St. Joseph River Watershed Project

September 10, 2015

FEMA

Presentation Outline

- **Overview**
  - Map Mod vs. Risk MAP
  - Discovery
- **Phases/Meetings**
  - Information Exchange
  - Phase 1
  - Phase 2
- **Findings**
  - Flood Study Needs
  - Mitigation Technical Assistance
  - Lessons Learned
- **Status**
- **Up Next…Upper Wabash Watershed Discovery**

Overview: Risk MAP

Map MODERNIZATION
Federal Emergency Management Agency

- Five year effort to modernize maps
- Result: digital flood data and digital maps for 92% of population
- Improved flood data quality
- Limited up-front coordination
- Scoping not mandatory

RiskMAP
Increasing Resilience Together

- Collaborative approach
- Goals: quality data, public awareness, action that reduces risk
- Watershed-oriented
- Focus on up-front coordination
- Discovery is mandatory

Discovery

Discovery is the process of data mining, collection, and analysis with the goal of initiating a flood risk or mitigation project and risk discussions with the watershed

When:

- After an area/watershed has been prioritized
- Before a Risk MAP project is scoped or funded

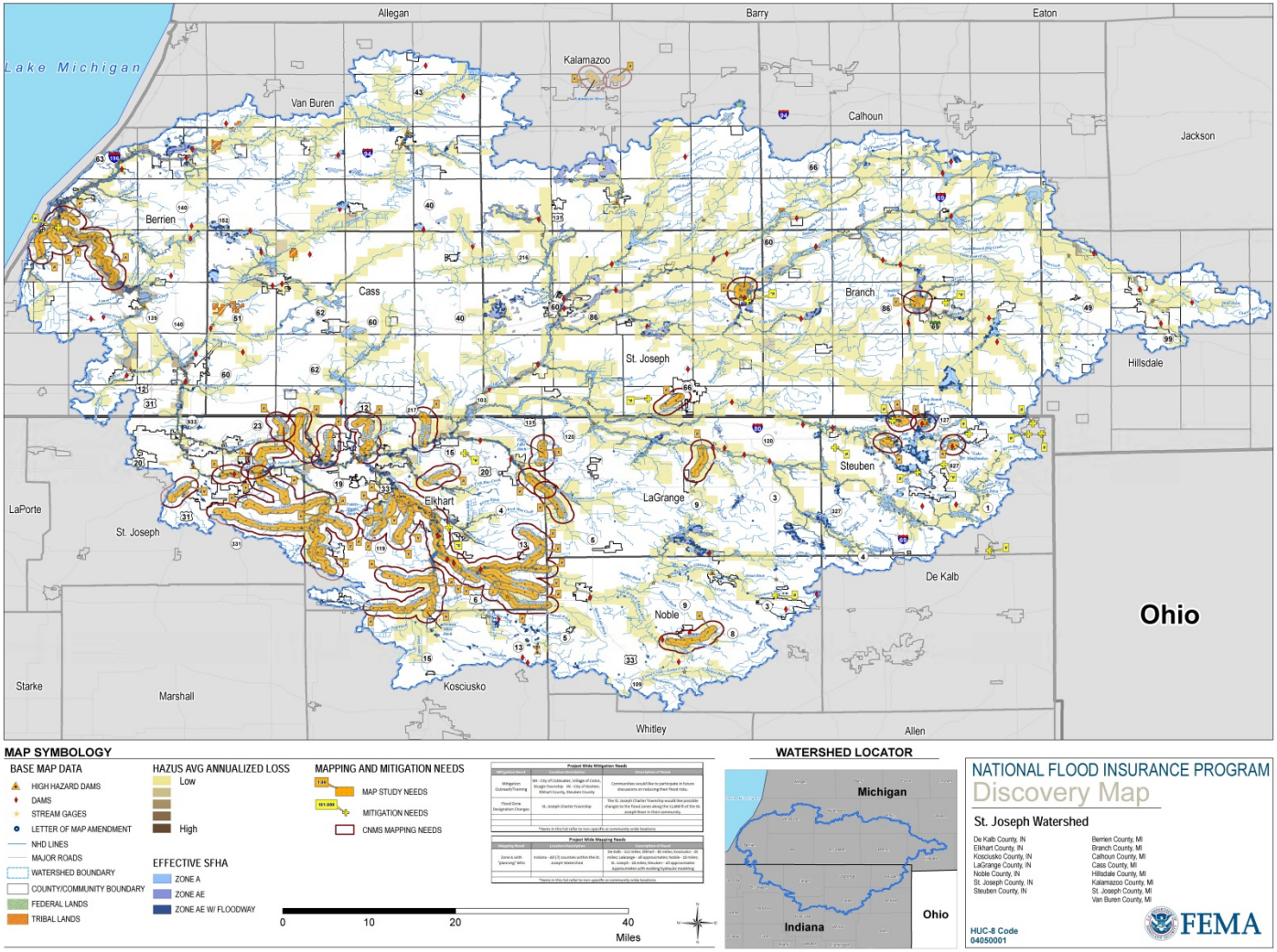
Required for new and updated…

- Flood studies
- Flood risk assessments
- Mitigation planning technical assistance projects

Why:

- Increases visibility of flood risk information, education, involvement
- Helps inform whether a Risk MAP project will occur in the watershed

St. Joseph River Watershed, IN/MI Phased Discovery



- **~ 200 Communities**
  - 7 Indiana Counties
  - 29 Indiana Cities/Towns
  - 161 Michigan Counties/ Cities/ Villages/ Townships

Information Exchange

Information Exchange: Phase 1 Pre-Meeting Stage

- **Webinar(s) to introduce Discovery project**
- **Requested each Community to Fill Out Questionnaire:**
  - **Desired Flood Study Areas**
  - **Existing Local Study Data**
  - **Existing Local GIS Data**
    - **LiDAR**
    - **Orthophotography**
  - **Mitigation Planning Needs**
  - **Desired Mitigation Projects**
  - **Communication and/or Outreach**
  - **Compliance and/or Training**

Sign In							
Community	County (if Different)	State	Information Exchange Call Date (mm/dd/yy)	Name and Title of Local Official Attending Webinar	Name and Title 2 (additional attendee)	Name and Title 3 (additional attendee)	Are there any flooding sources in your community that you feel need a new study or updated mapping? (Yes, No
N/A	Wyandot County	Ohio	8/19/2014	Greg Moon - Director, Wyandot County Regional Planning Commission			Possibly
Marion		Ohio	8/19/2014	Danny Stewart, Assistant Director, Marion County Planning	Elizabeth Burns, GIS Director		Yes
Delaware County		Ohio	8/21/2014	Duane B. Matlack Floodplain Administrator			Yes
Fairfield County		OH	8/21/2014	James Mako/Senior Planner			Yes
Franklin County		OH	8/21/2014	Matt Brown, Planning Administrator			Yes
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Franklin County		OH	8/21/2014	Matt Brown, Planning Administrator			Yes

Effective method for initially gathering needs in watershed with nearly 200 communities

St. Joseph River Watershed, IN/MI Discovery – Phase 1

- **Federal and State Data Collection**
- **Information Exchange: November 24 – December 4, 2014**
- **In-Person Discovery Meetings: January 14 & January 15, 2015**
  - Areas of Concern or Restudy Identified
  - Flood Study Needs Focused
  - Individual Community Breakout Sessions
- **Flood Study Needs added to Draft Discovery Report and Map(s)**

St. Joseph River Watershed, IN/MI Discovery – Phase 2

- **Individual or Group Meetings**
  - ~70 Communities selected following Phase 1
- **Phase 2 Meetings: April, May, June & July 2015**
  - Areas of Mitigation Interest/Concern Identified
  - Mitigation Action/Technical Assistance Needs Focused
- **Mitigation Action/Technical Assistance Needs Added to Discovery Report and Map(s)**

Findings – Flood Study Needs

- **~ 130 Flood Study Needs Gathered (total)**
- **Flood Study Needs Prioritized using a Ranking System**
  - Needs Evaluated Based on Mapping Parameters, such as:
    - Average Annualized Loss (AAL) Level (high/medium/low)
    - Coordinated Needs Management Strategy (valid/unverified/to be assessed)
    - Local/State Mapping Need (yes/no)
    - Leverage Data Available (yes/no)
    - Area of Mitigation Interest (yes/no)
  - Needs receive a ranking, or total score, between 0 and 10:
    - 0-4 points = Low Priority
    - 5-7 points = Medium Priority
    - 8-10 points = High Priority

Findings – Mitigation Technical Support

- **~ 120 Mitigation Technical Support Needs Gathered**
- **Mitigation Needs Prioritized Using a Different Ranking System**
  - Needs are Evaluated Based on Mitigation Parameters, such as:
    - Same geographic location as mapping need (yes/no)
    - Likelihood Action will be Advanced (high/medium/low)
    - Inside regulated floodplain (yes/no)
    - Critical facility involved (yes/no)
    - Community Has Current Hazard Mitigation Plan (yes/no)
    - Is the Technical Assistance a Non-Regulatory FEMA Product (yes/no)
    - Flood Hazard Related Need (yes/no)
  - Needs receive a ranking, or total score, between 0 and 10:
    - 0-3 points = Low Priority
    - 4-6 points = Medium Priority
    - 7-10 points = High Priority

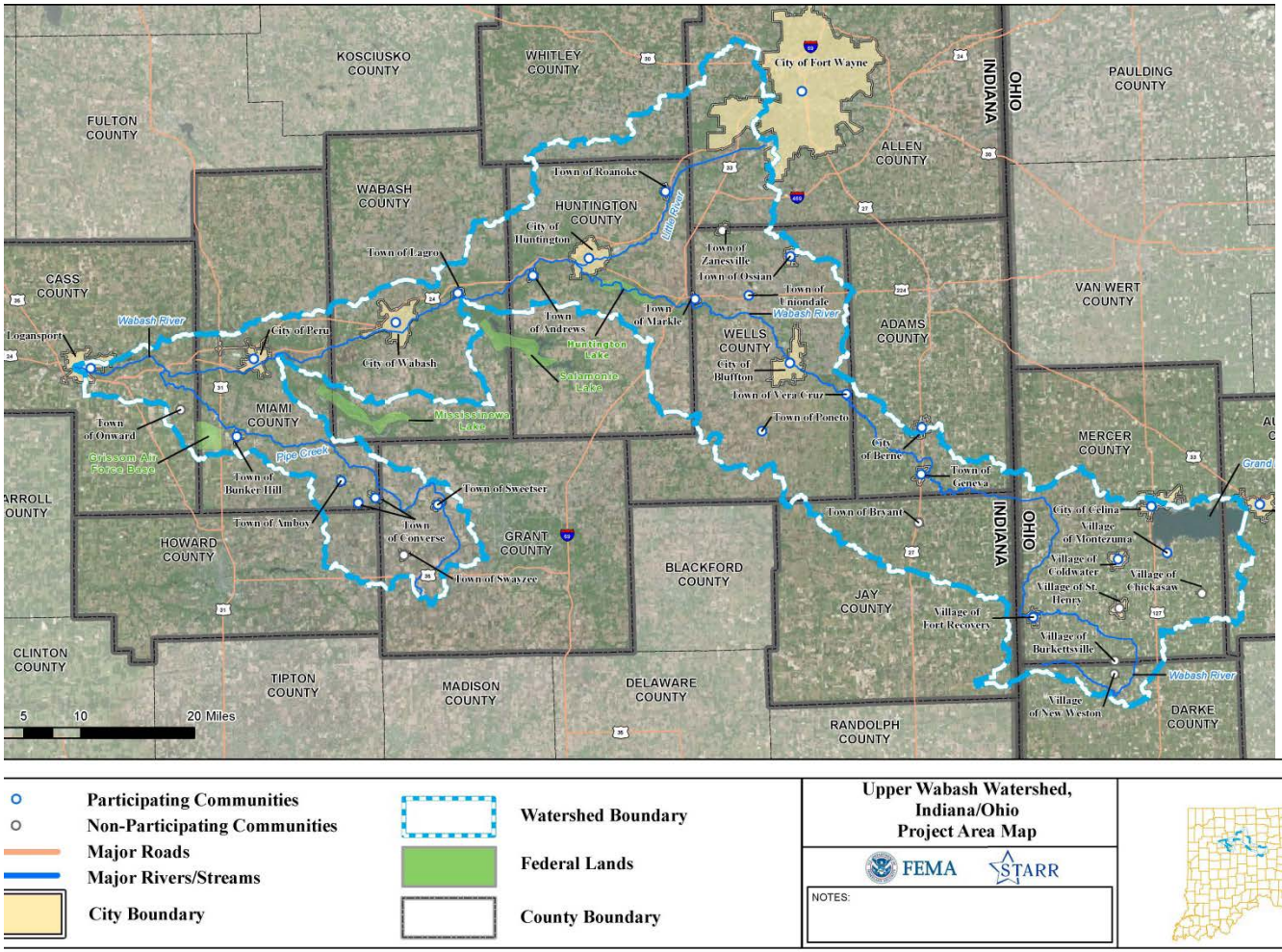
Findings – Lessons Learned

- **Communication is Key!**
  - Successful First Contact with Communities often times increased their chances/level of participation
- **Emails sent to "undisclosed recipients" often times are blocked by email firewalls**
  - Back-up method for invitations and other project communications
- **Discovery Phase 2 and the Hazard Mitigation Planning Process contain similarities**
  - Why is it beneficial for Communities to participate in both?

Status

- **Flood Study & Mitigation Technical Support Needs Prioritized in Discovery Report and Maps**
- **Recommendations for Future Risk MAP project in St. Joseph River Watershed (if funded):**
  - High and Medium Priority Flood Study Needs (scored 4 or more points)
  - High Priority Mitigation Technical Support Needs (scored 7 or more points)
- **FEMA Region V and States Review Draft Discovery Report and Maps in September**
- **Communities Review Period in October**
- **Discovery Report and Maps Distributed to Stakeholders by October 30, 2015**

Upper Wabash Watershed, IN/OH Phased Discovery



- **47 Communities**
  - 11 Indiana Counties
  - 25 Indiana Cities/Towns
  - 11 Ohio Counties/ Cities/ Villages

Upper Wabash Watershed, IN/OH Discovery – Phase 1

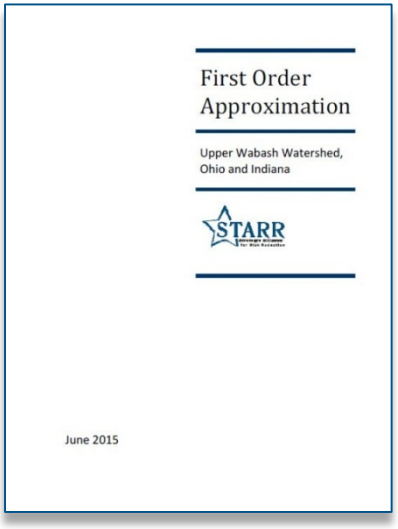
- **Pre-Meeting Phase 1 Webinars**
  - Wednesday, September 2, 2015 (x2) and Thursday, September 3, 2015.
    - Around 20 participants per webinar
- **Phase 1 Meetings – Tentative Schedule:**
  - Wednesday, November 4, 2015:
    - City of Wabash, IN
    - City of Huntington, IN
  - Thursday, November 5, 2015:
    - City of Bluffton, IN
    - City of Celina, OH

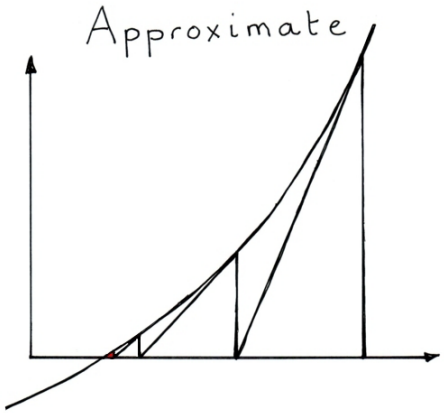
Upper Wabash Watershed, IN/OH Discovery – Phase 2

- **Group Phase 2 Meetings**
  - 25 communities will be selected and invited to participate
- **Phase 2 Meetings: TBD in 2016**
  - Areas of Mitigation Interest/Concern Identified
  - Mitigation Action/Technical Assistance Needs Focused
- **Mitigation Action/Technical Assistance Needs Will Be Recorded in the Discovery Report and Map(s)**

First Order Approximation (FOA)

- **Conduct a First Order Approximation (FOA) of 129 miles of streams within Upper Wabash Watershed**
  - Zone A streams categorized in Coordinated Needs Management Strategy (CNMS) as “Invalid” or “Unknown”
- **Assesses the quality and relevance of an effective study**
- **Determines if significant changes are likely to result from a future improvement to a flood study**
- **Used LiDAR from the Indiana and Ohio Statewide Imagery and LiDAR Programs**





First Order Approximation (FOA)

					Flow (CFS) percent annual chance			FBS Validation		
Stream ID Number	Name	CNMS Reach ID	Drainage Area (sq mi)	Miles	1%	1%+	1%-	Risk Calls	Percent Passing	Results
1	Aboite Creek	180690100001	52.45	1.09	1462	2040	1048	C	67.92	FAIL
2	Eightmile Creek	180690100002	80.51	2.17	3398	4741	2436	C	38.15	FAIL
3	Flat Creek	180690100003	27.88	3.56	1569	2188	1125	C	29.09	FAIL
4	Mud Creek	180690100004	5.69	1.49	521	727	374	C	86.52	PASS
5	Loon Creek	180690100005	22.28	1.86	1343	1874	963	C	58.27	FAIL
6	Unger Ditch	181690100001	3.73	1.73	1264	1825	876	C	NA	NA
7	Potter Ditch	180530100002	5.61	0.40	798	977	652	C	59.09	FAIL
8	UNT Loon Creek (Huntington #2)	180690100007	2.37	1.23	186	260	133	C	58.27	FAIL
9	Johnson Ditch	181790100002	10.99	1.27	671	936	481	C	86.15	PASS
10	Wilson Creek	180750100006	4.01	1.60	360	502	258	C	62.20	FAIL
11	East Prong Franks Drain	180750100007	2.35	1.11	146	204	105	C	26.85	FAIL
12	UNT Treaty Creek (Wabash #7)	181690100007	3.62	1.48	758	1094	525	C	64.38	FAIL
13	Ross Run	181690100009	4.55	3.84	975	1407	676	C	55.38	FAIL
14	Sullivan Ditch	180010100013	2.25	2.14	200	279	143	C	46.79	FAIL
15	Jamstutz Ditch	180010100024	0.97	2.51	106	148	76	C	NA	NA
16	Engle Ditch	180010100035	6.10	4.44	252	352	181	C	68.18	FAIL
17	UNT Threemile Creek	180010100036	4.01	0.03	308	430	221	C	58.52	FAIL
18	Threemile Creek	180010100037	10.67	3.04	670	934	480	C	58.52	FAIL
19	Squaw Creek	180030100105	2.16	1.16	89	124	64	C	86.05	PASS
20	Pleasant Run Ditch	180030100112	4.11	3.02	187	261	134	C	38.15	FAIL
21	Witzgall Ditch	180030100119	4.75	1.35	435	607	312	C	38.15	FAIL
22	Graham McCulloch Ditch #4	180030100123	4.33	2.81	303	423	217	C	45.15	FAIL
23	Little River	180030100124	1.42	1.02	119	166	85	C	45.15	FAIL

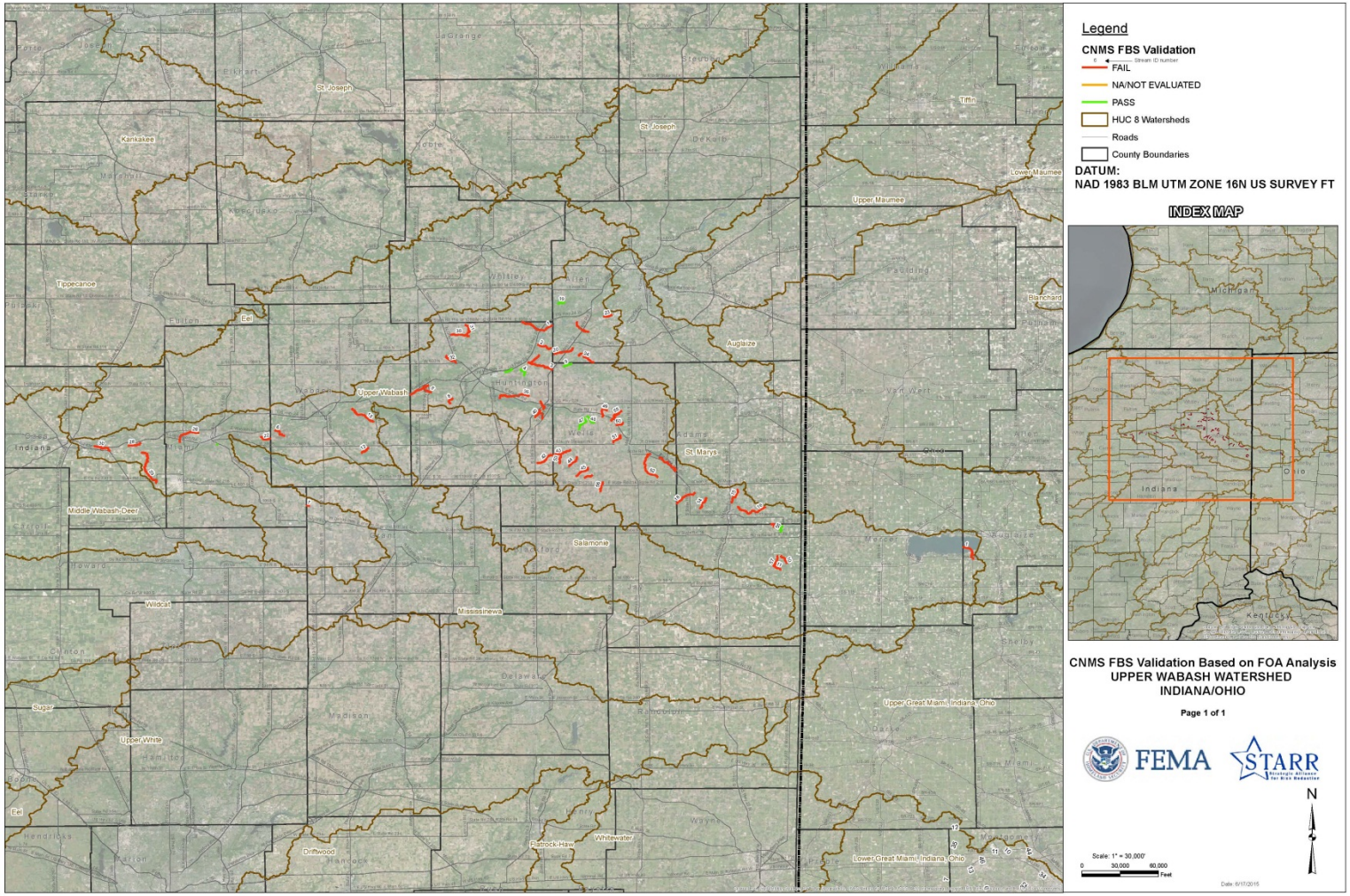
First Order Approximation (FOA)

					Flow (CFS) percent annual chance			FBS Validation		
Stream ID Number	Name	CNMS Reach ID	Drainage Area (sq mi)	Miles	1%	1%+	1%-	Risk Calls	Percent Passing	Results
24	Johnson Ditch	180030100126	4.38	1.75	312	435	223	C	62.14	FAIL
25	UNT Schoolman Ditch	181030100009	1.14	0.17	228	320	162	C	100.00	PASS
26	Prairie Ditch	181030100011	13.73	3.34	1628	2349	1128	C	NA	NA
27	Asher Branch	181030100013	7.75	1.36	1303	1838	927	C	47.47	FAIL
28	Bear Creek	180170100002	192.24	1.84	10496	12869	8563	C	50.00	FAIL
29	Little Deer Creek	180170100003	185.45	6.94	9983	12226	8152	C	38.46	FAIL
30	Minnow Creek	180170100004	6.30	2.58	1597	2265	1128	C	66.39	FAIL
31	West Branch Clear Creek	180690100022	6.09	1.89	405	565	290	C	52.08	FAIL
32	UNT Clear Creek (Huntington #2)	180690100023	5.05	2.56	406	567	291	C	51.69	FAIL
33	UNT Little River (Huntington #2)	180690100024	2.32	1.15	202	282	145	C	86.52	PASS
34	UNT Flat Creek (Huntington #1)	180690100025	2.24	1.64	144	201	103	C	24.12	FAIL
35	Tah Kun Wah Creek	180690100026	5.26	4.36	397	554	285	C	45.02	FAIL
36	Rock Creek	180690100027	92.64	1.42	4468	6233	3203	C	50.95	FAIL
37	UNT Wabash River (Huntington #5)	180690100028	4.72	1.85	299	417	214	C	34.48	FAIL
38	Brown Ditch	180690100032	16.99	2.43	1019	1421	730	C	52.08	FAIL
39	Calf Creek	180690100034	8.18	3.51	533	744	382	C	54.17	FAIL
40	Elkenberry Ditch	180690100035	102.97	1.45	4809	6708	3447	C	50.95	FAIL
41	Wabash River	180690100037	1115.56	2.65	23936	33369	17171	C	36.55	FAIL
42	Palmer Ditch	180690100038	11.16	2.54	742	1034	532	C	56.49	FAIL
43	Palmer Ditch	181790100012	16.19	2.37	1029	1435	738	C	56.49	FAIL
44	Merriman Ditch	181790100014	4.92	2.08	402	561	288	C	71.13	FAIL
45	Stites Ditch	181790100015	4.80	2.23	363	507	260	C	81.13	FAIL
46	Jamison Ditch	181790100016	3.57	1.16	301	420	216	C	41.43	FAIL

First Order Approximation (FOA)

					Flow (CFS) percent annual chance			FBS Validation		
Stream ID Number	Name	CNMS Reach ID	Drainage Area (sq mi)	Miles	1%	1%+	1%-	Risk Calls	Percent Passing	Results
47	Lesh Ditch	181790100018	5.61	2.65	365	510	262	C	87.88	PASS
48	Bender Ditch	181790100019	4.87	1.61	312	435	223	C	87.88	PASS
49	Flemming Ditch	181790100020	2.05	1.91	233	324	167	C	61.76	FAIL
50	UNT Wabash River (Wells #2)	181790100021	1.39	1.10	134	187	96	C	63.53	FAIL
51	Halls Creek	181790100022	10.48	2.24	752	1049	539	C	63.53	FAIL
52	Sixmile Creek	181790100025	31.62	4.95	1804	2517	1293	C	38.83	FAIL
53	Clark Ditch	181790100027	3.13	1.76	289	403	207	C	75.86	FAIL
54	Wabash River	181790100028	460.40	3.61	9923	13818	7128	C	80.65	FAIL
55	Dowty Ditch	181790100030	7.04	3.08	439	612	314	C	69.70	FAIL
56	Elm Creek	181790100031	14.12	1.80	960	1339	688	C	81.52	FAIL
57	West Prong Franks Drain	180750100022	9.49	1.87	567	791	406	C	26.85	FAIL
58	UNT Wabash River (Jay #1)	180750100023	4.26	1.21	450	628	323	C	94.74	PASS
59	Goss Switzer Ditch	180750100025	4.59	0.87	415	579	298	C	53.33	FAIL
60	Barnes Creek	390110100055	6.32	3.01	327	450	237	C	52.94	FAIL

First Order Approximation (FOA)



Questions?

- **Presenters:**
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  - Emily Whitehead, emily.whitehead@stantec.com