in the SFHA.

e. [If credit is being requested for buildings outside the SFHA] Documentation that shows that floodplain regulations are in effect in the area outside the SFHA.

535 For More Information.

540 DRAINAGE SYSTEM MAINTENANCE

Summary of Activity 540

541 Credit Points. There are three elements in this activity for a maximum of 330 points (excluding special hazard credit).

a. Channel and basin debris removal (CDR): Up to 300 points are provided for inspecting the drainage system and removing debris. For the purposes of this activity, a community's drainage system consists of all natural and human-made watercourses, conduits, and storage basins that must be maintained to prevent flood damage to buildings from smaller, more frequent storms.

b. Stream dumping regulations (SDR): Up to 30 points are provided if the community has regulations prohibiting dumping in streams and ditches.

c. Coastal erosion protection maintenance (EPM): Credit points are provided for maintaining erosion protection programs in communities with coastal erosion-prone areas as described in *CRS Credit for Management of Coastal Erosion Hazards*.

542 Impact Adjustment. The credit points for each element are adjusted in one of three ways.

a. Under Option 1, if the program is implemented throughout the community, the impact adjustment ratio for an element is 1.0.

b. Under Option 2, if the program is not implemented throughout all of the developed portions of the community, a default impact adjustment ratio of 0.2 may be used.

c. Under Option 3, if the program is not implemented throughout all of the developed portions of the community, the impact adjustment ratios may reflect the proportion of the community's drainage system that is affected.

543 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and their products are totaled.

544 Credit Documentation. The community must have the following available to verify implementation of this activity.

a. A description of the drainage system and areas subject to the maintenance program, an explanation of the inspection and debris removal procedures, and records to document both the inspection and removal projects.

b. [Required if the community is applying for credit under Section 541.a.3] A copy or description of the capital improvements program, including
   1. A master list of the community's drainage maintenance problem sites,
   2. Recommended corrective measures for each problem site, and
   3. Documentation that funds are spent on improvement projects each year.

c. [Required if applying for credit for SDR under Section 541.b] A copy of the stream dumping ordinance or pertinent portion of the law.

d. [Required if applying for SDR under Section 541.b.2] A photo or photocopy of the "no dumping" sign OR a copy of the outreach project OR a note that the outreach project documentation is included in the documentation submitted for Activity 330 (Outreach Projects).

e. [If the community determines the impact adjustment factors using Options 1 or 3 (Sections 542.a and 542.c)] An Impact Adjustment Map that shows all channels and other drainage facilities in the developed portion of the community and identifies the channels and facilities covered by the channel and basin debris removal program.

f. Documentation demonstrating that the inspection and maintenance were performed according to the procedures submitted in Section 544.a.

545 For More Information.

610 FLOOD WARNING PROGRAM

Summary of Activity 610

611 Credit Points. There are five elements in this activity for a maximum of 255 points.

a. Flood threat recognition system (FTR): Up to 40 points are provided for a flood threat recognition system that forecasts flood elevations and arrival times at specific locations within the community.

b. Emergency warning dissemination (EWD): Up to 60 points are provided for disseminating the warning to the general public.

c. Other response efforts (ORE): Up to 50 points are provided for implementation of specific tasks to reduce or prevent threats to health, safety, and property.

d. Critical facilities planning (CFP): Up to 50 points are provided for coordination of flood warning and response activities with operators of critical facilities.

e. StormReady community (SRC): If FTR credit is received, 25 or 30 points are provided for designation by the National Weather Service as a StormReady community or a TsunamiReady community.

The community must receive credit for FTR to receive any credit under this activity and it must receive credit for EWD to receive credit for ORE or CFP.

612 Impact Adjustment. The credit points for each element (except SRC) are adjusted in one of three ways.

a. Under Option 1, if the program is implemented throughout the Special Flood Hazard Area (SFHA), the impact adjustment ratio for an element is 1.0.

b. Under Option 2, if the program is not implemented throughout the SFHA, a default impact adjustment ratio of 0.25 may be used.

c. Under Option 3, if the program is not implemented throughout the SFHA, the impact adjustment ratios may reflect the number of buildings in the SFHA affected.

613 Credit Calculation. The credit points for each element are multiplied by the impact adjustment ratios and their products are totaled.

614 Credit Documentation. The community must submit the following.

a. A description of the flood threat recognition system that tells how site-specific forecasts with flood elevations or flood flows and flood arrival times are generated by meteorologic and/or hydrologic data.

b. [Required only if applying for EWD, ORE, or CFP credit under Sections 611.b through d]:
   1. Documentation of adoption of the flood response plan.
   2. Applicable portions of the plan or other documents.
   3. A copy of the materials that publicize the flood warning system.

c. [Required if the impact adjustment ratios used Options 1 or 3 (Section 612.a or 612.c)] Documentation showing how the impact adjustments were determined. If Option 3 is used, a map showing the areas covered by the flood warning program.

The community must submit the following with its annual recertification:

d. [Required if applying for credit for critical facilities planning (CFP1)] A page from the list of operators of the facilities affected by flooding, updated at least annually

If the community experienced a flood during the year, it must submit with its annual recertification:

e. An evaluation report on the flood warning program's performance.

615 For More Information.

620 LEVEE SAFETY

Summary of Activity 620

621 Credit Points. There is one element in this activity for a maximum of 900 points.

a. Levee protection level (LPL): Up to 100 points are provided based on the flood recurrence interval at the flood protection level. The levee's flood protection level is 3 feet below the lowest point of the crown. The following conditions must be met:

b. The levee must have been constructed before January 1, 1991.

c. The community must have a levee emergency plan that specifies actions to be taken at various flood stages.

622 Impact Adjustment. The credit points for each element are adjusted in one of three ways.

a. Under Option 1, if all of the buildings in the Special Flood Hazard Area (SFHA) are protected by the levee, the impact adjustment ratio is 1.0.

b. Under Option 2, if there are at least five buildings protected by the levee, a default impact adjustment ratio of 0.01 may be used and the community receives 9 points for this activity.

c. Under Option 3, the impact adjustment ratio reflects the number of buildings in the SFHA protected by the levee.

623 Credit Calculation. The credit points for LPL are multiplied by the impact adjustment ratio and then by 9.

624 Credit Documentation. The community must submit the following.

a. Levee protection level documentation. EITHER:

1. A statement signed by the U.S. Army Corps of Engineers that states the levee protection level and the date of construction, OR

2. A certification by a licensed professional engineer that states that the levee meets all of the NFIP levee recognition requirements except for height. The certification must also provide the date of construction and the levee protection level.

b. The community's levee emergency response plan specifying actions to be taken at various flood stages.

c. The map showing the area protected by the levee.

d. Documentation showing how the impact adjustment ratios were determined.

The community must submit the following documentation with its annual recertification.

e. A certification by a licensed professional engineer that the levee has been maintained in such a manner that it meets all the NFIP levee maintenance requirements.

625 For More Information.

630 DAM SAFETY

Summary of Activity 630

631 Credit Points. There are two elements in this activity for a maximum of 175 points.

a. State dam safety program (SDS): Up to 75 points are provided if the community is in a state with a dam safety program that has been accepted by FEMA for Community Rating System (CRS) credit. The state dam safety office must have stated that the community's program is in compliance with the state program.

b. Dam failure emergency action plan (DFP): Up to 100 points are provided for the community's dam failure emergency action plan.

632 Impact Adjustment. There is no impact adjustment for SDS. The credit points for DFP are adjusted in one of three ways.

a. Under Option 1, if the plan covers all buildings in the Special Flood Hazard Area (SFHA), the impact adjustment ratio is 1.0.

b. Under Option 2, if the plan does not cover all buildings in the SFHA, a default impact adjustment ratio of 0.25 may be used.

c. Under Option 3, if the plan does not cover all buildings in the SFHA, the impact adjustment ratios reflect the proportion of the buildings in the SFHA covered by the plan.

633 Credit Calculation. The credit points for DFP are multiplied by the impact adjustment ratios and added to SDS.

634 Credit Documentation.

The community must have the following available to verify implementation of this activity.

a. [Required only if applying for DFR or DFP credit under Section 631.b.1] The portions of the emergency plan or other documentation that show that it has dam failure inundation areas, flood elevations, and estimated arrival times, an annual report from the dam operator, annual exercises; and monthly communications checks.

b. [Required only if applying for credit under Section 631.b.2] The portions of the community's emergency plan that detail at least three methods of disseminating a dam failure warning.

c. [Required only if the community is applying for credit under Section 631.b.3]

1. The portions of the community's emergency plan that indicate evacuation routes and procedures for notifying and evacuating critical facilities; and
2. Documentation of the notification of occupants of the dam failure inundation area as discussed in Section 631.b.3.

d. [If Option 3 was used to determine the impact adjustment ratios] The Impact Adjustment Map.

635 For More Information.

710 COMMUNITY GROWTH ADJUSTMENT

Summary of Section 710

Activities related to new development are more important in growing communities than in communities with little or no pressure for future development in floodplains. In this section, the 400 series' regulatory activities are adjusted to reflect the community's average growth rate.

711 Growth Data.

a. U.S. Census growth rate (USGR): USGR is the latest U.S. Census' average annual rate of population growth for the whole county. Use of this rate accounts for growth pressure throughout the area and for potential annexations. The U.S. Census data for a community can be obtained from the FEMA Regional Office.

b. Community growth rate (CMGR): CMGR is the growth rate of population or buildings that may be submitted by the community. This information must be taken from a growth rate accounting system used for state or federal reporting requirements. A community may want to submit a second growth rate if it is higher than USGR. If a second source is submitted, the two rates are averaged.

712 Growth Adjustment Calculation.

a. Average growth rate (AGR): AGR is an average of the values for growth data, USGR and CMGR, if used.

b. Community growth adjustment (CGA): The net result of this adjustment is to increase the credit points earned for the 400 series of activities in growing communities.

713 Credit Documentation. If the community wants the average growth rate to reflect a second source of growth data (CMGR), it must submit documentation that the second growth rate has been accepted by a state or federal agency.

Appendix B
ACRONYMS

The acronyms used in the *CRS Coordinator's Manual* are listed below. The section number tells where the first detailed description of the acronym appears in the manual.

Most of the acronyms are elements of the credited activities in the 300 through 600 series. All elements are in capital letters. Attributes of an element are in lower-case letters. The lower-case letters, "a," "b," "c," and "r," are prefixes. The letters "i," "n," and "s" are suffixes to the elements. For example, "bAR" represents the number of buildings acquired or relocated. The "b" is described in Section 302 and the "AR" is described in Section 521.

Acronym	Section	Description
aDC	542	area of the developed portion of the community
AFD	411	additional flood data
AGR	710	average growth rate
AMD	441	additional map data
AR	521	acquisition or relocation of floodprone buildings
aRF	402	area of the regulatory floodplain
ASDSO	630	Association of State Dam Safety Officials
ASFPM	431	Association of State Floodplain Managers
aW	452	area of a community's watersheds
AW-nnn	210	activity worksheet number nnn
aXXX	402	area affected by element XXX
bAR	521	number of buildings acquired or relocated
BC	431	building code
BCEGS	211	Building Code Effectiveness Grading Schedule
BFE	130	base flood elevation
BMP	451	best management practices (for stormwater quality)
bPO	312	number of post-FIRM buildings in the SFHA
bPR	312	number of pre-FIRM buildings in the SFHA
bRL	521	number of buildings on the repetitive loss list acquired or relocated
bSF	303	number of buildings in the SFHA
bSRL	520	number of Severe Repetitive Loss Properties acquired, relocated, or otherwise removed
bXXX	302	number of buildings affected by element XXX
CAD	441	computer aided design (computer program)
CAZ	431	coastal AE zone regulations
CBRA	320	Coastal Barrier Resources Act
CDR	541	channel and basin debris removal
CEO	130	Chief Executive Officer of a community
CFP	611	critical facilities planning
CFM	431	Certified Floodplain Manager
CFR	310	*Code of Federal Regulations* (in the *Federal Register*)
CGA	711	community growth adjustment

Acronym	Section	Description
CMGR	711	community-supplied growth rate
CRS	110	Community Rating System
CSI	431	cumulative substantial improvement regulations
cT	720	community's total CRS credit points
CTP	410	Cooperating Technical Partner
cXXX	223	credit points for element or activity XXX
DFH	341	disclosure of the flood hazard by real estate agents
DFP	631	dam failure emergency action plan
DOH	341	disclosure of other hazards, such as subsidence
DR	421	deed restrictions placed on open space properties
DS	451	design storms used in stormwater management regulations
EAP	631	dam failure emergency action plan
EC	311	maintaining FEMA elevation certificates
ECCF	311	maintaining elevation certificates in computer format
ECPO	311	maintaining post-FIRM elevation certificates
ECPR	311	maintaining pre-FIRM elevation certificates
ECWS	311	posting elevation certificate data on a website
EDM	441	erosion data maintenance
EMI	364	FEMA's Emergency Management Institute
ENL	431	regulations limiting enclosures below elevated floors
EPM	541	coastal erosion protection maintenance
ERM	441	elevation reference mark maintenance
ESC	451	erosion and sedimentation control regulations
EWD	611	emergency warning dissemination
FB	431	feet of freeboard above the base flood elevation
FDN	431	foundation protection regulations
FEMA	113	Federal Emergency Management Agency
FHBM	441	Flood Hazard Boundary Map
FIRM	113	Flood Insurance Rate Map
FM	441	FIRM maintenance
FMA	510	Flood Mitigation Assistance program
FMP	510	floodplain management planning
FPA	361	flood protection assistance
FPI	531	flood protection improvement
FPB	531	flood protection level before the project was constructed
FPP	531	flood protection provided by the project
FRB	431	floodplain regulations that require freeboard
FRX	451	freeboard for new buildings in B, C, D, and X Zones
FTR	611	flood threat recognition system
FWS	411	more restrictive floodway standard

Acronym	Section	Description
GIS	441	geographic information system
HCP	511	Habitat Conservation Plan
HMGP	510	Hazard Mitigation Grant Program
HSS	410	higher study standard
ICC	431	increased cost of compliance
ISO	113	The Insurance Services Office
LIB	351	flood protection library
LDC	431LD	land development criteria
LEV	410	leverage
LOMA	321	Letter of Map Amendment
LOMR	321	Letter of Map Revision
LP	621	levee protection
LPD	351	locally pertinent documents for a library
LPL	621	levee protection level
LSI	431	lower substantial improvement threshold
LZ	431LD	low density zoning
LZs	431LD	zoning: "s" = maximum number of acres per building
MHP	431	manufactured home park regulations
MI	321	providing map information and FIRM data
MLS	340	Multiple Listing Service
NB	421	open space with natural and beneficial functions
NBR	431	regulations to protect natural and beneficial functions
NFIP	111	National Flood Insurance Program
NGVD	130	National Geodetic Vertical Datum
NID	635	National Inventory of Dams
NOAA	631	National Oceanic and Atmospheric Administration
NS	410	new flood study
ODR	341	other disclosure requirements
OHS	431	other higher regulatory standards
OPA	331	additional outreach projects
OPC	331	outreach project to the entire community
OPF	331	outreach project to floodplain residents
OPS	331	outreach project based on a strategy
ORE	611	other flood warning response efforts
OS	421	floodplain lands preserved as open space

Acronym	Section	Description
PB	531	protected buildings
PBi	531	protection credit for building "i"
PCF	431	regulations that protect critical facilities
PFI	330	promotion of flood insurance
PSC	431	regulations that protect floodplain storage capacity
PUB	451	stormwater facilities subject to public maintenance
REB	341	real estate agent brochure (explains flood hazards)
rXXX	220	ratio of the buildings or area affected by XXX
SDR	541	stream dumping regulations
SDS	631	state dam safety program
SFHA	130	Special Flood Hazard Area
SFIP	431	Standard Flood Insurance Policy
SH	401	special flood-related hazard
SHR	430	special hazard regulations
SMP	451	stormwater management master plan
SMR	451	stormwater management regulations
SMS	431	state-mandated regulatory standards
SRC	61	StormReady community
SZ	451	size of development subject to stormwater management
TU_i	531	technique used to protect building "i"
TVA	344	Tennessee Valley Authority
URL	351	universal resource locator
USGR	711	U.S. Census growth rate
WEB	351	flood protection website
WQ	451	stormwater management regulations for water quality
XXX	B-1	element acronym or variable number
XXXn	222	element number "n," e.g., OPAn = OPA1, OPA2, and OPA3
YCM	441	number of years between checks of reference marks