

230 Cover Page

Community: PIERCE COUNTY *	State: WA	CID: 530138
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Date of visit: 09/23/2014	FIRM Effective Date: 08/19/1987
Population: 819743	Current FIRM Date: 08/04/1988
County: Pierce	ISO/CRS Specialist: Marlene Jacobs
Manual Year: 2013	

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aSFHA = 22684

aSH = 999

bSF = 2080

Activity 310 (Elevation Certificates)

312 Elements

312.a EC

$$\text{Verified Ratio} = \text{Number correct } \underline{30} / \text{Number reviewed } \underline{30} = \underline{1}$$

[Communities need 90% correct to stay in the CRS, but the score for EC is based on the actual verified ratio, which can be < 0.9.]

$$cEC = 38 \times \text{Verified ratio } \underline{1} = \underline{38}$$

312.b ECPO

$$rECPO = bECPO \underline{1} / bPO \underline{1} = \underline{1}$$

$$\text{Verified Ratio} = \text{Number correct } \underline{0} / \text{Number reviewed } \underline{0} = \underline{1}$$

$$cECPO = 48 \times rECPO \underline{1} \times \text{Verified ratio } \underline{1} = \underline{48}$$

312.c ECPR

$$rECPR = bECPR \underline{0} / bPR \underline{0} = \underline{0}$$

$$\text{Verified Ratio} = \text{Number correct } \underline{0} / \text{Number reviewed } \underline{0} = \underline{1}$$

$$cECPR = 48 \times rECPR \underline{0} \times \text{Verified ratio } \underline{1} = \underline{0}$$

313 Credit Calculation

$$c310 = cEC \underline{38} + cECPO \underline{48} + cECPR \underline{0} = \underline{86}$$

Activity 310

Comments

Pierce County WA applies their Floodplain Development Regulations both inside and outside of the Special Flood Hazard Area (SFHA). Since the date of their last Cycle Verification Visit (01/14/2010), the County has collected a combined total of 51 Elevation Certificates (ECs). Of that total 26 were inside the SFHA. The Specialist reviewed all 26 ECs and found them to be correct and complete.

ECPO credit is based on the fact that the County received credit during the last cycle and per the claim by the County that they have collected all ECs for this time period. ECPOs are stored in electronic file format and paper copies are retained in a file cabinet based on FIRM panels in the PALS office at the Pierce County Annex.

Activity 320 (Map Information Services)

322 Elements

322.a MI1

$$\text{Verified Ratio} = \text{Number correct } \underline{5} / \text{Sample Size } \underline{5} = \underline{1}$$

$$\text{cMI1} = \text{MI1 } \underline{30} \times \text{Verified ratio } \underline{1} = \underline{30}$$

322.b MI2

$$\text{Verified Ratio} = \text{Number correct } \underline{1} / \text{Sample Size } \underline{1} = \underline{1}$$

$$\text{cMI2} = \text{MI2 } \underline{20} \times \text{Verified ratio } \underline{1} = \underline{20}$$

322.c MI3

$$\text{Verified Ratio} = \text{Number correct } \underline{1} / \text{Sample Size } \underline{1} = \underline{1}$$

$$\text{cMI3} = \text{MI3 } \underline{20} \times \text{Verified ratio } \underline{1} = \underline{20}$$

322.d MI4

$$\text{Verified Ratio} = \text{Number correct } \underline{1} / \text{Sample Size } \underline{1} = \underline{1}$$

$$\text{cMI4} = \text{MI4 } \underline{20} \times \text{Verified ratio } \underline{1} = \underline{20}$$

322.e MI5

$$\text{Verified Ratio} = \text{Number correct } \underline{1} / \text{Sample Size } \underline{1} = \underline{1}$$

$$\text{cMI5} = \text{MI5 } \underline{20} \times \text{Verified ratio } \underline{1} = \underline{20}$$

322.f MI6

$$\text{Verified Ratio} = \text{Number correct } \underline{0} / \text{Sample Size } \underline{0} = \underline{1}$$

$$\text{cMI6} = \text{MI6 } \underline{0} \times \text{Verified ratio } \underline{1} = \underline{0}$$

322.g MI7

$$\text{Verified Ratio} = \text{Number correct } \underline{1} / \text{Sample Size } \underline{1} = \underline{1}$$

$$\text{cMI7} = \text{MI7 } \underline{20} \times \text{Verified ratio } \underline{1} = \underline{20}$$

324 Credit Calculation

$$\text{c320} = \text{cMI1} + \text{cMI2} + \text{cMI3} + \text{cMI4} + \text{cMI5} + \text{cMI6} + \text{cMI7} = \text{c320}$$

$$\text{c320} = \underline{30} + \underline{20} + \underline{20} + \underline{20} + \underline{20} + \underline{0} + \underline{20} = \underline{90}$$

Activity 320

Comments

Pierce County WA provides the Map Information Services to the target audience (Banks, Insurance Companies and Realtors). The Specialist collected a mailing list for each of the 3 key groups. This activity is publicized annually and a copy of the Requisition for printing and confirmation of the costs can be found in the documentation. The County maintains a log as a record of service.

MI 2 credit is applied for coastal high hazard flood depth information provided in place of LiMWA's.

MI 3 credit is applied for the Deep & Fast Flowing mapped area and the Channel Migration Zones.

MI 4 credit is applied based on the map showing flood depths of current structures after LOMA versus flood depth of proposed D FIRM.

MI 5 credit is based on the Lahar map.

MI 7 credit is based on the fish habitat and wetland map.

Activity 330 (Outreach Projects)

332 Elements

332.a OP

Number of OPs: 21

$$cOP = \sum (OP \underline{115} + PPI(OP) \underline{38} + STK(OP) \underline{1}) = \underline{154}$$

332.b FRP

Number of FRP projects: 0

$$cFRP = \sum (FRP \underline{0} + PPI(FRP) \underline{0}) = \underline{0}$$

333 Credit Calculation

$$c330 = cOP \underline{154} + cFRP \underline{0} = \underline{154}$$

Community : 530138
PIERCE COUNTY, WA

Activity 330

Comments

Pierce County completed the PPI process and French Wetmore reviewed the PPI. Outreach Project (OP) score is based on French Wetmore's rescoring of OPs.

Activity 340 (Hazard Disclosure)

342 Elements

342.a DFH

DFH = 0

342.b ODR

ODR = 25

342.c REB

REB = 0

342.d DOH

DOH = 0

343 Credit Calculation

c340 = DFH 0 + ODR 25 + REB 0 + DOH 0 = 25

Activity 340

Comments

Initial Other Disclosure Requirements (ODR) credit is based on the Washington State Uniform Minimum Credit (UMC) worksheet found in activity 230. UMC credits are applied at 10 points for the Real Estate Sellers Disclosure Form which includes a statement about if the property has ever been flooded. Additional ODR credit was applied for the following County requirements: Chapter 18E.10 Critical Areas Flood Hazard Areas also requires that notice of critical areas be placed (1) on the title of the property, (2) within the Homeowners Covenants, and (3) on any construction plans.

Credit for Disclosure of Other Hazards was requested but no awarded due to the credit criteria which states that DFH credit is a prerequisite of DOH credit.

Activity 350 (Flood Protection Information)

352 Elements

352.a LIB

LIB = 3

352.b LPD

LPD = 9

352.c WEB

WEB1:

Topic	Points	Range
Know your flood hazard	3	0-6
Insure your property	2	0-6
Protect people	5	0-6
Protect property	0	0-6
Build responsibly	1	0-6
Protect natural functions	0	0-6
Is there a creditable PPI? If yes, add the credits below.		
PPI topic 7	0	0-6
PPI topic 8	0	0-6
PPI topic 9	0	0-6
PPI topic 10	0	0-6
WEB1 =	11	0-60

WEB2 (warning, safety, evacuation info) = 10

WEB3 (real-time gage info) = 0

WEB4 (ECs on the website) = 0

WEB = WEB1 11 + WEB2 10 + WEB3 0 + WEB4 0 = 21

353 Credit Calculation

c350 = LIB 3 + LPD 9 + WEB 21 = 33

Activity 350

Comments

Web search key word: flood, flooding, floodplain, floodplain information. Flood information was located with two to three steps.

Library - Locally Pertinent Documents:

4 different local Basin plans

Flood Hazard Management Plan

Supplemental Environmental Impact Statement (EIS)

Staff Report for the EIS

Pierce County Comprehensive Plan

Pierce County flood control zone district Volume 1

Activity 410 (Floodplain Mapping)

412 Elements

Map#1

412.a NS#1

$$\text{Verified ratio} = \text{Number with BFEs } \underline{0} / \text{Number reviewed } \underline{0} = \underline{1}$$

$$\text{cNS\#1} = \text{NS\#1 } \underline{230} * \text{Verified ratio } \underline{1} = \underline{230}$$

412.b LEV#1

$$\text{LEV\#1} = \frac{\text{Non-FEMA share of the study cost}}{\text{Total cost of the study}} = \frac{999}{999} = \underline{1}$$

412.c SR#1

$$\text{SR\#1} = \underline{0}$$

412.d HSS#1

$$\text{HSSa\#1} \quad \text{factor of safety} = \underline{0}$$

$$\text{HSSb\#1} \quad \text{better topo} = \underline{60}$$

$$\text{HSSc\#1} \quad \text{future conditions} = \underline{0}$$

$$\text{HSSd\#1} \quad \text{500-year} = \underline{60}$$

$$\text{HSSother\#1} \quad \text{other} = \underline{0}$$

$$\text{HSS\#1} = \text{total of above} = \underline{120}$$

412.e FWS#1

$$\text{Floodway mapping standard} = \underline{\hspace{2cm}}$$

$$\text{FWS\#1} = \underline{0}$$

412.g CTP2#1

$$\text{CTP2\#1} = \underline{1.18}$$

413 Impact Adjustment

$$\text{rMAP\#1} = \text{aMAP\#1 } \underline{320} / \text{aSFT\#1 } \underline{22684} = \underline{0.01}$$

$$\text{MAP\#1} = ((\text{cNS\#1 } \underline{230} * \text{LEV\#1 } \underline{1}) + \text{SR\#1 } \underline{0} + \text{HSS\#1 } \underline{120} + \text{FWS\#1 } \underline{0}) * \text{rMAP\#1 } \underline{0.01} * \text{CTP2\#1 } \underline{1.18} = \underline{4.13}$$

412.f MAPSH

$$\text{MAPSH} = \underline{50}$$

412.g CTP1

$$\text{CTP1} = \underline{10}$$

414 Credit Calculation

$$\text{c410} = \text{MAP\#1 } \underline{4.13} + \text{MAP\#2 } \underline{11.75} + \text{MAP\#3 } \underline{230.4} + \text{MAP\#4 } \underline{0} + \text{MAP\#5 } \underline{0} + \text{MAP\#6 } \underline{0} + \text{MAPSH } \underline{50} + \text{CTP1 } \underline{10} = \underline{306}$$

Activity 410 (Floodplain Mapping)

412 Elements

Map#2

412.a NS#2

$$\text{Verified ratio} = \text{Number with BFEs } \underline{0} / \text{Number reviewed } \underline{0} = \underline{1}$$

$$\text{cNS\#2} = \text{NS\#2 } \underline{175} * \text{Verified ratio } \underline{1} = \underline{175}$$

412.b LEV#2

$$\text{LEV\#2} = \frac{\text{Non-FEMA share of the study cost}}{\text{Total cost of the study}} = \frac{999}{999} = \underline{1}$$

412.c SR#2

$$\text{SR\#2} = \underline{0}$$

412.d HSS#2

$$\text{HSSa\#2} \quad \text{factor of safety} = \underline{0}$$

$$\text{HSSb\#2} \quad \text{better topo} = \underline{60}$$

$$\text{HSSc\#2} \quad \text{future conditions} = \underline{0}$$

$$\text{HSSd\#2} \quad \text{500-year} = \underline{0}$$

$$\text{HSSother\#2} \quad \text{other} = \underline{0}$$

$$\text{HSS\#2} = \text{total of above} = \underline{60}$$

412.e FWS#2

$$\text{Floodway mapping standard} = \underline{\hspace{2cm}}$$

$$\text{FWS\#2} = \underline{0}$$

412.g CTP2#2

$$\text{CTP2\#2} = \underline{1}$$

413 Impact Adjustment

$$\text{rMAP\#2} = \text{aMAP\#2 } \underline{1112} / \text{aSFT\#2 } \underline{22684} = \underline{0.05}$$

$$\text{MAP\#2} = ((\text{cNS\#2 } \underline{175} * \text{LEV\#2 } \underline{1}) + \text{SR\#2 } \underline{0} + \text{HSS\#2 } \underline{60} + \text{FWS\#2 } \underline{0}) * \text{rMAP\#2 } \underline{0.05} * \text{CTP2\#2 } \underline{1} = \underline{11.75}$$

Activity 410 (Floodplain Mapping)

412 Elements

Map#3

412.a NS#3

$$\text{Verified ratio} = \text{Number with BFEs } \underline{0} / \text{Number reviewed } \underline{0} = \underline{1}$$

$$\text{cNS\#3} = \text{NS\#3 } \underline{130} * \text{Verified ratio } \underline{1} = \underline{130}$$

412.b LEV#3

$$\text{LEV\#3} = \frac{\text{Non-FEMA share of the study cost}}{\text{Total cost of the study}} = \frac{999}{999} = \underline{1}$$

412.c SR#3

$$\text{SR\#3} = \underline{0}$$

412.d HSS#3

$$\text{HSSa\#3} \quad \text{factor of safety} = \underline{0}$$

$$\text{HSSb\#3} \quad \text{better topo} = \underline{30}$$

$$\text{HSSc\#3} \quad \text{future conditions} = \underline{0}$$

$$\text{HSSd\#3} \quad \text{500-year} = \underline{0}$$

$$\text{HSSother\#3} \quad \text{other} = \underline{0}$$

$$\text{HSS\#3} = \text{total of above} = \underline{30}$$

412.e FWS#3

$$\text{Floodway mapping standard} = \underline{\hspace{2cm}}$$

$$\text{FWS\#3} = \underline{0}$$

412.g CTP2#3

$$\text{CTP2\#3} = \underline{1}$$

413 Impact Adjustment

$$\text{rMAP\#3} = \text{aMAP\#3 } \underline{32664.96} / \text{aSFT\#3 } \underline{22684} = \underline{1.44}$$

$$\text{MAP\#3} = ((\text{cNS\#3 } \underline{130} * \text{LEV\#3 } \underline{1}) + \text{SR\#3 } \underline{0} + \text{HSS\#3 } \underline{30} + \text{FWS\#3 } \underline{0}) * \text{rMAP\#3 } \underline{1.44} * \text{CTP2\#3 } \underline{1} = \underline{230.4}$$

Activity 410

Comments

Technical review for this activity was provided by Cristina Martinez on 04/16/15.

Activity 420 (Open Space Preservation)

422 Elements

422.a OSP

AA. Acreage of 10 largest OSP sites = 6825

AB. Acreage of the AA sites that pass the office review = 6825

AF. Acreage of the sample sites that pass the office review = 0

Verified acreage of the remaining sites =

$$AD \quad \underline{0} * AG \quad \underline{0} / AE \quad \underline{0} = \underline{0}$$

aOSP = AC 6825 + Verified acreage of remaining sites 0 = 6825

rOSP = aOSP 6825 / aSFHA 22684 = 0.3

cOSP = 1,450 * rOSP 0.3 = 435

422.b DR

BA. Acreage of 10 largest DR sites = 554

Verified acreage of the remaining sites =

$$BC \quad \underline{0} * BE \quad \underline{0} / BD \quad \underline{0} = \underline{0}$$

aDR = BB 554 + Verified acreage of remaining sites 0 = 554

rDR = aDR 554 / aSFHA 22684 = 0.02

cDR = 50 * rDR 0.02 = 1

422.c NFOS

NFOS1 - Natural functions open space (basic)

CA. Acreage of 10 largest NFOS1 sites = 0

CB. Acreage of the CA sites that pass the office review = 0

CF. Acreage of the sample sites that pass the office review = 0

Verified acreage of the remaining sites =

$$CD \quad \underline{0} * CG \quad \underline{0} / CE \quad \underline{0} = \underline{0}$$

aNFOS1 = CC 0 + Verified acreage of remaining sites 0 = 0

rNFOS1 = aNFOS1 0 / aSFHA 22684 = 0

cNFOS1 = NFOS1 0 * rNFOS1 0 = 0

NFOS2 - NFOS1 parcel in a natural functions plan

DA. Acreage of 10 largest NFOS2 sites = 0

Verified acreage of the remaining sites =

$$DC \quad \underline{0} * DE \quad \underline{0} / DD \quad \underline{0} = \underline{0}$$

aNFOS2 = DB 0 + Verified acreage of remaining sites 0 = 0

rNFOS2 = aNFOS2 0 / aSFHA 22684 = 0

Activity 420 (Open Space Preservation)

422 Elements

NFOS3 - NFOS1 parcel has ESA habitat

EA. Acreage of 10 largest NFOS3 sites = 0

Verified acreage of the remaining sites =

$$EC \quad \underline{0} * EE \quad \underline{0} / ED \quad \underline{0} = \underline{0}$$

$$aNFO3 = EB \quad \underline{0} + \text{Verified acreage of remaining sites} \quad \underline{0} = \underline{0}$$

$$rNFO3 = aNFO3 \quad \underline{0} / aSFHA \quad \underline{22684} = \underline{0}$$

$$cNFO3 = NFO3 \quad \underline{0} * rNFO3 \quad \underline{0} = \underline{0}$$

NFOS4 - NFOS1 parcel in a designated corridor

FA. Acreage of 10 largest NFOS4 sites = 0

Verified acreage of the remaining sites =

$$FC \quad \underline{0} * FE \quad \underline{0} / FD \quad \underline{0} = \underline{0}$$

$$aNFO4 = FB \quad \underline{0} + \text{Verified acreage of remaining sites} \quad \underline{0} = \underline{0}$$

$$rNFO4 = aNFO4 \quad \underline{0} / aSFHA \quad \underline{22684} = \underline{0}$$

$$cNFO4 = NFO4 \quad \underline{0} * rNFO4 \quad \underline{0} = \underline{0}$$

NFOS5 - NFOS1 parcel has educational materials

GA. Acreage of 10 largest NFOS5 sites = 0

Verified acreage of the remaining sites =

$$GC \quad \underline{0} * GE \quad \underline{0} / GD \quad \underline{0} = \underline{0}$$

$$aNFO5 = GB \quad \underline{0} + \text{Verified acreage of remaining sites} \quad \underline{0} = \underline{0}$$

$$rNFO5 = aNFO5 \quad \underline{0} / aSFHA \quad \underline{22684} = \underline{0}$$

$$cNFO5 = NFO5 \quad \underline{0} * rNFO5 \quad \underline{0} = \underline{0}$$

cNFOS

$$cNFOS = cNFOS1 \quad \underline{0} + cNFOS2 \quad \underline{0} + cNFOS3 \quad \underline{0} + cNFOS4 \quad \underline{0} + cNFOS5 \quad \underline{0} = \underline{0}$$

422.d SHOS

GGA. Acreage of the largest SHOS sites = 0

GGB. Acreage of the GGA sites that pass the office review = 0

GGF. Acreage of the sample sites that pass the office review 0

Verified acreage of the remaining sites =

$$GGD \quad \underline{0} * GGG \quad \underline{0} / GGE \quad \underline{0} = \underline{0}$$

$$aSHOS = GGC \quad \underline{0} + \text{Verified acreage of remaining sites} \quad \underline{0} = \underline{0}$$

$$rSHOS = aSHOS \quad \underline{0} / aSFHA \quad \underline{22684} = \underline{0}$$

$$cSHOS = SHOS \quad \underline{0} * rSHOS \quad \underline{0} = \underline{0}$$

Activity 420 (Open Space Preservation)

422 Elements

422.e OSI

OSI1 - Set aside all floodplain in a subdivision

HB.Number of the samples that pass the office review = 1

rOSI1 = aOSI1 15992.22 / aSFHA 22684 = 0.71

Verified ratio = HC 1 / HA 1 = 1

cOSI1 = OSI1 248 * rOSI1 0.71 * Verified ratio 1 = 176.08

OSI2 - Building sites must be on natural high ground

IB.Number of the samples that pass the office review = 0

rOSI2 = aOSI2 0 / aSFHA 22684 = 0.1

Verified ratio = IC 0 / IA 0 = 1

cOSI2 = OSI2 0 * rOSI2 0.1 * Verified ratio 1 = 0

OSI3 - Building sites must be on natural high ground, to the extent possible

JB.Number of the samples that pass the office review = 0

rOSI3 = aOSI3 0 / aSFHA 22684 = 0.1

Verified ratio = JC 0 / JA 0 = 1

cOSI3 = OSI3 0 * rOSI3 0.1 * Verified ratio 1 = 0

OSI4 - TDRs and density bonuses

KB.Number of the samples that pass the office review = 0

rOSI4 = aOSI4 0 / aSFHA 22684 = 0.1

Verified ratio = KC 0 / KA 0 = 1

cOSI4 = OSI4 0 * rOSI4 0.1 * Verified ratio 1 = 0

OSI5 - Cluster development and PUDs

LB.Number of the samples that pass the office review = 1

rOSI5 = aOSI5 15878.8 / aSFHA 22684 = 0.7

Verified ratio = LC 1 / LA 1 = 1

cOSI5 = OSI5 25 * rOSI5 0.7 * Verified ratio 1 = 17.5

Activity 420 (Open Space Preservation)

422 Elements

OSI6 - Tax incentives

MB.Number of the samples that pass the office review = 0

rOSI6 = aOSI6 15878.8 / aSFHA 22684 = 0.7

Verified ratio = MC 0 / MA 0 = 1

cOSI6 = OSI6 25 * rOSI6 0.7 * Verified ratio 1 = 17.5

OSI7 - Land use plan

OSI7 = 10

cOSI

cOSI =

cOSI1 76.08 + cOSI2 0 + cOSI3 0 + cOSI4 0 + cOSI5 17.5 + cOSI6 17.5 + OSI7 10 = 21.08

422.f LZ

First LZ District

LZs#1 = 60 * s#1 10 = 600

PA. Acreage of 10 largest LZs#1 sites = 3014

PB. Acreage of the PA sites that pass the office review = 3014

PF. Acreage of the sample sites that pass the office review = 0

Verified acreage of the remaining sites =

PD 0 * PG 0 / PE 0 = 0

aLZs#1 = PC 3014 + Verified acreage of remaining sites 0 = 3014

rLZs#1 = aLZs#1 3014 / aSFHA 22684 = 0.13

cLZs#1 = LZs#1 600 * rLZs#1 0.13 = 78

Second LZ District

LZs#2 = 60 * s#2 5 = 300

PA. Acreage of 10 largest LZs#2 sites = 24250

PB. Acreage of the PA sites that pass the office review = 24250

PF. Acreage of the sample sites that pass the office review = 0

Verified acreage of the remaining sites =

PD 0 * PG 0 / PE 0 = 0

aLZs#2 = PC 24250 + Verified acreage of remaining sites 0 = 24250

rLZs#2 = aLZs#2 24250 / aSFHA 22684 = 1.07

cLZs#2 = LZs#2 300 * rLZs#2 1.07 = 321

Activity 420 (Open Space Preservation)

422 Elements

Third LZ District

LZs#3 = 60 * s#3 10 = 600

PA. Acreage of 10 largest LZs#3 sites = 0

PB. Acreage of the PA sites that pass the office review = 0

PF. Acreage of the sample sites that pass the office review = 0

Verified acreage of the remaining sites =

PD 0 * PG 0 / PE 0 = 0

aLZs#3 = PC 0 + Verified acreage of remaining sites 0 = 0

rLZs#3 = aLZs#3 0 / aSFHA 22684 = 0

cLZs#3 = LZs#3 600 * rLZs#3 0 = 0

cLZ

cLZ = cLZs#1 78 cLZs#2 321 cLZs#3 0 = 399

422.g NSP

rNSP = aNSP 0 / aSL 0 = 0.1

Verified ratio = $\frac{\text{Number of sites that passed the field check}}{\text{Number of sites checked in the field}}$ $\frac{0}{0} = \underline{1}$

cNSP = NSP 0 * rNSP 0.1 * Verified ratio 1 = 0

423 Credit Calculation

c420 =

cOSP 435 + cDR 1 + cNFOS 0 + cSHOS 0 + cOSI 21.08 + cLZ 399 + cNSP 0 = 1056

Activity 420

Comments

During the Verification Visit the Specialist, the Consultant and County Staff conducted field work and viewed several Open Space Areas where RL structures have been removed. Additional OSP site visits included the South Hill Park and Wetlands, Storage Basin land along Clover Creek, NFOS land along Aqueduct Drive, the Revetment projects along 177th Street E and again near 197th Avenue E and further downstream at 188th Street E. In total, more than 10 OSP sites were viewed while conducting field work.

For rLZ#2, Specialist recorded 24250 because the software requires that the combined rate of OSP and LZ not exceed 1.5. If $OSP = .30$ and $LZ1 = .13$ then $LZ2$ must = 1.07 to not exceed the allowed 1.5 impact adjustment. Actual areas for LZ 1 and LZ 2 (reported by the community) were $aLZ(5ac) = 58,592$ & $aLZ(10) = 3014$.

OSI technical review was provided by Sherry Harper. Since the calculation software has a glitch that will not allow the Specialist to enter credits for OSI 1, 2, 3 & 4, the technical reviewer suggested entering the calculation as shown in only OSI 1 which results in the same credit level that would occur under OSI 1, 2, & 4 combined.

Activity 430 (Higher Regulatory Standards)

432 Elements

432.a DL

DL1 - No fill

DL1a (No fill)

$$rDL1a\#1 = aDL1a\#1 \frac{0}{22684} = 0.1$$

$$\text{Verified ratio} = \frac{\text{Number of sites that passed}}{\text{Number of permits sampled}} = \frac{0}{0} = 1$$

$$cDL1a\#1 = DL1a\#1 \frac{0}{0} * rDL1a\#1 \frac{0.1}{0.1} * \text{verified ratio} \frac{1}{1} = 0$$

DL1b (Compensatory storage)

$$rDL1b\#1 = aDL1b\#1 \frac{77821}{22684} = 1.5$$

$$\text{Verified ratio} = \frac{\text{Number of sites that passed the office review}}{\text{Number of sites checked}} = \frac{1}{1} = 1$$

$$cDL1b\#1 = DL1b\#1 \frac{130}{130} * rDL1b\#1 \frac{1.5}{1.5} * \text{verified ratio} \frac{1}{1} = 195$$

DL2 - No buildings

$$rDL2\#1 = aDL2\#1 \frac{0}{22684} = 0.1$$

$$\text{Verified ratio} = \frac{\text{Number of sites that passed}}{\text{Number of sites checked}} = \frac{0}{0} = 1$$

$$cDL2\#1 = DL2\#1 \frac{0}{0} * rDL2\#1 \frac{0.1}{0.1} * \text{verified ratio} \frac{1}{1} = 0$$

DL3 - Storage of materials

DL3a - no outdoor storage

$$rDL3a\#1 = aDL3a\#1 \frac{0}{22684} = 0.1$$

$$\text{Verified ratio} = \frac{\text{Number of sites that passed}}{\text{Number of sites checked}} = \frac{0}{0} = 1$$

$$cDL3a\#1 = DL3a\#1 \frac{0}{0} * rDL3a\#1 \frac{0.1}{0.1} * \text{verified ratio} \frac{1}{1} = 0$$

DL3b - no storage of hazardous materials

$$rDL3b\#1 = aDL3b\#1 \frac{0}{22684} = 0.1$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} = \frac{0}{0} = 1$$

$$cDL3b\#1 = DL3b\#1 \frac{0}{0} * rDL3b\#1 \frac{0.1}{0.1} * \text{verified ratio} \frac{1}{1} = 0$$

DL3c - Indoor Storage

$$rDL3c\#1 = aDL3c\#1 \frac{0}{22684} = 0.1$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} = \frac{0}{0} = 1$$

$$cDL3c\#1 = DL3c\#1 \frac{0}{0} * rDL3c\#1 \frac{0.1}{0.1} * \text{verified ratio} \frac{1}{1} = 0$$

Activity 430 (Higher Regulatory Standards)

432 Elements

432.a DL

cDL

$$cDL\#1 = cDL1a\#1 + cDL1b\#1 + cDL2\#1 + cDL3a\#1 + cDL3b\#1 + cDL3c\#1 = cDL\#1$$

$$cDL\#1 = \underline{0} + \underline{195} + \underline{0} + \underline{0} + \underline{0} + \underline{0} = \underline{195}$$

$$cDL\#2 = cDL1a\#2 + cDL1b\#2 + cDL2\#2 + cDL3a\#2 + cDL3b\#2 + cDL3c\#2 = cDL\#2$$

$$cDL\#2 = \underline{0} + \underline{0} + \underline{0} + \underline{0} + \underline{0} + \underline{0} = \underline{0}$$

$$cDL\#3 = cDL1a\#3 + cDL1b\#3 + cDL2\#3 + cDL3a\#3 + cDL3b\#3 + cDL3c\#3 = cDL\#3$$

$$cDL\#3 = \underline{0} + \underline{0} + \underline{0} + \underline{0} + \underline{0} + \underline{0} = \underline{0}$$

$$cDL = cDL\#1 \underline{195} + cDL\#2 \underline{0} + cDL\#3 \underline{0} = \underline{195}$$

432.b FRB

$$rFRB\#1 = aFRB\#1 \underline{77821} / aSFHA \underline{22684} = \underline{1.5}$$

$$\text{Verified ratio} = \frac{\text{Number of Certificates that passed the office review}}{\text{Number of Certificates sampled}} = \frac{5}{5} = \underline{1}$$

$$cFRB\#1 = FRB\#1 \underline{110} * rFRB\#1 \underline{1.5} * \text{verified ratio} \underline{1} = \underline{165}$$

cFRB

$$cFRB = cFRB\#1 \underline{165} + cFRB\#2 \underline{0} + cFRB\#3 \underline{0} = \underline{165}$$

432.c FDN

$$rFDN\#1 = aFDN\#1 \underline{0} / aSFHA \underline{22684} = \underline{0.1}$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} = \frac{0}{0} = \underline{1}$$

$$cFDN\#1 = FDN\#1 \underline{0} * rFDN\#1 \underline{0.1} * \text{verified ratio} \underline{1} = \underline{0}$$

cFDN

$$cFDN = cFDN\#1 \underline{0} + cFDN\#2 \underline{0} + cFDN\#3 \underline{0} = \underline{0}$$

432.d CSI

$$CSI1\#1 = \underline{20} \text{ Count improvements cumulatively}$$

$$CSI2\#1 = \underline{0} \text{ Count repairs cumulatively}$$

$$CSI3\#1 = \underline{0} \text{ ICC language}$$

$$CSI4\#1 = \underline{20} \text{ All additions must be protected}$$

$$CSI\#1 = CSI1\#1 \underline{20} + CSI2\#1 \underline{0} + CSI3\#1 \underline{0} + CSI4\#1 \underline{20} = \underline{40}$$

$$rCSI\#1 = aCSI\#1 \underline{15859} / aSFHA \underline{22684} = \underline{0.7}$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} = \frac{5}{5} = \underline{1}$$

$$cCSI\#1 = CSI\#1 \underline{40} * rCSI\#1 \underline{0.7} * \text{verified ratio} \underline{1} = \underline{28}$$

cCSI

$$cCSI = cCSI\#1 \underline{28} + cCSI\#2 \underline{0} + cCSI\#3 \underline{0} = \underline{28}$$

Activity 430 (Higher Regulatory Standards)

432 Elements

432.e LSI

$$rLSI\#1 = aLSI\#1 \quad \underline{0} / aSFHA \quad \underline{22684} = \underline{0.1}$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} = \frac{\underline{0}}{\underline{0}} = \underline{1}$$

$$cLSI\#1 = LSI\#1 \quad \underline{0} * rLSI\#1 \quad \underline{0.1} * \text{verified ratio} \quad \underline{1} = \underline{0}$$

cLSI

$$cLSI = cLSI\#1 \quad \underline{0} + cLSI\#2 \quad \underline{0} + cLSI\#3 \quad \underline{0} = \underline{0}$$

432.f PCF

PCF1 (prohibition of critical facilities)

$$rPCF1\#1 = aPCF1\#1 \quad \underline{0} / a500 \quad \underline{0} = \underline{0.1}$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed}}{\text{Number of permits sampled}} = \frac{\underline{0}}{\underline{0}} = \underline{1}$$

$$cPCF1\#1 = PCF1\#1 \quad \underline{0} * rPCF1\#1 \quad \underline{0.1} * \text{verified ratio} \quad \underline{1} = \underline{0}$$

cPCF1

$$cPCF1 = cPCF1\#1 \quad \underline{0} + cPCF1\#2 \quad \underline{0} + cPCF1\#3 \quad \underline{0} = \underline{0}$$

PCF2 (protection of critical facilities)

$$rPCF2\#1 = aPCF2\#1 \quad \underline{0} / a500 \quad \underline{0} = \underline{0.1}$$

$$\text{Number of permits that passed the office review} = \underline{1}$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} = \frac{\underline{1}}{\underline{1}} = \underline{1}$$

$$cPCF2\#1 = PCF2\#1 \quad \underline{0} * rPCF2\#1 \quad \underline{0.1} * \text{verified ratio} \quad \underline{1} = \underline{0}$$

cPCF2

$$cPCF2 = cPCF2\#1 \quad \underline{0} + cPCF2\#2 \quad \underline{0} + cPCF2\#3 \quad \underline{0} = \underline{0}$$

cPCF

$$cPCF = cPCF1 \quad \underline{0} + cPCF2 \quad \underline{0} = \underline{0}$$

Activity 430 (Higher Regulatory Standards)

432 Elements

432.g ENL

ENL1,2 (no enclosures or small enclosures)

$$rENL1,2 \#1 = aENL1,2 \#1 \frac{77821}{22684} / aSFHA = 1.5$$

Verified ratio:

$$\frac{\text{Number of ECs that passed}}{\text{Number of ECs sampled}} = \frac{1 + \text{Number of buildings passed field check}}{1 + \text{Number of buildings field checked}} = \frac{1}{1} = 1$$

$$cENL1,2 \#1 = ENL1,2 \#1 \frac{240}{22684} * rENL1,2 \#1 \frac{1.5}{1} * \text{verified ratio} \frac{1}{1} = 360$$

cENL1,2

$$cENL1,2 = cENL1,2 \#1 \frac{360}{22684} + cENL1,2 \#2 \frac{0}{22684} + ENL1,2 \#3 \frac{0}{22684} = 360$$

ENL3 (nonconversion agreements)

$$rENL3\#1 = aENL3\#1 \frac{0}{22684} / aSFHA = 0.1$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} = \frac{0}{0} = 1$$

$$cENL3\#1 = ENL3\#1 \frac{0}{22684} * rENL3\#1 \frac{0.1}{1} * \text{verified ratio} \frac{1}{1} = 0$$

cENL3

$$cENL3 = cENL3\#1 \frac{0}{22684} + cENL3\#2 \frac{0}{22684} + cENL3\#3 \frac{0}{22684} = 0$$

cENL

$$cENL = cENL1,2 \frac{360}{22684} + cENL3 \frac{0}{22684} = 360$$

432.h BC

$$BCEGS \text{ classification} = 3$$

If the BCEGS classification number = 1, then BC2 = 50

If the BCEGS classification number = 2, then BC2 = 40

If the BCEGS classification number = 3, then BC2 = 30

If the BCEGS classification number = 4, then BC2 = 20

If the BCEGS classification number = 5, then BC2 = 10

$$cBC = cBC1 \frac{48}{22684} + cBC2 \frac{30}{22684} = 78$$

Activity 430 (Higher Regulatory Standards)

432 Elements

432.i LDP

$$\text{LDP} = \text{LDP1} \underline{0} + \text{LDP2} \underline{40} + \text{LDP3} \underline{0} + \text{LDP4} \underline{0} = \underline{40}$$

Number of permits that passed the office review 1

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} = \frac{1}{1} = \underline{1}$$

$$\text{cLDP} = \text{LDP} \underline{40} * \text{verified ratio} \underline{1} = \underline{40}$$

432.j MHP

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} = \frac{0}{0} = \underline{1}$$

$$\text{cMHP} = \text{MHP} \underline{0} * \text{verified ratio} \underline{1} = \underline{0}$$

432.k CAZ#1

$$\text{rCAZ\#1} = \text{aCAZ\#1} \underline{0.5} / \text{aSFHA} \underline{22684} = \underline{0.5}$$

$$\text{CAZ\#1} = \text{CAZ1\#1} \underline{475} + \text{CAZ2\#1} \underline{150} = \underline{625}$$

Number of permits that passed the office review 1

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} = \frac{1}{1} = \underline{1}$$

$$\text{cCAZ\#1} = \text{CAZ\#1} \underline{625} * \text{rCAZ\#1} \underline{0.5} * \text{verified ratio} \underline{1} = \underline{312.5}$$

432.k CAZ#2

$$\text{rCAZ\#2} = \text{aCAZ\#2} \underline{0} / \text{aSFHA} \underline{22684} = \underline{0.1}$$

$$\text{CAZ\#2} = \text{CAZ1\#2} \underline{0} + \text{CAZ2\#2} \underline{0} = \underline{0}$$

Number of permits that passed the office review 0

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} = \frac{0}{0} = \underline{1}$$

$$\text{cCAZ\#2} = \text{CAZ\#2} \underline{0} * \text{rCAZ\#2} \underline{0.1} * \text{verified ratio} \underline{1} = \underline{0}$$

432.k CAZ#3

$$\text{rCAZ\#2} = \text{aCAZ\#3} \underline{0} / \text{aSFHA} \underline{22684} = \underline{0.1}$$

$$\text{CAZ\#3} = \text{CAZ1\#3} \underline{0} + \text{CAZ2\#3} \underline{0} = \underline{0}$$

Number of permits that passed the office review 0

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} = \frac{0}{0} = \underline{1}$$

$$\text{cCAZ\#3} = \text{CAZ\#3} \underline{0} * \text{rCAZ\#3} \underline{0.1} * \text{verified ratio} \underline{1} = \underline{0}$$

cCAZ

$$\text{cCAZ} = \text{cCAZ\#1} \underline{312.5} + \text{cCAZ\#2} \underline{0} + \text{cCAZ\#3} \underline{0} = \underline{312.5}$$

Activity 430 (Higher Regulatory Standards)

432 Elements

432.l SHR#1

rSHR#1 = aSHR#1 999 / aSH 999 = 1

Number of permits that passed the office review 0

Verified ratio = $\frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} = \frac{0}{0} = \underline{1}$

cSHR#1 = SHR#1 65 * rSHR#1 1 * verified ratio 1 = 65

cSHR

cSHR = cSHR#1 65 + cSHR#2 0 + cSHR#3 0 = 65

432.m OHS#1

rOHS#1 = aOHS#1 22684 / aSFHA 22684 = 1

Number of permits that passed the office review 1

Verified ratio = $\frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} = \frac{1}{1} = \underline{1}$

cOHS#1 = OHS#1 25 * rOHS#1 1 * verified ratio 1 = 25

cOHS

cOHS = cOHS#1 25 + cOHS#2 0 + cOHS#3 0 = 25

432.n SMS

NS =	<u>0</u>	LZ =	<u>0</u>	BC =	<u>45</u>	PUB =	<u>0</u>
HSS =	<u>0</u>	NSP =	<u>0</u>	LDP =	<u>0</u>	LID =	<u>0</u>
FWS =	<u>0</u>	DL =	<u>0</u>	MHP =	<u>0</u>	WMP =	<u>185</u>
MAPSH =	<u>0</u>	FRB =	<u>0</u>	CAZ =	<u>0</u>	ESC =	<u>30</u>
OSP =	<u>0</u>	FDN =	<u>0</u>	SHR =	<u>0</u>	WQ =	<u>20</u>
DR =	<u>0</u>	CSI =	<u>0</u>	OHS =	<u>0</u>		
NFOS =	<u>0</u>	LSI =	<u>0</u>	RA4 =	<u>0</u>		
SHOS =	<u>0</u>	PCF =	<u>0</u>	SZ =	<u>0</u>		
OSI =	<u>0</u>	ENL =	<u>0</u>	DS =	<u>0</u>		

Total of above = 280

cSMS = total 280 * 0.1 = 20

Activity 430 (Higher Regulatory Standards)

432 Elements

432.o RA

RA1 Staffing

RA1 = 25

RA2 IAS accreditation

RA2 = 0

RA3 Inspections

Verified ratio = $\frac{\text{Number of Inspection Records that passed the office review}}{\text{Number of Inspection Records sampled}} = \frac{1}{1} = \underline{1}$

cRA3 = RA3 16 * verified ratio 1 = 16

RA4 Reinspections

Verified ratio = $\frac{\text{Number of Inspection Records that passed the office review}}{\text{Number of Inspection Records sampled}} = \frac{0}{0} = \underline{1}$

cRA4 = RA4 0 * verified ratio 1 = 0

RA5 Off-site storage

RA5 = 5

cRA

cRA = RA1 25 + RA2 0 + cRA3 16 + cRA4 0 + RA5 5 = 46

433 Credit Calculation

c430 = cDL 195 + cFRB 165 + cFDN 0 + cCSI 28 + cLSI 0
 + cPCF 0 + cENL 360 + cBC 78 + cLDP 40 + cMHP 0
 + cCAZ 312.5 + cSHR 65 + cOHS 25 + cSMS 20 + cRA 46
 = 1335

Activity 430

Comments

The County requires compensatory storage at a 1:1 ratio.

Freeboard (FRB) credit is awarded based on all new construction and substantial improvements being elevated to a minimum of 2 feet above the Base Flood Elevation. Specialist used the 2 foot FRB because it was the lowest common denominator.

Utilities are also required to be elevated to the height of the finished flood depending on foundation type. Elevation Certificates in activity 310 were used to validate the 2 foot FRB requirement.

Title 18.25 Definitions - includes language which describes the Protection of Storage Capacity.

BC credit includes the Fuel Gas Code as required by the State Building Code Council.

OHS credit is based on the Technical Review provided by Cristina Martinez.

CAZ credit is based on the Technical Review provided by Wes Shaw.

Activity 440 (Flood Data Maintenance)

442 Elements

442.a AMD#1

AMD1#1: SFHA, corporate limits, streets, and lot boundaries	=	<u>20</u>
AMD2#1: buildings, building outlines, or building footprints	=	<u>26</u>
AMD3#1: floodways or coastal high hazard areas	=	<u>12</u>
AMD4#1: base flood elevations	=	<u>12</u>
AMD5#1: FIRM zone attributes	=	<u>10</u>
AMD6#1: 500-year floodplain elevations or boundaries	=	<u>10</u>
AMD7#1: other natural hazards	=	<u>12</u>
AMD8#1: topographic contour lines	=	<u>10</u>
AMD9#1: floodplain data in the tax assessment data base	=	<u>0</u>
AMD10#1: old FIRMs	=	<u>0</u>
AMD11#1: other regulations	=	<u>8</u>
AMD12#1: natural floodplain functions	=	<u>14</u>
AMD13#1: building elevation data	=	<u>0</u>

$$\text{AMD\#1} = \underline{134}$$

$$\text{rAMD\#1} = \text{aAMD\#1} \frac{77821}{\text{aSFHA}} \frac{22684}{22684} = \underline{1.5}$$

$$\text{Verified ratio} = \frac{\text{Number correct}}{\text{Sample size}} = \frac{10}{10} = \underline{1}$$

$$\text{cAMD\#1} = \text{AMD\#1} \times \text{rAMD\#1} \times \text{Verified ratio} = \underline{201}$$

442.b FM

$$\text{FM} = \underline{0}$$

442.c BMM

BMM1 Benchmarks

$$\text{rBMM1} = \frac{\text{aBMM1}}{\text{aSFHA}} = \frac{0}{22684} = \underline{0.1}$$

$$\text{Verified ratio} = \frac{\text{Number qualifying}}{\text{Sample size}} = \frac{0}{0} = \underline{1}$$

$$\text{cBMM1} = \text{BMM1} \times \text{rBMM1} \times \text{Verified ratio} = \underline{0}$$

BMM2 CORS

$$\text{rBMM2} = \frac{\text{aBMM2}}{\text{aSFHA}} = \frac{77821}{22684} = \underline{1.5}$$

$$\text{cBMM2} = \text{BMM2} \times \text{rBMM2} = \underline{40.5}$$

$$\text{cBMM} = \text{cBMM1} + \text{cBMM2} = \underline{40.5}$$

442.d EDM

$$\text{EDM} = \underline{0}$$

443 Credit Calculation

$$\text{cAMD} = \text{cAMD\#1} + \text{cAMD\#2} + \text{cAMD\#3} = \underline{201}$$

$$\text{c440} = \text{cAMD} + \text{FM} + \text{cBMM} + \text{EDM} = \underline{242}$$

Activity 440

Comments

The County uses digital maps when making decisions about development in the floodplain.

The County is not applying for FM credit at this time.

The County has provided a map for BMM showing they have 3 or more CORS stations within a 30 mile radius of their entire regulated floodplain.

Activity 450 (Stormwater Management)

452 Elements

452.a SMR#1

$$\text{SMR\#1} = \text{SZ\#1} \underline{90} + \text{DS\#1} \underline{175} + \text{LID\#1} \underline{25} + \text{PUB\#1} \underline{20} = \underline{310}$$

$$\text{rSMR\#1} = \text{aSMR\#1} \underline{950} / \text{aW} \underline{999} = \underline{0.95}$$

$$\text{Number of permits that passed the office review} = \underline{5}$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} \frac{5}{5} = \underline{1}$$

$$\text{cSMR\#1} = \text{SMR\#1} \underline{310} * \text{rSMR\#1} \underline{0.95} * \text{Verified ratio} \underline{1} = \underline{294.5}$$

452.b WMP#1

$$\text{WMP1\#1: Plan meets all of the criteria listed in Section 452.b} = \underline{90}$$

$$\text{WMP2\#1: Manage all storms up to and including the 100-year} = \underline{30}$$

$$\text{WMP3\#1: Management of future peak flows and volumes} = \underline{55}$$

$$\text{WMP4\#1: Manage all storms up to & including the 5-day event} = \underline{35}$$

$$\text{WMP5\#1: Natural areas to provide retention or detention} = \underline{0}$$

$$\text{WMP6\#1: Prohibit alteration of existing natural channels} = \underline{0}$$

$$\text{WMP7\#1: Projects must use natural or "soft" approaches} = \underline{0}$$

$$\text{WMP8\#1: Dedicated funding source to implement the plan} = \underline{25}$$

$$\text{WMP\#1} = \text{The total of WMP1\#1 - WMP8\#1} = \underline{235}$$

$$\text{rWMP\#1} = \text{aWMP\#1} \underline{950} / \text{aW} \underline{999} = \underline{0.95}$$

$$\text{cWMP\#1} = \text{WMP\#1} \underline{235} * \text{rWMP\#1} \underline{0.95} * \text{verified ratio for SMR\#1} \underline{1} = \underline{223.25}$$

452.c ESC

$$\text{Number of permits that passed the office review} = \underline{5}$$

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the field check}}{\text{Number of permits sampled}} \frac{5}{5} = \underline{1}$$

$$\text{cESC} = \text{ESC} \underline{30} * \text{verified ratio} \underline{1} = \underline{30}$$

452.d WQ

$$\text{Verified ratio} = \frac{\text{Number of permits that passed the office review}}{\text{Number of permits sampled}} \frac{5}{5} = \underline{1}$$

$$\text{cWQ} = \text{WQ} \underline{20} * \text{verified ratio} \underline{1} = \underline{20}$$

453 Credit Calculation

$$\text{cSMR} = \text{cSMR\#1} \underline{294.5} + \text{cSMR\#2} \underline{0} + \text{cSMR\#3} \underline{0} = \underline{294.5}$$

$$\text{cWMP} = \text{cWMP\#1} \underline{223.25} + \text{cWMP\#2} \underline{0} + \text{cWMP\#3} \underline{0} = \underline{223.25}$$

$$\text{c450} = \text{cSMR} \underline{294.5} + \text{cWMP} \underline{223.25} + \text{cESC} \underline{30} + \text{cWQ} \underline{20} = \underline{568}$$

Activity 450

Comments

Technical Review for SMR & WMP was provided by Dave Carlton.

ESC credit is applied at 30 points because the County requires single family development to provide a grading and temporary erosion sediment control plan prior to issuance of a building permit.

ESC sites were visited while conducting field work and include a single family site at Vickor Road & 457th Avenue E, a failing system at Brookfield Farms #4 which was later enforced on and documented with photographs, a Habitat for Humanity building site at Golden Given Road E & 109th Street E, a site at 133rd Street S & A Street near an RL property, and the Walgreens site near A Street & 121st Street E. Additional ESC and WQ sites were viewed while traveling with County Staff.

REPETITIVE LOSS**Section 501 (Repetitive Loss List)**

Repetitive Loss Category:

	<u>C</u>	<i>[A, B or C]</i>
Number of Properties on the Community's Repetitive Loss List:	<u>40</u>	
Number of Properties that have been mitigated:	<u>11</u>	
Number of unmitigated Properties remaining:	<u>29</u>	
Number of Repetitive Loss Areas:	<u>4</u>	
Number of Properties in the Repetitive Loss Areas (bRLA):	<u>449</u>	

Community : 530138
PIERCE COUNTY, WA

Activity 500

Comments

Pierce County is a Category C RL community with 29 RL structures as of 2013.

Activity 510 (Floodplain Management Planning)

512 Elements

512.a FMP

Step 1: Organize	=	13	Step 6: Set goals	=	2
Step 2: Involve the public	=	<u>71</u>	Step 7: Review possible activities	=	<u>35</u>
Step 3: Coordinate	=	<u>5</u>	Step 8: Draft an action plan	=	<u>45</u>
Step 4: Assess the hazard	=	<u>30</u>	Step 9: Adopt a plan	=	<u>2</u>
Step 5: Assess the problem	=	<u>47</u>	Step 10: Implement, evaluate, revise	=	<u>2</u>

FMP = total for all 10 steps = 252

cFMP = FMP 252 * rFMP 1 = 252

FEMA has approved the plan as a multi-hazard mitigation plan

512.b RLAA

First Occurrence

rRLAA = bAA 0 / bRLA 449 = 0

cRLAA1 = RLAA 0 * rRLAA 0 = 0

Second Occurrence

rRLAA = bAA 0 / bRLA 449 = 0

cRLAA2 = RLAA 0 * rRLAA 0 = 0

Third Occurrence

rRLAA = bAA 0 / bRLA 449 = 0

cRLAA3 = RLAA 0 * rRLAA 0 = 0

cRLAA = cRLAA1 0 + cRLAA2 0 + cRLAA3 0 = 0

512.c NFP

cNFP = NFP1 0 + NFP2 0 = 0

513 Credit Calculation

c510 = cFMP 252 + cRLAA 0 + cNFP 0 = 252

Activity 510

Comments

Technical Review of the Pierce County Rivers Flood Hazard Management Plan dated February 19, 2013 was reviewed and scored by Sherry Harper.

Activity 520 (Acquisition and Relocation)

522 Elements

522.a bAR

Number of properties that pass the office review = 5

$$\text{Verified ratio} = \frac{\text{Number of properties that passed the field check}}{\text{Number of properties sampled}} = \frac{5}{5} = \underline{1}$$

$$\text{cbAR} = \text{bAR} \quad \underline{346} * \text{Verified ratio} \quad \underline{1} = \underline{346}$$

522.b bRL

Number of properties that pass the office review = 5

$$\text{Verified ratio} = \frac{\text{Number of properties that passed the field check}}{\text{Number of properties sampled}} = \frac{5}{5} = \underline{1}$$

$$\text{cbRL} = \text{bRL} \quad \underline{23} * \text{Verified ratio} \quad \underline{1} = \underline{23}$$

522.c bSRL

Number of properties that pass the office review = 1

$$\text{Verified ratio} = \frac{\text{Number of properties that passed the field check}}{\text{Number of properties sampled}} = \frac{1}{1} = \underline{1}$$

$$\text{cbSRL} = \text{bSRL} \quad \underline{1} * \text{Verified ratio} \quad \underline{1} = \underline{1}$$

522.d bCF

Number of properties that pass the office review = 0

$$\text{Verified ratio} = \frac{\text{Number of properties that passed the field check}}{\text{Number of properties sampled}} = \frac{0}{0} = \underline{1}$$

$$\text{cbCF} = \text{bCF} \quad \underline{0} * \text{Verified ratio} \quad \underline{1} = \underline{0}$$

522.e bVZ

Number of properties that pass the office review = 0

$$\text{Verified ratio} = \frac{\text{Number of properties that passed the field check}}{\text{Number of properties sampled}} = \frac{0}{0} = \underline{1}$$

$$\text{cbVZ} = \text{bVZ} \quad \underline{0} * \text{Verified ratio} \quad \underline{1} = \underline{0}$$

Activity 520 (Acquisition and Relocation)

523 Credit Calculation

523.a Option 1

$$c520 = (cbAR \underline{\hspace{2cm}} * 3) + (cbRL \underline{\hspace{2cm}} * 6) + (cbSRL \underline{\hspace{2cm}} * 9) \\
(cbCF \underline{\hspace{2cm}} * 6) + (cbVZ \underline{\hspace{2cm}} * 4.5) = \underline{\hspace{2cm}}$$

523.b Option 2

Step 1 =

$$(cbAR \underline{\hspace{2cm}} 346 + (cbRL \underline{\hspace{2cm}} 23 * 2) + (cbSRL \underline{\hspace{2cm}} 1 * 3) \\
+ (cbCF \underline{\hspace{2cm}} 0 * 2) + (cbVZ \underline{\hspace{2cm}} 0 * 1.5)) \\
1,900 * \underline{\hspace{2cm}} = \underline{\hspace{2cm}} 304 \\
bSF \underline{\hspace{2cm}} 2080 + cbAR \underline{\hspace{2cm}} 346 + cbRL \underline{\hspace{2cm}} 23 + cbSRL \underline{\hspace{2cm}} 1 \\
+ cbCF \underline{\hspace{2cm}} 0 + cbVZ \underline{\hspace{2cm}} 0$$

Step 2

bARSF = 0

Step 2 = ((bARSF 0 * 100) / (bSF 2080 + bARSF 0)) - 30 * 5 = 0

c520 = Step 1 304 + Step 2 0 = 304

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Activity 520

Comments

Based on the spreadsheet provided by the community, Specialist determined the community has the following number of Acquired or Relocated buildings: bAR = 346 bRL=23 bSRL=1 (for a total of 370).

For all of the structures identified, no FMA funding was used to acquire or relocate buildings from the SFHA or the Regulatory Floodplain.

Activity 530 (Flood Protection)

532 Elements

532.a Techniques used

Number of buildings protected by each technique used

TUE Elevation	=	<u>0</u>
TUD Dry floodproofing	=	<u>0</u>
TUW Wet floodproofing	=	<u>0</u>
TUS sewer backup	=	<u>12278</u>
TUB Barrier, levee or floodwall	=	<u>0</u>
TUC Channel modifications, etc.	=	<u>0</u>
TUF Storage facilities	=	<u>0</u>

Number of buildings by technique = 12278

533 Credit Calculation

533.a Option 1

Total number of buildings that qualify (from Excel spreadsheet) = 254

c530 = 2.4 * Total number of buildings that qualify 254 = 160

If total number of buildings that qualify > 67, the Option 1 score is the max of 160.

533.b Option 2

Total protected building score (Σ PB) (from Excel spreadsheet) = _____

c530 = 16 * Σ PB _____ * 100 / bSF _____ = _____

Activity 530

Comments

TUS calculations are based on (268 x 0.2) structures located in the SFHA and (12,010 x 0.1) structures located in the Regulatory Floodplain. Regulatory Floodplain credits are capped at 200 points. Option 1 is used because it results in higher credit. Floodplain Development Regulations outside of the SFHA are documented in activity 430.

Activity 610 (Flood Warning and Response)

612 Elements

612.a FTR#1

$$\text{rFTR\#1} = \text{bFTR\#1} \frac{2080}{2080} / \text{bSF} \frac{2080}{2080} = \frac{1}{1}$$

$$\text{cFTR\#1} = \text{FTR\#1} \frac{75}{75} * \text{rFTR\#1} \frac{1}{1} = \frac{75}{75}$$

612.b EWD#1

$$\text{rEWD\#1} = \text{bEWD\#1} \frac{2080}{2080} / \text{bSF} \frac{2080}{2080} = \frac{1}{1}$$

$$\text{cEWD\#1} = \text{EWD\#1} \frac{65}{65} * \text{rEWD\#1} \frac{1}{1} = \frac{65}{65}$$

612.c FRO#1

$$\text{rFRO\#1} = \text{bFRO\#1} \frac{2080}{2080} / \text{bSF} \frac{2080}{2080} = \frac{1}{1}$$

$$\text{cFRO\#1} = \text{FRO\#1} \frac{45}{45} * \text{rFRO\#1} \frac{1}{1} = \frac{45}{45}$$

612.d CFP

$$\text{CFP1} = \frac{25}{25}$$

$$\text{CFP2} = \frac{0}{0}$$

$$\text{CFP} = \frac{25}{25}$$

612.e SRC

$$\text{SRC} = \frac{25}{25}$$

612.f TRC

$$\text{TRC} = \frac{0}{0}$$

614 Credit Calculation

$$\text{cFTR} = \text{cFTR\#1} \frac{75}{75} + \text{cFTR\#2} \frac{0}{0} + \text{cFTR\#3} \frac{0}{0} = \frac{75}{75}$$

$$\text{cEWD} = \text{cEWD\#1} \frac{65}{65} + \text{cEWD\#2} \frac{0}{0} + \text{cEWD\#3} \frac{0}{0} = \frac{65}{65}$$

$$\text{cFRO} = \text{cFRO\#1} \frac{45}{45} + \text{cFRO\#2} \frac{0}{0} + \text{cFRO\#3} \frac{0}{0} = \frac{45}{45}$$

$$\begin{aligned} \text{c610} &= \text{cFTR} \frac{75}{75} + \text{cEWD} \frac{65}{65} + \text{cFRO} \frac{45}{45} + \text{CFP} \frac{25}{25} \\ &+ \text{SRC} \frac{25}{25} + \text{TRC} \frac{0}{0} = \frac{235}{235} \end{aligned}$$

Activity 610

Comments

Current calculations are based on full coverage of the 2080 structures in the RF.

Activity 630 (Dams)

632 Elements

632.a SDS

$$\text{SDS1} = \underline{\quad 15 \quad}$$

$$\text{SDS2} = \underline{\quad 15 \quad}$$

$$\text{SDS3} = \underline{\quad 15 \quad}$$

$$\text{SDS} = \text{SDS1} \underline{\quad 15 \quad} + \text{SDS2} \underline{\quad 15 \quad} + \text{SDS3} \underline{\quad 15 \quad} = \underline{\quad 45 \quad}$$

632.b DFR#1

$$\text{rDFR\#1} = \text{bDFR\#1} \underline{\quad 0 \quad} / \text{bDF} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

$$\text{cDFR\#1} = \text{DFR\#1} \underline{\quad 0 \quad} * \text{rDFR\#1} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

632.c DFW#1

$$\text{rDFW\#1} = \text{bDFW\#1} \underline{\quad 0 \quad} / \text{bDF} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

$$\text{cDFW\#1} = \text{DFW\#1} \underline{\quad 0 \quad} * \text{rDFW\#1} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

632.d DFO#1

$$\text{rDFO\#1} = \text{bDFO\#1} \underline{\quad 0 \quad} / \text{bDF} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

$$\text{cDFO\#1} = \text{DFO\#1} \underline{\quad 0 \quad} * \text{rDFO\#1} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

632.e DCF

$$\text{DCF1} = \underline{\quad 0 \quad}$$

$$\text{DCF2} = \underline{\quad 0 \quad}$$

$$\text{DCF} = \underline{\quad 0 \quad}$$

634 Credit Calculation

$$\text{cDFR} = \text{cDFR\#1} \underline{\quad 0 \quad} + \text{cDFR\#2} \underline{\quad 0 \quad} + \text{cDFR\#3} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

$$\text{cDFW} = \text{cDFW\#1} \underline{\quad 0 \quad} + \text{cDFW\#2} \underline{\quad 0 \quad} + \text{cDFW\#3} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

$$\text{cDFO} = \text{cDFO\#1} \underline{\quad 0 \quad} + \text{cDFO\#2} \underline{\quad 0 \quad} + \text{cDFO\#3} \underline{\quad 0 \quad} = \underline{\quad 0 \quad}$$

$$\begin{aligned} \text{c630} = \text{SDS} \underline{\quad 45 \quad} + \text{cDFR} \underline{\quad 0 \quad} + \text{cDFW} \underline{\quad 0 \quad} \\ + \text{cDFO} \underline{\quad 0 \quad} + \text{DCF} \underline{\quad 0 \quad} = \underline{\quad 45 \quad} \end{aligned}$$

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Activity 630

Comments

State Dam Safety credit is based on the Washington State UMC sheet attached in activity 230. The community has identified several high-hazard potential dams, provided the inundation maps and the Emergency Action Plans contain the flood threat descriptions.

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720 COMMUNITY CREDIT CALCULATIONS

Calculation Section:

Verified Activity Calculations:

	Credit
c310 <u>86</u> =	<u>86</u>
c320 <u>90</u> =	<u>90</u>
c330 <u>154</u> =	<u>154</u>
c340 <u>25</u> =	<u>25</u>
c350 <u>33</u> =	<u>33</u>
c360 <u>0</u> =	<u>0</u>
c370 <u>0</u> =	<u>0</u>
c410 <u>306</u> x CGA <u>1.07</u> =	<u>327</u>
c420 <u>1056</u> x CGA <u>1.07</u> =	<u>1130</u>
c430 <u>1335</u> x CGA <u>1.07</u> =	<u>1428</u>
c440 <u>242</u> x CGA <u>1.07</u> =	<u>259</u>
c450 <u>568</u> x CGA <u>1.07</u> =	<u>608</u>
c510 <u>252</u> =	<u>252</u>
c520 <u>304</u> =	<u>304</u>
c530 <u>160</u> =	<u>160</u>
c540 <u>0</u> =	<u>0</u>
c610 <u>235</u> =	<u>235</u>
c620 <u>0</u> =	<u>0</u>
c630 <u>45</u> =	<u>45</u>

cT = total of above cT = 5136

Community Classification (from Table 110-1): Class = 2

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Date Report Prepared: _____