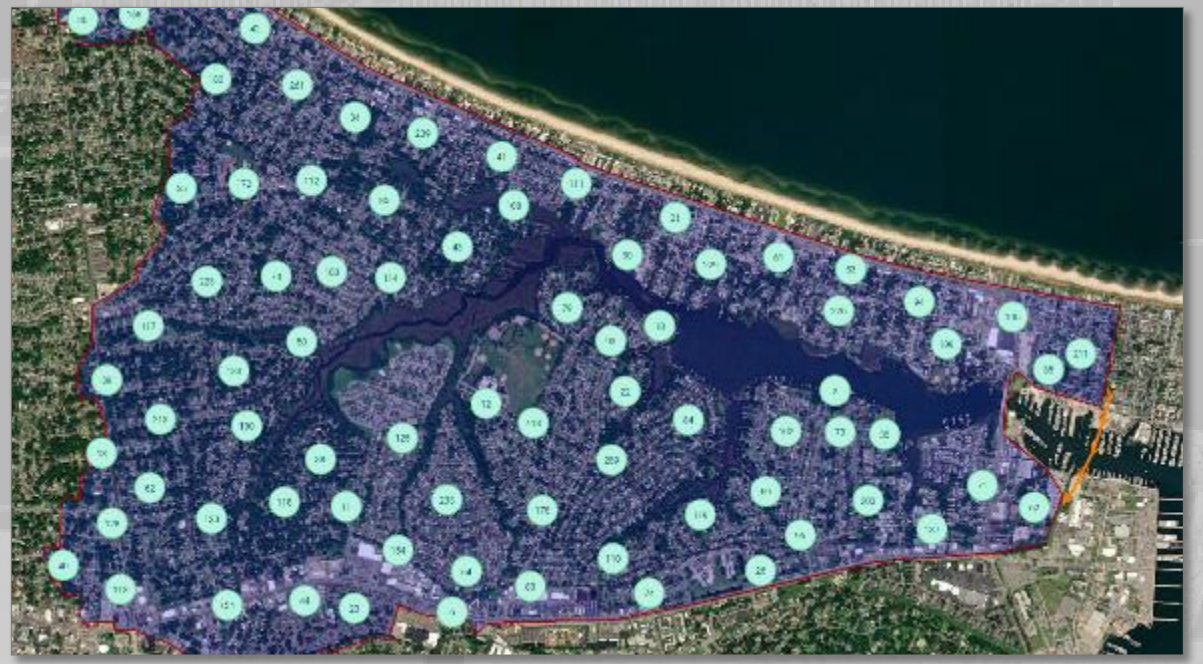
LIFE SAFETY RISK INDICATOR & THE RAPID FRAMEWORK



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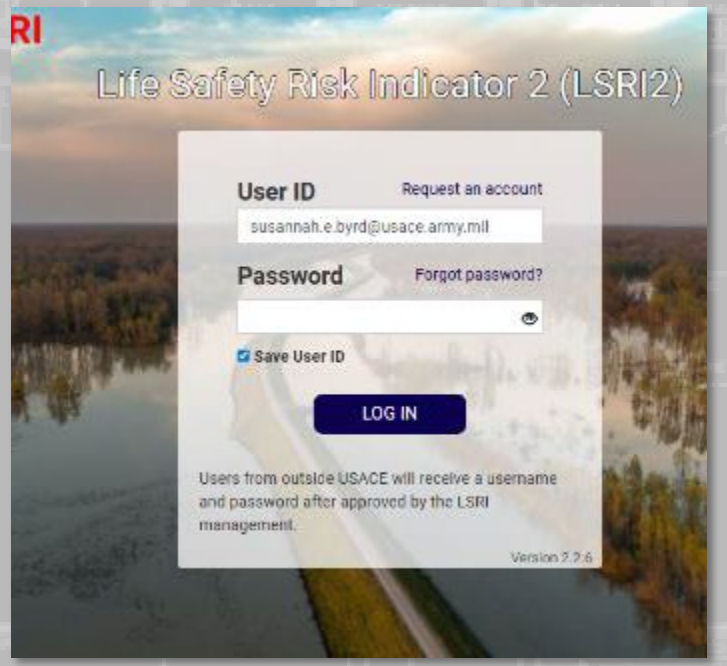
FRM PCX | RMC
LSRI Planning Lead

June 2026



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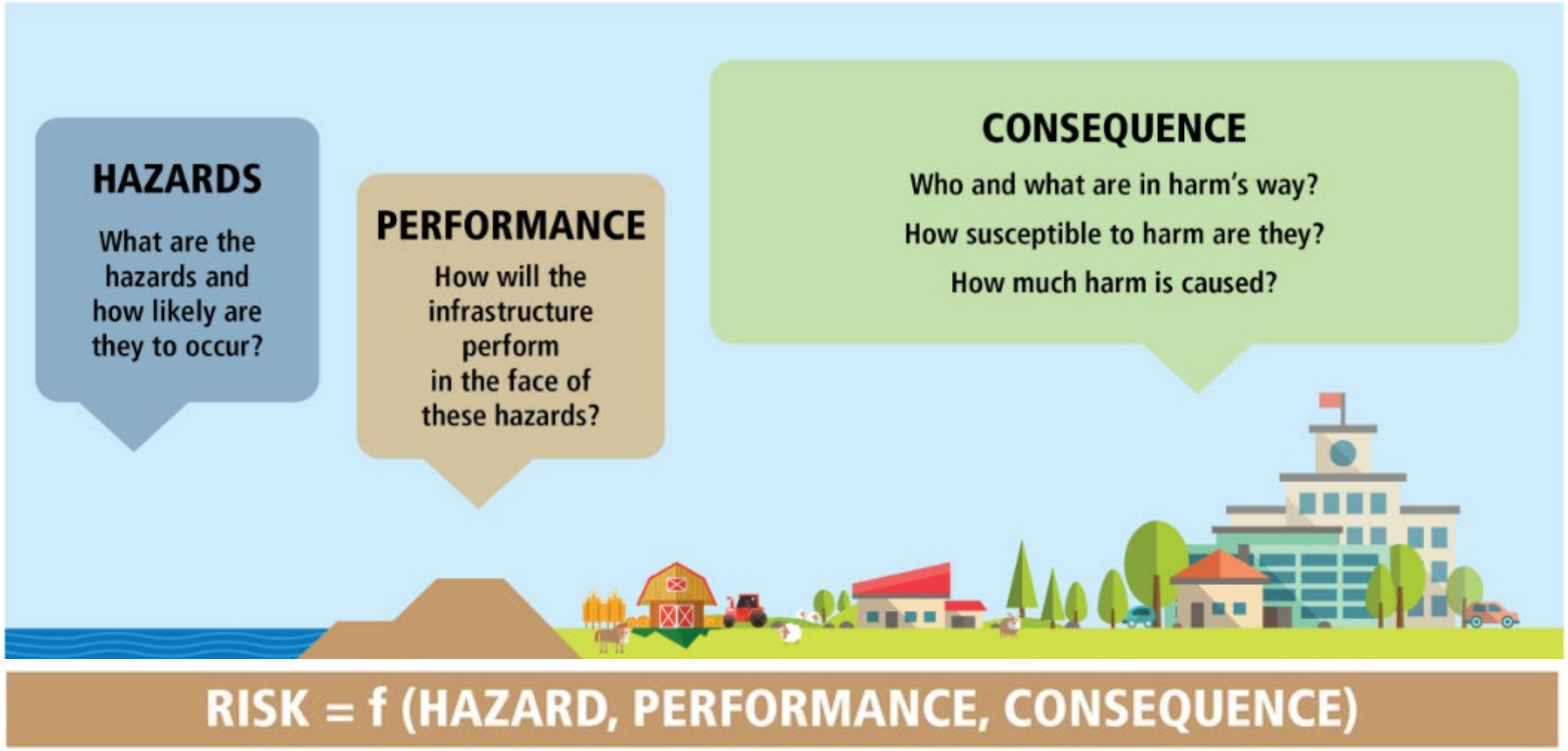
RISK AND THE LSRI



Problem Statement:

What is the lowest level-of-effort that can be applied to generate credible risk results?

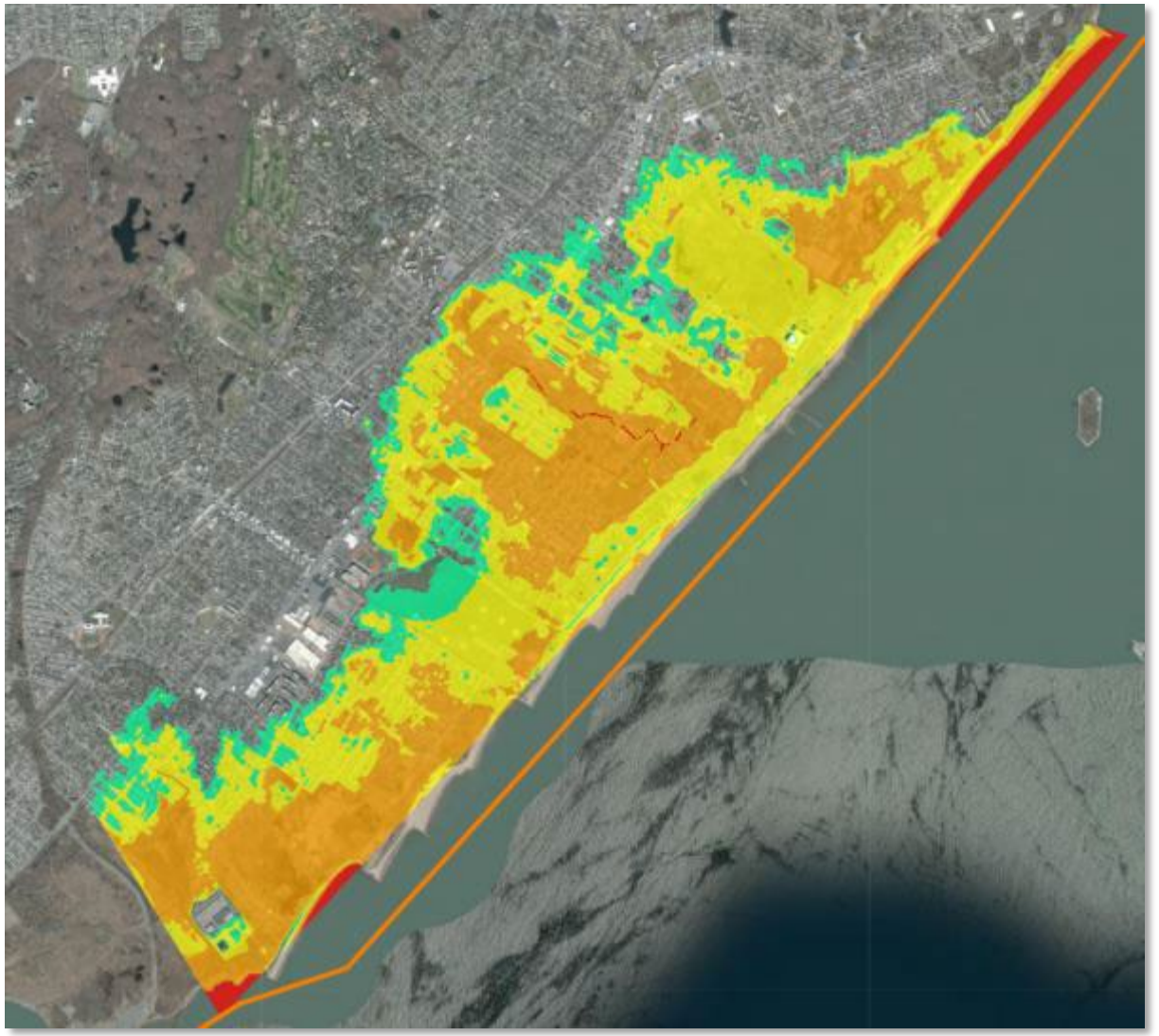
WHAT IS THE LSRI?

Purpose: Efficient methodology to answer the question:
How much will a proposed measure reduce risk to life and property?

LSRI: A web-based application utilizing cloud computing for risk analysis that employs state-of-the art methods and tools.

HEC-RAS

LifeSim

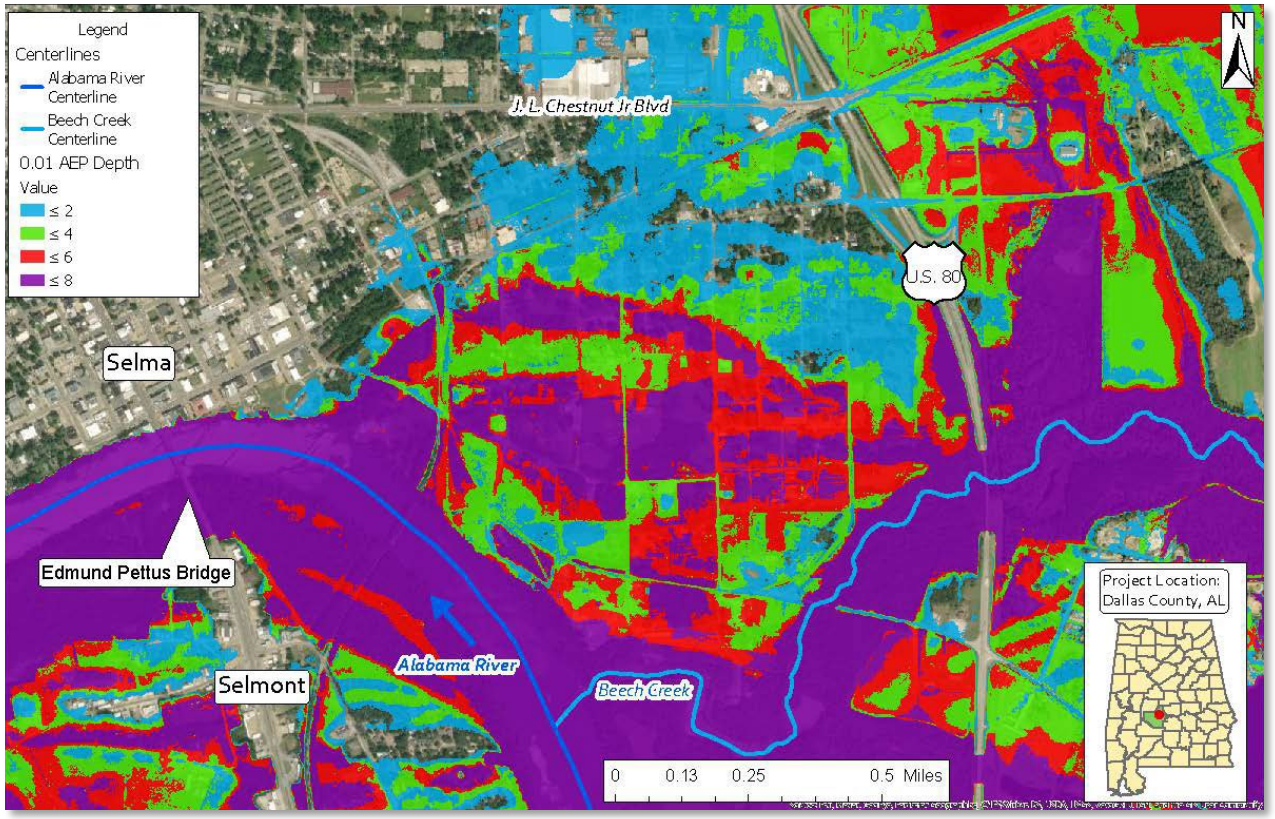


Part of a suite of web-based screening tools including the Levee Screening Tool and Dam Screening Tool

RIVERINE APPLICATION EXAMPLE – SELMA, AL

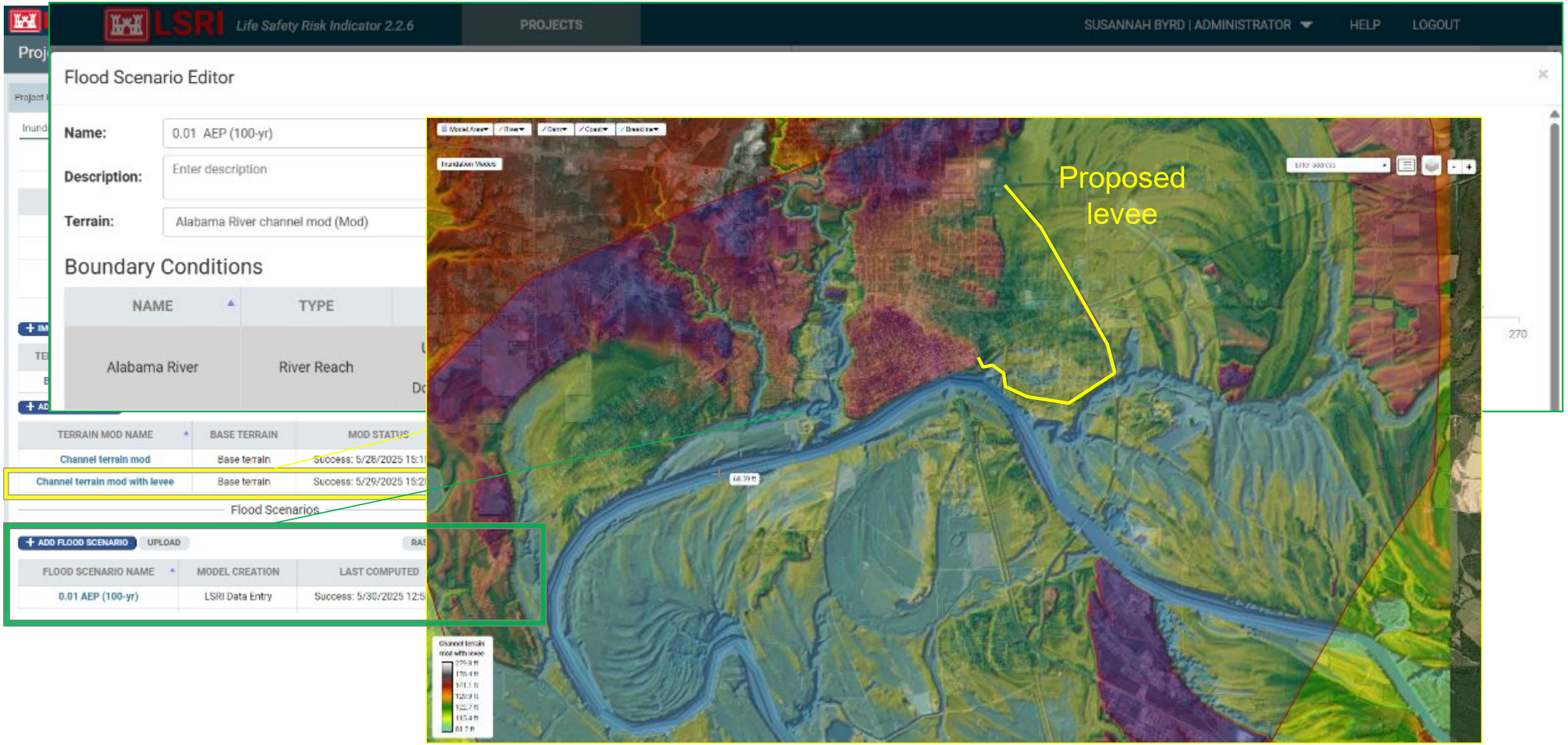
Risk management alternatives:

- Existing condition
- New levee



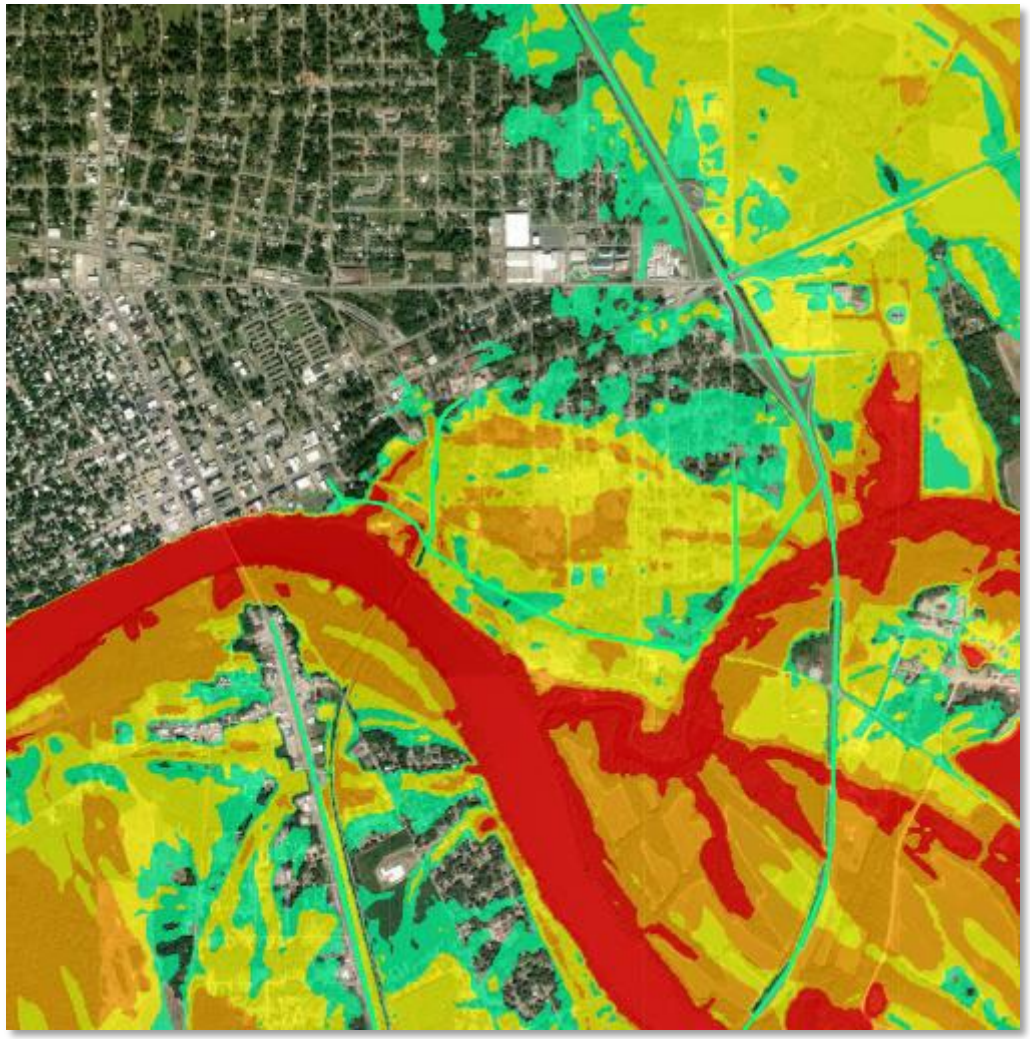
Using the LSRI, how quickly can we get from no data to screening level inundation, consequences, and risk?

PROJECT SETUP

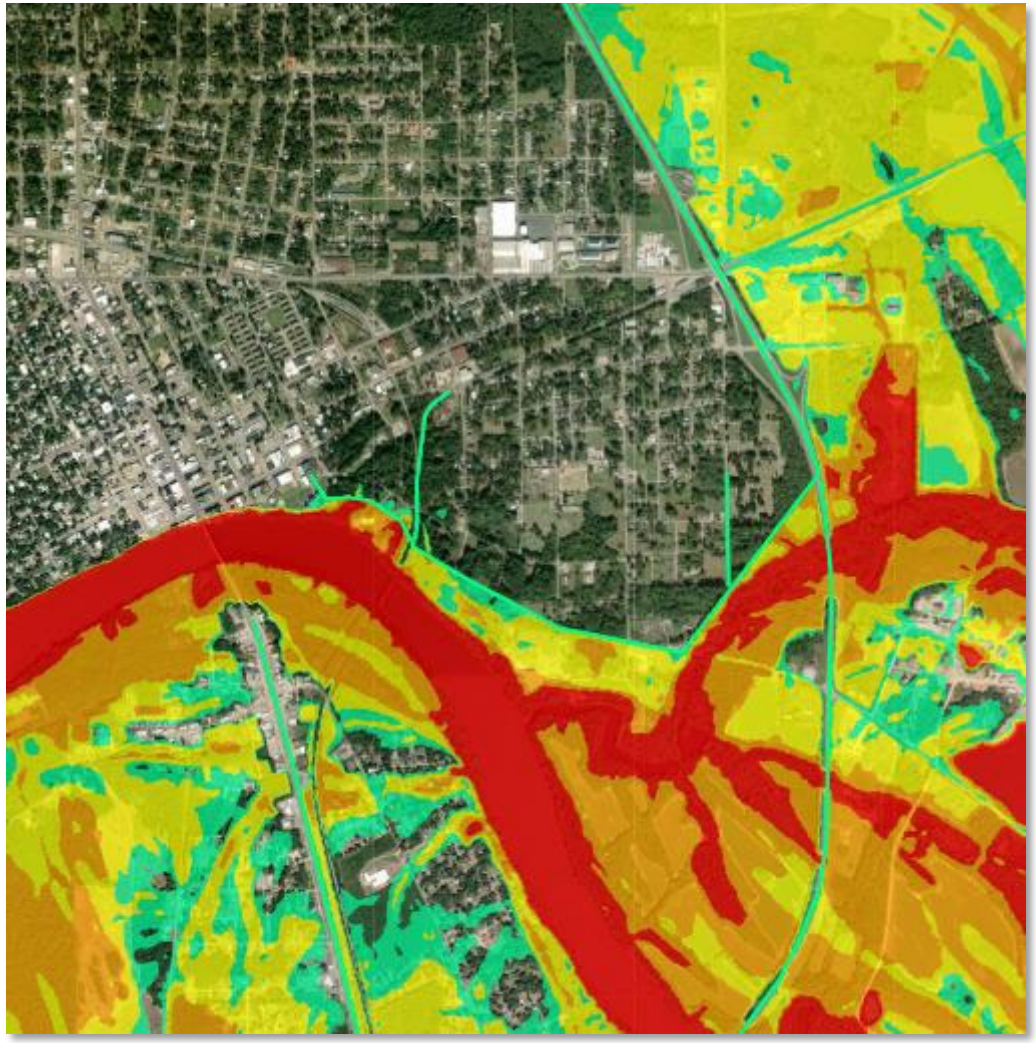


ADD FLOOD SCENARIO AND RUN HEC-RAS FOR PROPOSED LEVEE SCENARIO (0.01 AEP EVENT)

FWOP

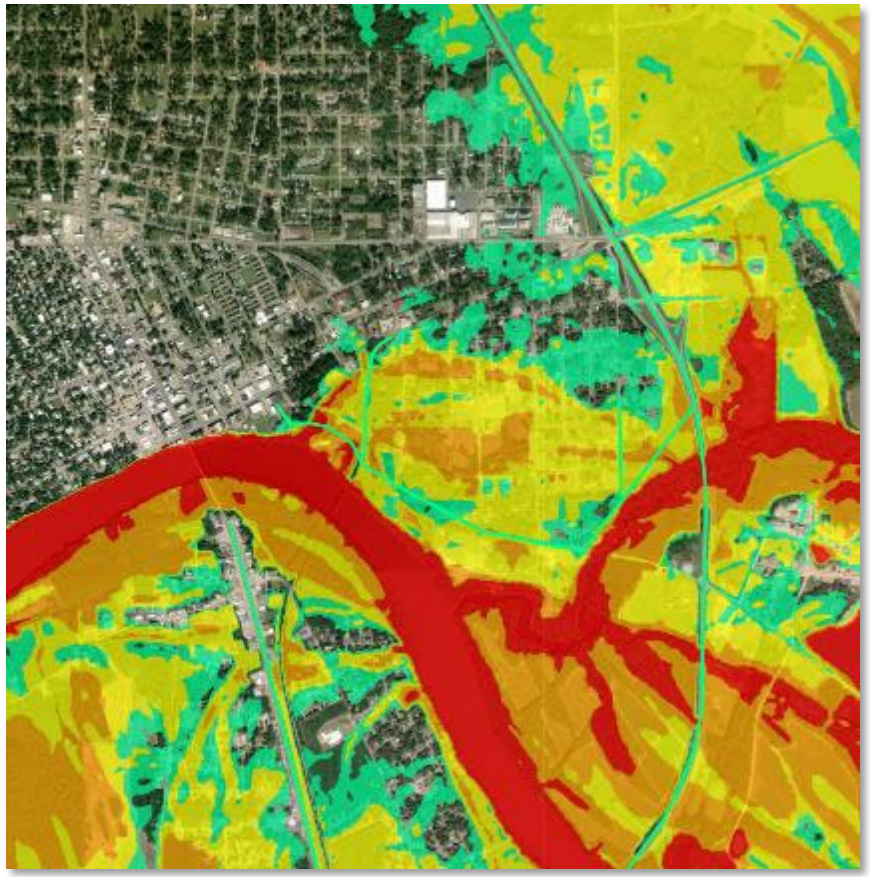


FWP (with levee)



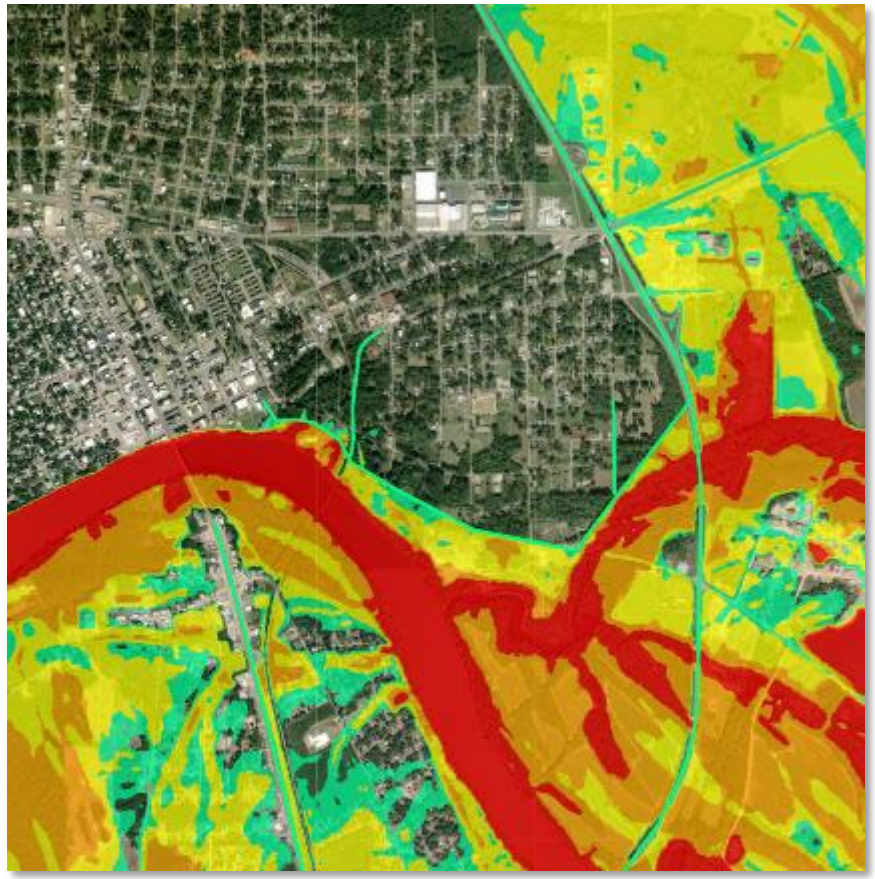
VIEW CONSEQUENCE RESULTS

FWOP



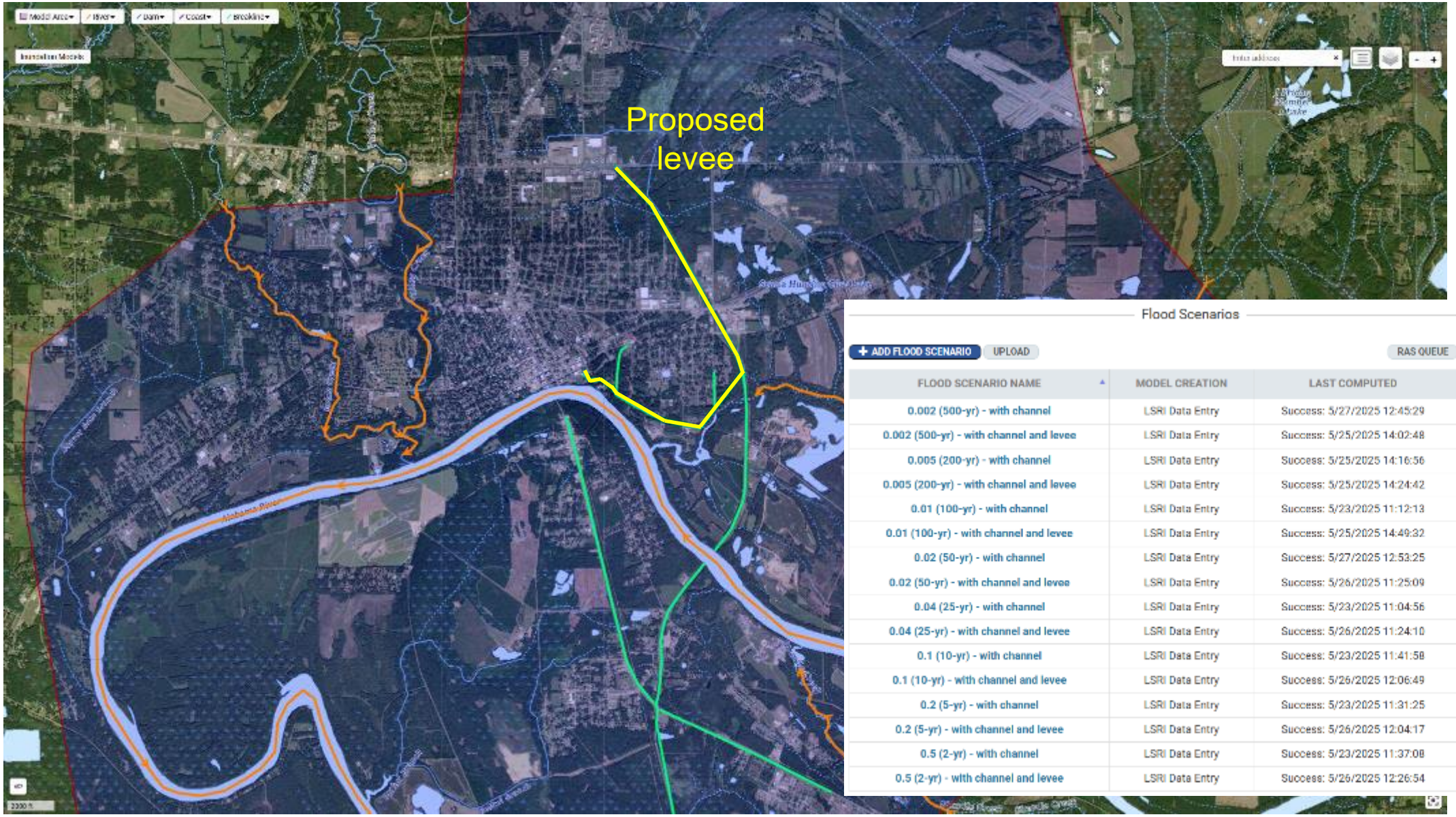
Population at Risk: 1,960
Property Damage: $80M
Structures Inundated: 849

FWP (with levee)



Population at Risk: 1,391
Property Damage: $63M
Structures Inundated: 626

REFINE MODEL AND ADD INUNDATION SCENARIOS

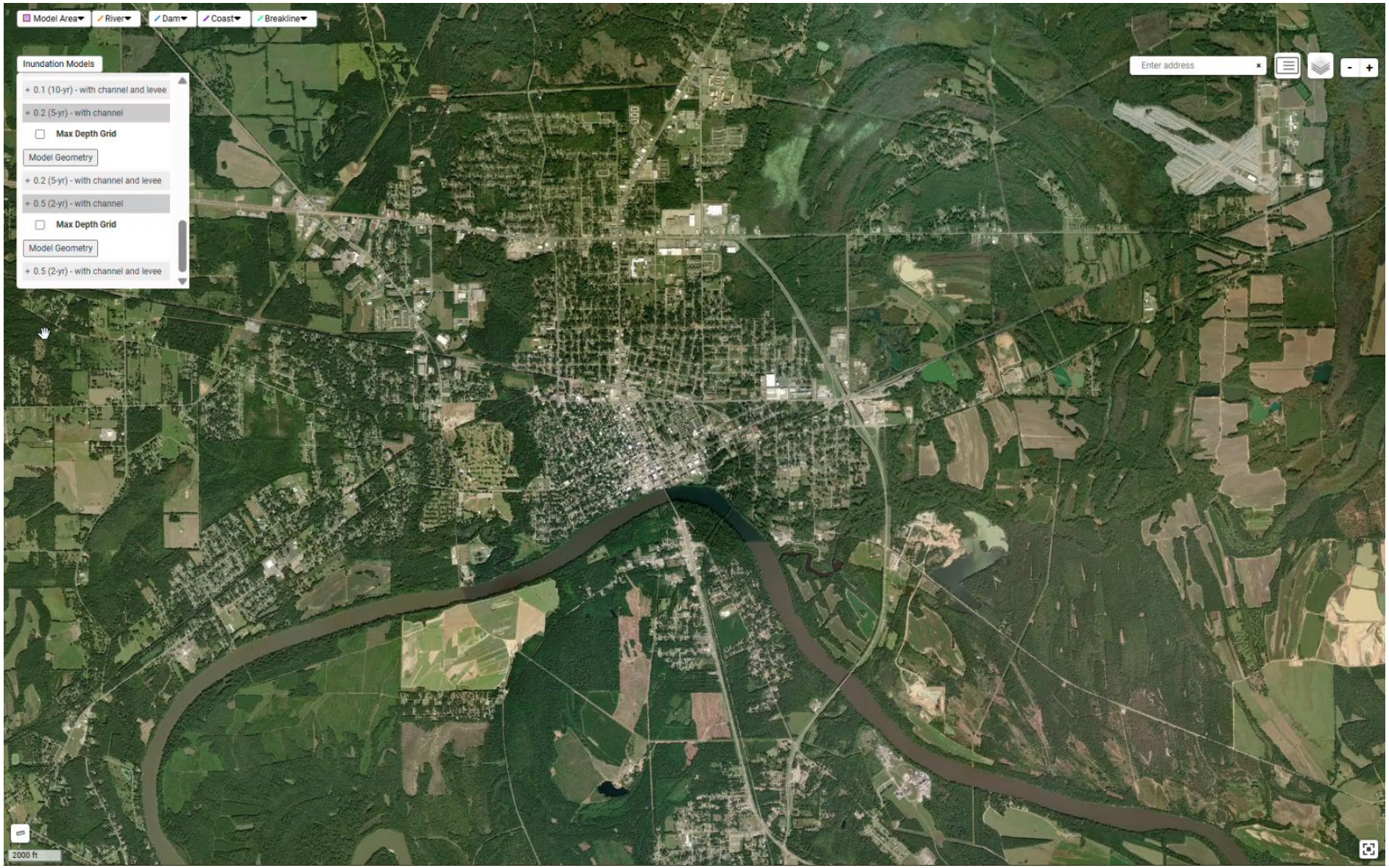


Flood Scenarios

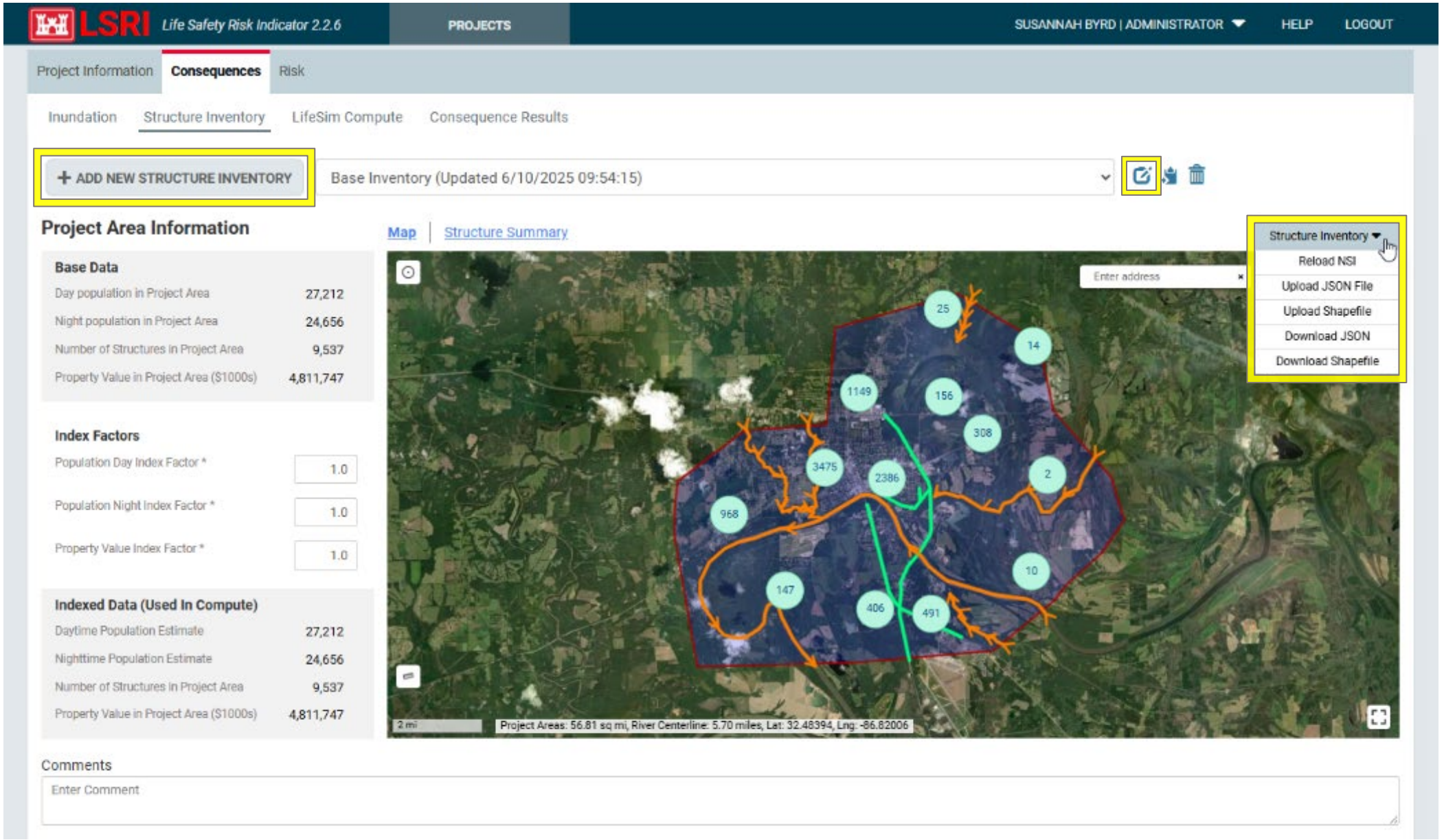
+ ADD FLOOD SCENARIO | UPLOAD | RAS QUEUE | DOWNLOAD

FLOOD SCENARIO NAME	MODEL CREATION	LAST COMPUTED	ACTION(S)
0.002 (500-yr) - with channel	LSRI Data Entry	Success: 5/27/2025 12:45:29	
0.002 (500-yr) - with channel and levee	LSRI Data Entry	Success: 5/25/2025 14:02:48	
0.005 (200-yr) - with channel	LSRI Data Entry	Success: 5/25/2025 14:16:56	
0.005 (200-yr) - with channel and levee	LSRI Data Entry	Success: 5/25/2025 14:24:42	
0.01 (100-yr) - with channel	LSRI Data Entry	Success: 5/23/2025 11:12:13	
0.01 (100-yr) - with channel and levee	LSRI Data Entry	Success: 5/25/2025 14:49:32	
0.02 (50-yr) - with channel	LSRI Data Entry	Success: 5/27/2025 12:53:25	
0.02 (50-yr) - with channel and levee	LSRI Data Entry	Success: 5/26/2025 11:25:09	
0.04 (25-yr) - with channel	LSRI Data Entry	Success: 5/23/2025 11:04:56	
0.04 (25-yr) - with channel and levee	LSRI Data Entry	Success: 5/26/2025 11:24:10	
0.1 (10-yr) - with channel	LSRI Data Entry	Success: 5/23/2025 11:41:58	
0.1 (10-yr) - with channel and levee	LSRI Data Entry	Success: 5/26/2025 12:06:49	
0.2 (5-yr) - with channel	LSRI Data Entry	Success: 5/23/2025 11:31:25	
0.2 (5-yr) - with channel and levee	LSRI Data Entry	Success: 5/26/2025 12:04:17	
0.5 (2-yr) - with channel	LSRI Data Entry	Success: 5/23/2025 11:37:08	
0.5 (2-yr) - with channel and levee	LSRI Data Entry	Success: 5/26/2025 12:26:54	

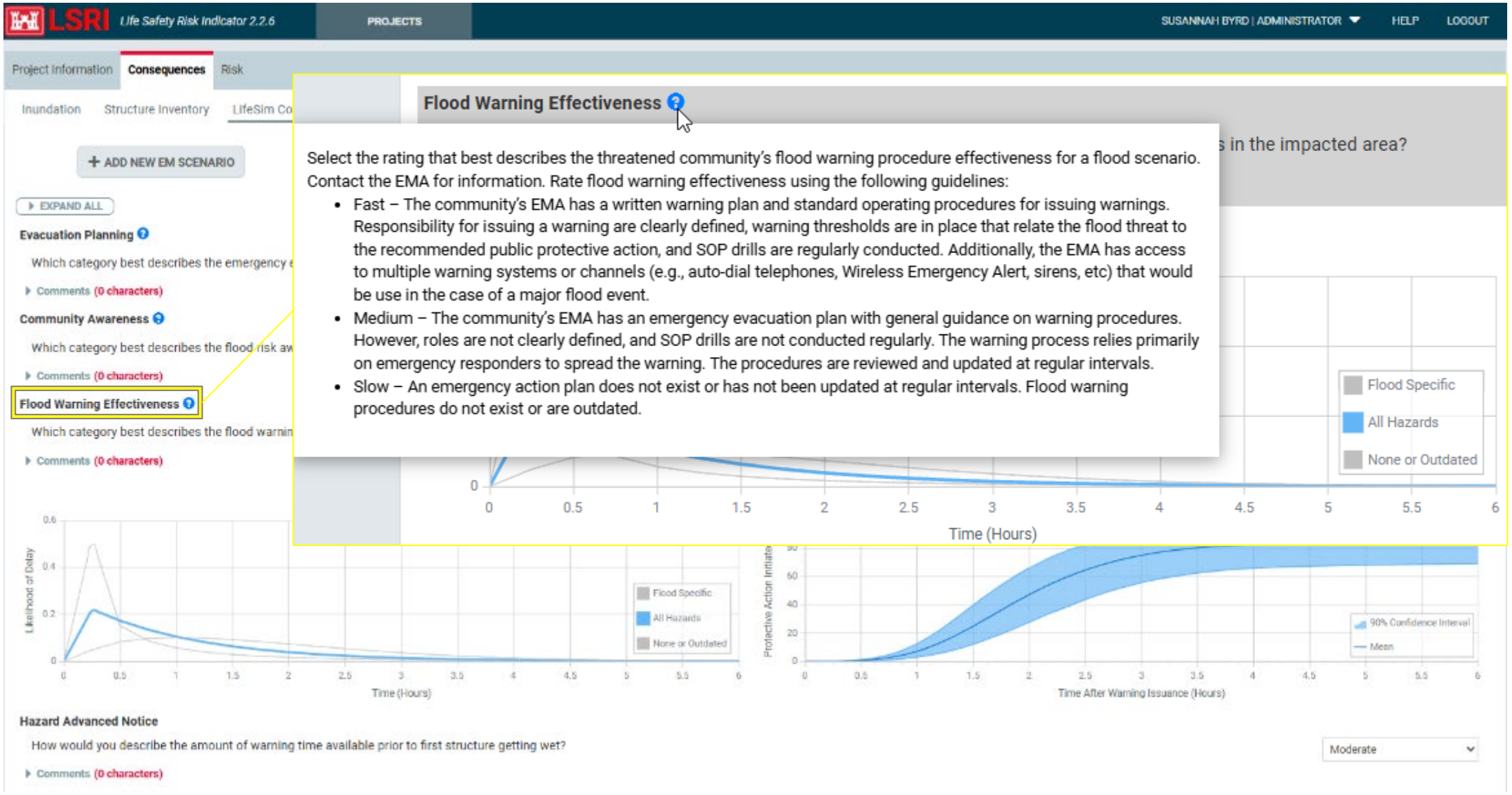
VIEW INUNDATION SCENARIOS



STRUCTURE INVENTORY



LIFESIM PARAMETERS



SETUP AND VIEW RISK CALCULATIONS

LSRI *Life Safety Risk Indicator 2.2.6* | PROJECTS | SUSANNAH BYRD | ADMINISTRATOR | HELP | LOGOUT

Project - Selma FRM - Full analysis - SB clone

Switch

Project Information | Consequences | **Risk**

+ ADD NEW RISK

RISK CALCULATION NAME	EXPECTED ANNUAL LIFE LOSS	EXPECTED ANNUAL DAMAGE	COMPARE WITH	EALL REDUCED	EAD REDUCED	ACTION(S)
Existing NSI with channel	0.12	$8,610,239.26	Select one...	N/A	N/A	
Existing NSI with channel and levee	0.12	$7,283,489.49	Existing NSI with channel	0	$1,326,749.77	

OKAY… BUT WHEN SHOULD TEAMS USE IT?

Instances the LSRI could be the most helpful tool:

- *Very limited to no H&H data:*
  1. No current RAS model available
  2. Have enough information to create simplified hydrographs
  3. Need to demonstrate the flood risk in the area

- *Team wants to quickly model FWOP & measures*:
  1. Can quickly model levees, floodwalls, channel improvements
  2. Can understand where flood risk is concentrated
  3. Model some nonstructural measures:
     - Buyouts/relocations
     - FWEEP
     - Elevations

- *Econ team member newer/not confident in "creative" screening using other tools*

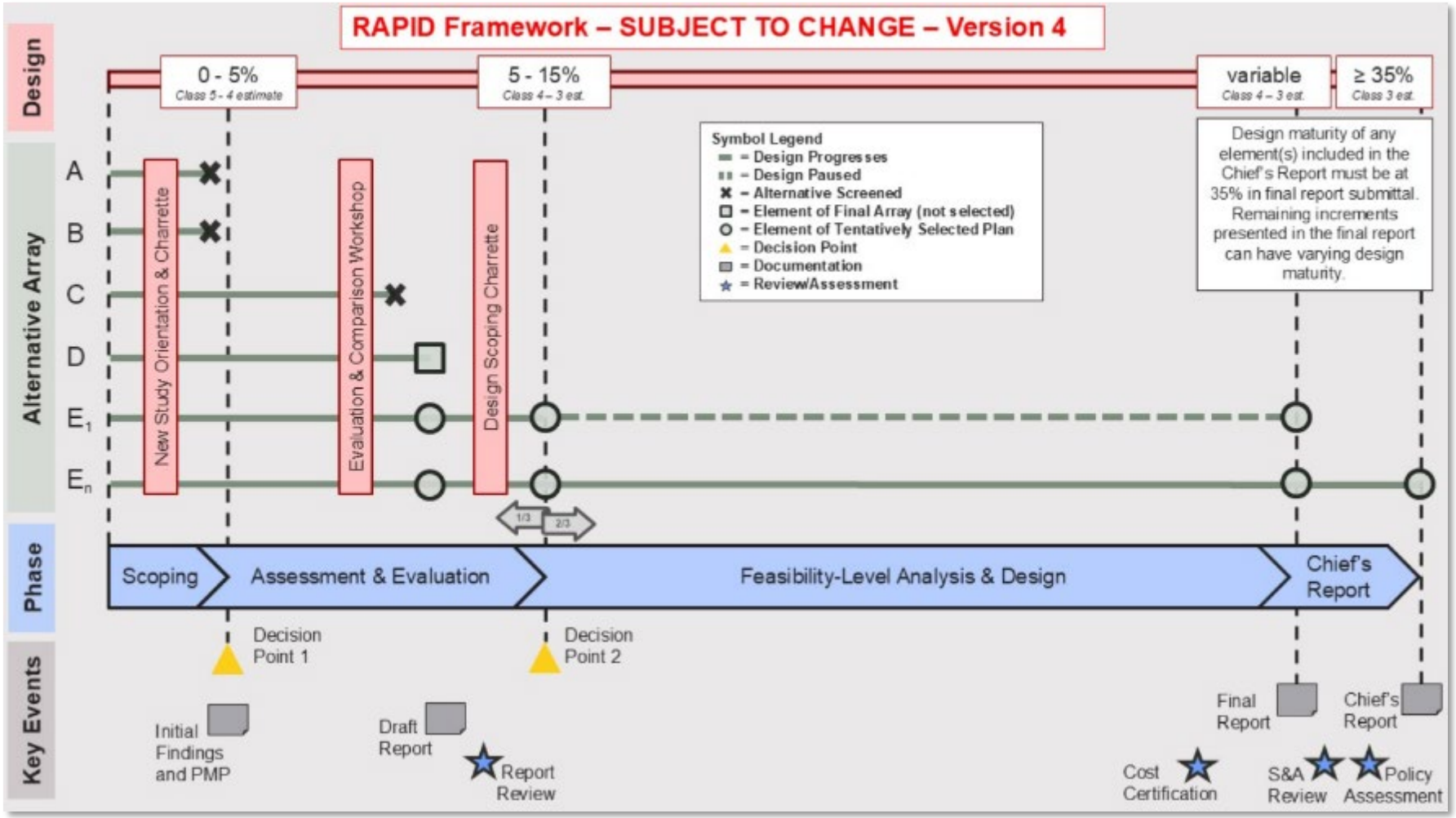
Instances other tools might be better:

- *Recent RAS models are available:*
  1. Modelers can make the same rough assumptions in RAS that they can in the LSRI
     - No need to add an extra step if you already have a RAS model
  2. Can use LifeSim or HEC-FDA for quick screening

- *Team wants to model more complex measures/alternatives*:
  1. Dry dams, pump stations, etc. cannot be easily modeled in the LSRI

- *Recent HEC-FDA and/or LifeSim models are available*:
  1. If there are existing RAS models *and* econ models available, use those tools for screening

OKAY… BUT WHEN SHOULD TEAMS USE IT?



A: Teams should use certified models once they have identified their final array

LSRI 2.0 CONTACT INFORMATION

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Technical Lead:

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Lead Consequence Specialist

IWR | RMC

Request access and general questions: DLL-CWBI-LSRI-Support

LSRI2 URL: https://lsri.sec.usace.army.mil/