Flood Study Review (FSR) Meeting Agenda

Community/Flood Map Project: Story County, Iowa	
Date/Time: July 31, 2012, 2:00 pm CST	**Case No.: 11-07-3609S**
Cooperating Technical Partner: Scott Ralston Iowa Department of Natural Resources Steve Noe and Alicia Williams AMEC Environment and Infrastructure	**Location of Meeting:** Ames City Hall Room 235 515 Clark Ave. Ames, Iowa

Meeting Minutes

Scott Ralston called the meeting to order and made introductions of the IDNR and AMEC staff present then let everyone in attendance introduce themselves.

Stephen Noe presented a PowerPoint which covered the purpose of the Flood Study Review Meeting, an overview of the DFIRM process and where Story County is in that process, what the schedule is for the next steps and an overview of the Map Adoption Process. A copy of the PowerPoint is attached to these minutes at the end.

He then covered an Outreach website created for Story County which shows the changes in the proposed new floodplains versus the effective floodplains. Any areas that attendees wanted to review were zoomed to and discussed. General questions were answered regarding the symbology for the various types of studies. Specific questions were addressed then by zooming in on the website to individual homes and businesses to discuss their status in or outside of the floodplain.

The meeting was adjourned.

Action Items and Follow-Up on Action Items	
1. Revisit the ending of College Creek. Remove any areas that have no defined channel, no defined floodway and is above the one square mile drainage area. a. This area was re-plotted by AMEC and stops just prior to reaching the City of Ames/Story County limit. It is depicted on Panel 1917C0139F. 2. The City asked that the engineering models and the GIS data, including the CSLF data, be uploaded to the website for their records. a. This has been completed and the Engineering Staff notified in an email dated 8/28/12. 3. The City asked that a pdf of the scrolls to be placed on the website for the City as well. a. This pdf has been placed on the website by AMEC. 4. Bob Franke, FEMA Region VII, asked that a disclaimer be placed on the website stipulating that all the data was draft and subject to change. a. This change has been made by AMEC.	
1. Website link for viewing maps: **http://12.23.244.78/IA_Story_Outreach/**	
Total Time:	**1½ hours**

Contact Information:

Flood Hazard Mapping Program

Scott Ralston
IDNR, Floodplain Mapping Coordinator
502 E. 9th Street
Des Moines, Iowa 50319-0034
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scott.ralston@dnr.iowa.gov

AMEC Environment and Infrastructure (contractors)

Stephen Noe, Senior Program Manager
3800 Ezell Rd., Ste. 100, Nashville, TN 37211
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stephen.noe@amec.com

Alicia Williams, GIS Specialist, Project Manager
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Flood Study Review (FSR) Meeting
Story County Iowa PMR
2:00 PM CST, July 31, 2012, Room 235, City Hall, 515 Clark Ave., Ames, IA

Sign In Sheet

Name (PRINT)	Representing	Telephone	E-mail
Alicia Williams	AMEC	615-890-3574	alicia.williams@amec.com
Charlie Kuester	City of Ames Planning Div.	515-239-5400	ckuester@city.ames.ia.us
Stephen Noe	AMEC	615 430 0456	Stephen.noe@amec.com
Scott Ralston	Iowa DNR	515-281-8121	scott.ralston@dnr.iowa.gov
Chris Kahle	Iowa DNR	319-335-1583	chris.kahle@dnr.iowa.gov
DARREN MOON	STORY COUNTY	515-382-7355	dmoon@STORYCOUNTY.com
Bob Franke	FEMA	816.283.7073	bob.franke@fema.dhs.gov
Dave Miller	Iowa State	515-294-2631	djmille@iastate.edu
Steve Osguthorpe	City of Ames	515-239-5181	sosguthorpe@city.ames.ia.us
John Dunn	City of Ames Water	515-239-5150	jdunne@cityofames.org
Leanne Harter	Story County Planning & Development	515-382-7247	lharter@storycounty.com

Flood Study Review (FSR) Meeting
Story County Iowa PMR
2:00 PM CST, July 31, 2012, Room 235, City Hall, 515 Clark Ave., Ames, IA

Sign In Sheet

Name (PRINT)	Representing	Telephone	E-mail
Keith Morgan	Story Co Emergency Management	515-382-7315	kmorgan@storycounty.com
Tracy Warner	City of Ames	515.239-5163	twarner@city.ames.ia.us
Ben McConville	City of Ames	515 239 5162	bmcconville@city.ames.ia.us

NATIONAL FLOOD INSURANCE PROGRAM

STORY COUNTY, IOWA

Flood Study Review (FSR) Meeting
for the Physical Map Revision (PMR)

July 31, 2012

Meeting Agenda

- NFIP & Map Modernization
- Mapping Project Overview
- Determining Your Flood Risk
- Map Adoption Period
- Public Comment Process
- Breakout for Questions

Welcome & Introduction

- FEMA – Region VII
  - Bob Franke – Regional Project Officer
  - Todd Tucker – CCO Coordinator Specialist Mitigation
- Cooperating Technical Partner - CTP
  - Scott Ralston – State Floodplain Mapping Coordinator
- AMEC Environment and Infrastructure (Mapping Contractor)
  - Stephen Noe – Program Manager
  - Alicia Williams – Assistant Project Manager

What is the NFIP?

The NFIP is a Federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding.

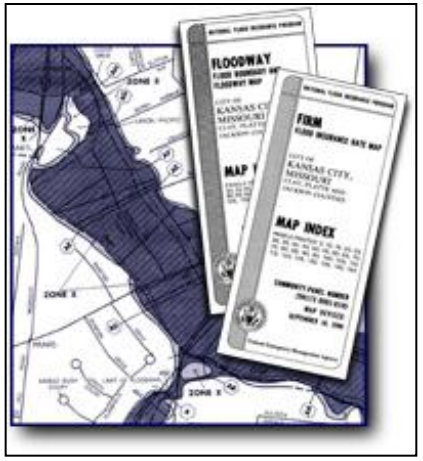
Participation in the NFIP is voluntary based on an agreement between local communities and the federal government that states if a community will adopt and enforce a floodplain management ordinance to reduce future flood risks to new construction, the federal government will make flood insurance available within the community.

NFIP Goals

- Reduce the loss of **life** and **property** caused by flooding
- Reduce rising disaster relief **costs** caused by flooding
- Short range goal is to provide flood **insurance**
- Long range goal is encourage **wise use** of the flood hazard areas.

Accomplishing NFIP Goals

- Publish maps - identify risk
- Educate the public on their own risk
- Provide federally-backed flood insurance coverage
- Encourage development away from flood prone areas



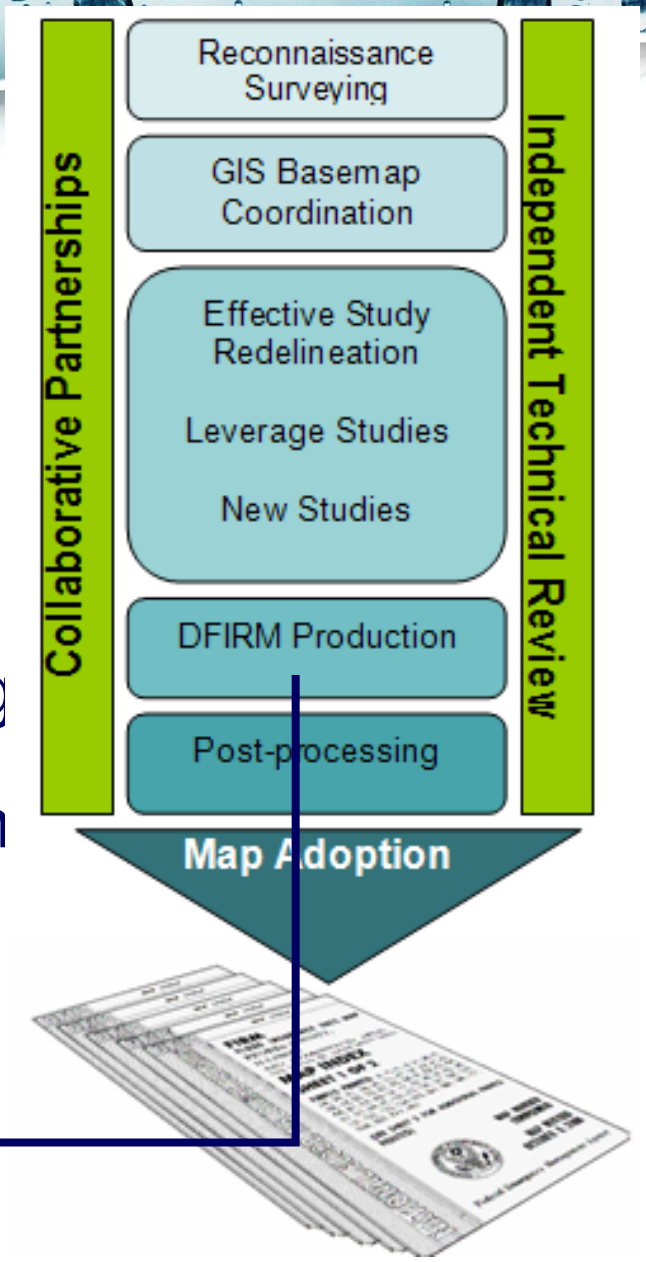
Risk Map Program

- Flood Maps support the National Flood Insurance Program
- 5-Year Congressionally mandated program to modernize FEMA's inventory of flood maps (2003-2008)
- New digital format improved accuracy, made maps easier to use and readily available.
- Current Maps Effective for Story County 2/20/2008
- Flood hazard information is available in GIS format

Physical Map Revision (PMR)

1. Existing DFIRM Countywide
    1. Database and Effective Panels
2. Select Streams Needing Improving
3. Area covers more than one stream but multiple panels
4. Funding to perform PMR

Entering this Phase



Why this PMR?

- FEMA, IDNR and local officials met and discussed needs at 5 specific locations across the state.
- Need were identified, prioritized and funded.
- Asset impacts, leverage data and fiscal year funding prioritized projects.
- North River and Middle Creek were identified, scoped and funded on this PMR.

Tasks of this PMR

- Surveying – bridges, culverts and other critical hydrology and hydraulic structures
- Hydrology – rainfall/runoff and/or gage analysis to incorporate stream specific characteristics
- Hydraulics – use of LiDAR to geometrically shape channels, surveyed conveyance structures for improved accuracy
- Floodplains/floodways - topographically correct floodplains and optimized floodways

Tasks of this PMR - continued

- Federal Register Publication and Post Preliminary Process – must post the limits of change in the Federal Register
- Appeals Period – 90 days
- Appeal Resolution – 30-45 days
- Letter of Final Determination – marks the date that begins the map adoption period – 6 months to effective date
- Effective maps – estimated June 2014 –ordinance needs to be adopted before the effective date


Zone AE

Shaded Zone X
ZONE X
ZONE AE
ZONE A
South Fork Little River
528
Bridge
EAST 18TH ST
EAST 19TH ST
CENTRAL AVE
MAPLE ST
MCKEE ST
HIRAM ST
CENTER ST
WOODMONT
ATHINS AVE
WALNUT ST
VERNON AVE
JESSIE AVE
BRENTWOOD DR
NELSON DR
FORT CAMPBELL BLVD
INDUSTRIAL DR
JAN DR
SKYLINE DR
CALVIN DR
CLARENCE DR
LOVELLA LN
PARKVIEW DR
EAST PARKVIEW DR
TRAIL OF TEARS DR
MOHAWK TRL

Detailed Studies for this PMR - College Creek and Worle Creek

- New Hydrology and Hydraulics
- Mandatory flood insurance in the 1% areas
- No mandatory flood insurance purchase requirements in the 0.2% areas

Rainfall Depth for Story County

Rainfall depths in inches	
Frequency (years)	**24 (Hr)**
1	2.38
2	2.91
5	3.64
10	4.27
25	5.15
50	5.87
100	6.61
200	7.1
500	8.0

FIS Comparison for College Creek

Table 7. FIS Comparison Summary for College Creek

CC-JCT-7 (At mouth; HMS contributing area=3.42 sq mi, FIS=3.3 sq mi.)							
Return Interval	**HEC-HMS**	**USGS Regression (Lara)**	**Difference**	**FIS**	**Difference**	**USGS Regression (Eash)**	**Difference**
(yrs)	**(cfs)**	**(cfs)**	**(%)**	**(cfs)**	**(%)**	**(cfs)**	**(%)**
10	760	230	230	880	-14	1,280	-41
25	1,210	330	267	NA	NA	1,920	-37
50	1,605	400	300	1,380	16	2,420	-34
100	2,035	500	307	1,600	27	2,980	-32
500	3,000	NA	NA	2,100	43	4,480	-33

Table 8. FIS Comparison Summary for Worle Creek

WOR10300J (At City of Ames Corporate Limit; HMS contributing area=12.0 sq mi, FIS=11.9 sq mi.)							
Return Interval	HEC-HMS	USGS Regression (Lara)	Difference	FIS	Difference	USGS Regression (Eash)	Difference
(yrs)	(cfs)	(cfs)	(%)	(cfs)	(%)	(cfs)	(%)
10	1,450	560	159	2,470	-41	2,310	-37
25	2,020	780	159	NA	NA	3,350	-40
50	2,510	930	170	3,780	-34	4,160	-40
100	3,030	1,140	166	4,340	-30	5,040	-40
500	4,040	NA	NA	5,630	-28	7,330	-45
WOR10000X (At mouth; HMS contributing area=16.04 sq mi, FIS=16.7 sq mi)							
Return Interval	HEC-HMS	USGS Regression (Lara)	Difference	FIS	Difference	USGS Regression (Eash)	Difference
(yrs)	(cfs)	(cfs)	(%)	(cfs)	(%)	(cfs)	(%)
10	1,680	680	147	3,080	-45	2,650	-37
25	2,340	960	144	NA	NA	3,810	-39
50	2,910	1,120	160	4,710	-38	4,710	-38
100	3,530	1,380	156	5,410	-35	5,690	-38
500	4,720	NA	NA	7,020	-33	8,210	-43

Table 9. FIS Comparison Summary for Unnamed Tributary to Worle Creek

1WT10000J (At mouth; HMS contributing area=2.2 sq mi, FIS=1.98 sq mi.)							
Return Interval	HEC-HMS	USGS Regression (Lara)	Difference	FIS	Difference	USGS Regression (Eash)	Difference
(yrs)	(cfs)	(cfs)	(%)	(cfs)	(%)	(cfs)	(%)
10	520	170	206	NA	NA	1,060	-51
25	700	250	180	NA	NA	1,600	-56
50	860	310	177	NA	NA	2,040	-58
100	1,010	380	166	884	14	2,520	-60
500	1,330	NA	NA	NA	NA	3,820	-65

Table 11. College Creek HEC-HMS 100-Year Summary Table Compared to USGS Regression Equations, Eash (2001), and Lara (1987)

Hydrologic Element	Area (sq mi)	HEC-HMS (cfs)	USGS (Eash) (cfs)	% Delta	USGS (Lara) (cfs)	% Delta	Average Eash and Lara	% Delta
CC-JCT-1	1.81	390	2,300	-83	330	18	1,315	-70
CC-JCT-2	2.12	755	2,460	-69	370	104	1,415	-47
CC-JCT-3	2.18	785	2,490	-68	380	107	1,435	-45
CC-JCT-4	2.59	1,500	2,670	-44	420	257	1,545	-3
CC-JCT-5	2.91	1,770	2,800	-37	450	293	1,625	9
CC-JCT-6	3.23	1,920	2,930	-34	490	292	1,710	12
CC-JCT-7	3.42	2,035	3,000	-32	500	307	1,750	16

Table 12. HEC-HMS 100-Year Summary Table Compared to USGS Regression Equations, Eash (2001), and Lara (1987)

Hydrologic Element	Area (sq mi)	HEC-HMS (cfs)	USGS (Eash) (cfs)	% Delta	USGS (Lara) (cfs)	% Delta	Average Eash and Lara	% Delta
WOR10800J	2.0	710	2400	-70	360	97	1380	-49
WOR10700J	4.4	1460	3320	-56	590	147	1950	-25
WOR10600J	6.2	1950	3840	-49	740	164	2290	-15
WOR10500J	7.6	2260	4180	-46	850	166	2520	-10
WOR10400J	8.1	2310	4280	-46	880	163	2580	-10
WOR10301J	11.6	3010	4990	-40	1120	169	3050	-1
WOR10300J	12.0	3030	5040	-40	1140	166	3090	-2
WOR10200J	13.0	3170	5210	-39	1200	164	3210	-1
WOR10100J	13.6	3200	5310	-40	1240	158	3270	-2
WOR10001J	15.8	3520	5660	-38	1370	157	3510	0
WOR10000X	16.0	3530	5690	-38	1380	156	3540	0

TABLE 13. Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq.mi)	10 year (cfs)	25 year (cfs)	50 year (cfs)	100 year (cfs)	500 year (cfs)
College Creek						
At mouth	3.42	760	1,210	1,605	2,035	3,000
Approximately 850 feet downstream of State Avenue	2.91	685	1,080	1,430	1,770	2,520
Approximately 2,400 feet upstream of State Avenue	2.18	325	500	650	785	1,100
At South Dakota Avenue	1.81	160	240	310	390	550
Worle Creek						
At mouth	16.0	1,680	2,340	2,910	3,530	4,720
Just downstream confluence with Worle Creek Tributary 1	15.8	1,670	2,330	2,900	3,520	4,700
At South 16th Street	13.6	1,530	2,130	2,640	3,200	4,260
At Elwood Drive	13.0	1,510	2,100	2,620	3,170	4,210
At US Highway 30	12.0	1,450	2,020	2,510	3,030	4,040
Just downstream confluence with Worle Creek Tributary 2	11.6	1,440	2,010	2,490	3,010	4,010
At 510th Avenue	7.6	1,100	1,520	1,880	2,260	2,990
At 500th Avenue	6.2	950	1,310	1,620	1,950	2,560
Worle Creek Tributary 1						
At mouth	2.2	520	700	860	1,010	1,330
At US Highway 30	2.1	500	680	830	980	1,300
Approximately 1400 feet downstream of Elwood Drive	1.7	390	530	650	780	1,030
At Elwood Drive	0.9	230	310	390	460	610
Worle Creek Tributary 2						
At mouth	3.6	400	550	680	810	1,070
Approximately 0.7 mile upstream of confluence with Worle Creek	3.2	360	490	600	720	950
Approximately 900 feet upstream of 510th Avenue	2.9	320	440	540	650	860

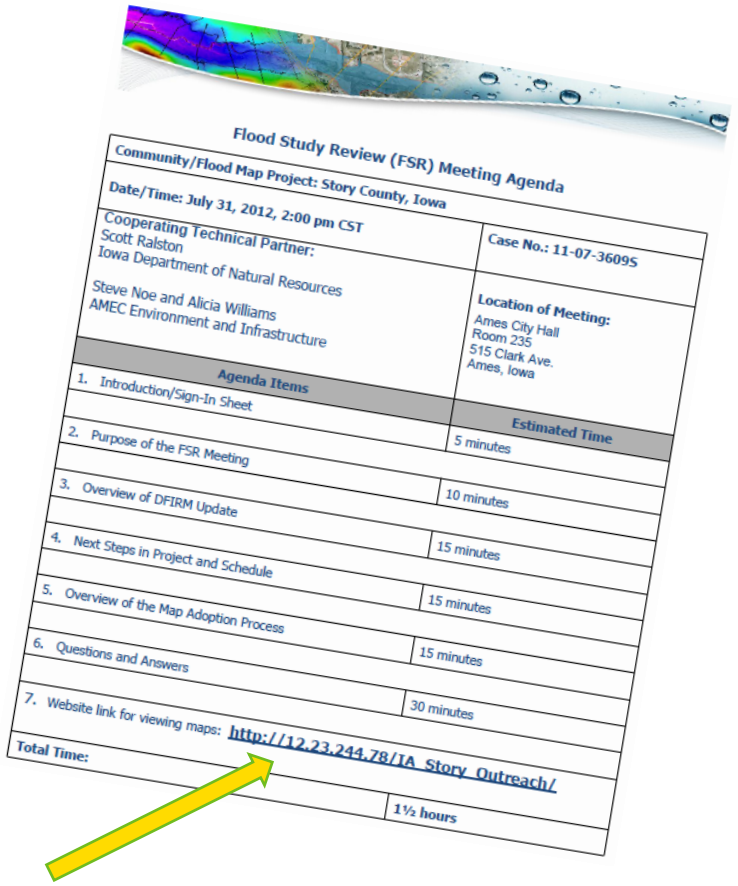
Comparison Maps

http://12.23.244.78/IA_Story_Outreach/

The Light Yellow represents the flood hazard area that is included in both the Effective and Proposed maps

The Light Red represents the flood hazard area that is included in the Proposed but not the Effective Maps

The Light Green represents the flood hazard area that is included in the Effective maps but not the Proposed maps



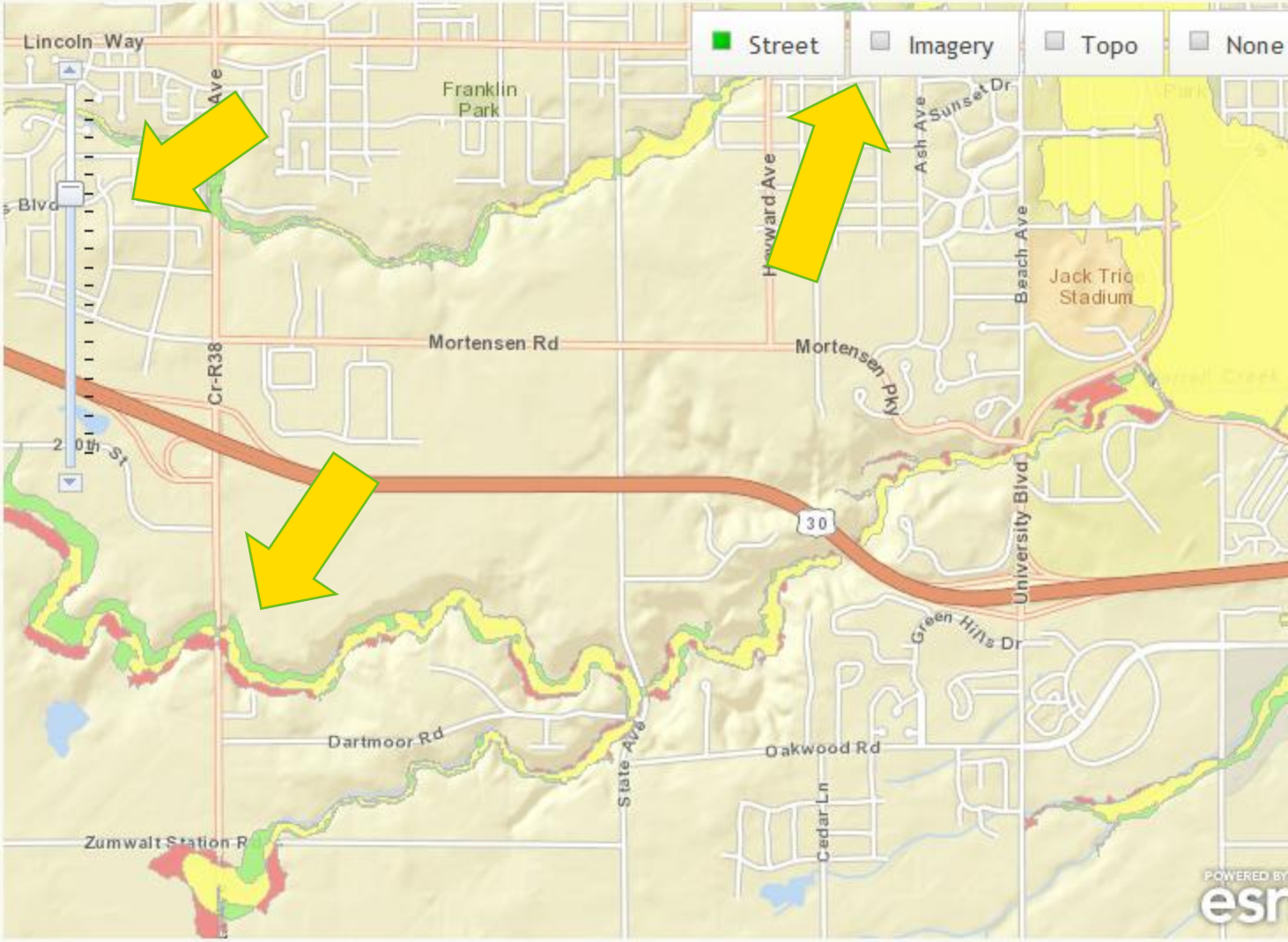
Flood Study Review (FSR) Meeting Agenda

Community/Flood Map Project: Story County, Iowa	
Date/Time: July 31, 2012, 2:00 pm CST	**Case No.: 11-07-36095**
Cooperating Technical Partner: Scott Ralston Iowa Department of Natural Resources	
Steve Noe and Alicia Williams AMEC Environment and Infrastructure	**Location of Meeting:** Ames City Hall Room 235 515 Clark Ave. Ames, Iowa
Agenda Items	**Estimated Time**
1. Introduction/Sign-In Sheet	5 minutes
2. Purpose of the FSR Meeting	10 minutes
3. Overview of DFIRM Update	15 minutes
4. Next Steps in Project and Schedule	15 minutes
5. Overview of the Map Adoption Process	15 minutes
6. Questions and Answers	30 minutes
7. Website link for viewing maps: http://12.23.244.78/IA_Story_Outreach/	
Total Time:	**1½ hours**

AMEC Flood Outreach

AMEC Flood Study Outreach

- DFIRM
- 100yr Comparison
- FWY Comparison



Hydrology | Hydraulics | Flood Study Review

Name

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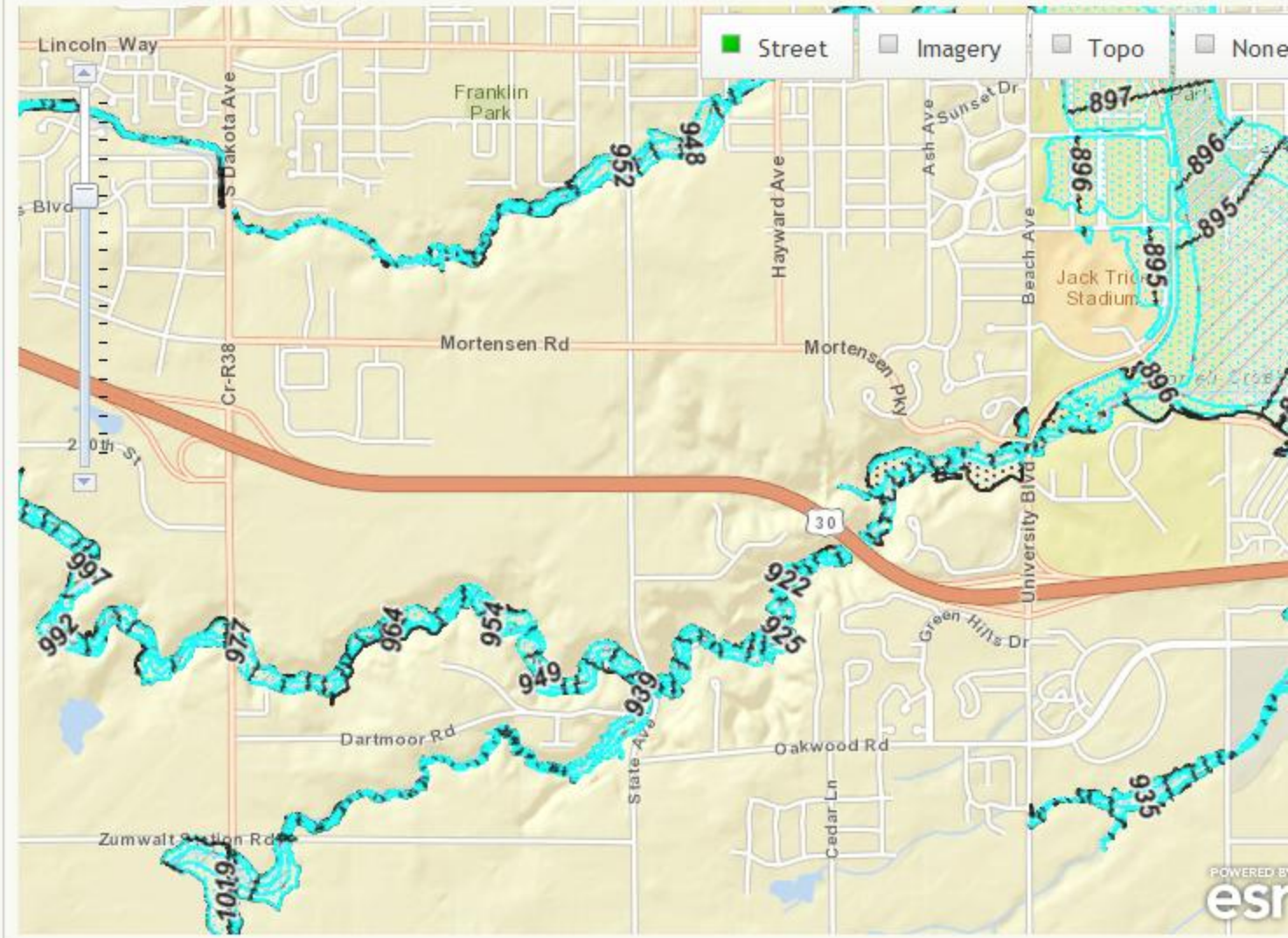

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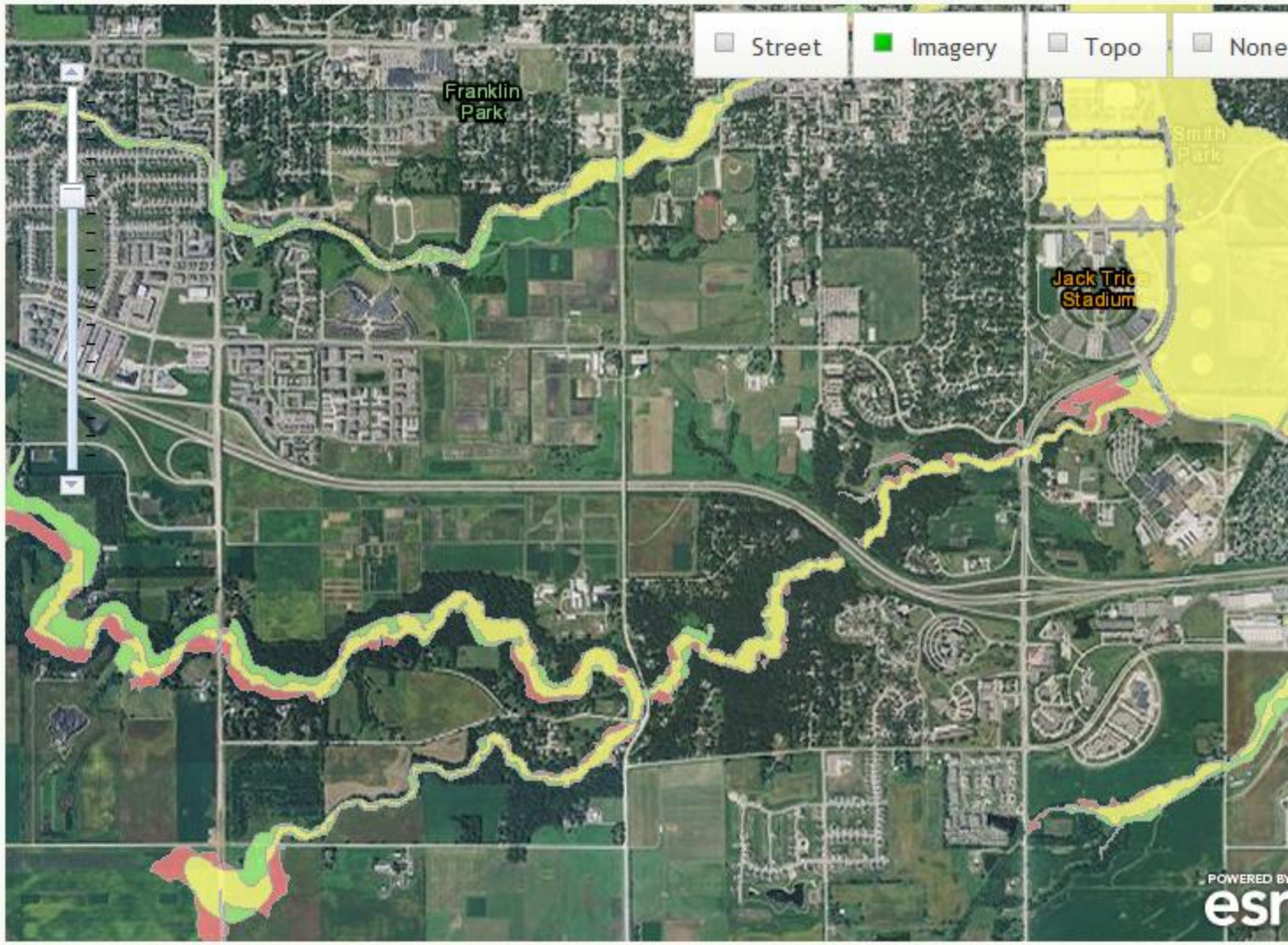

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Questions?