

# REGULATE, LITIGATE OR CAPITULATE



Bryan Martindale, P.E. CFM



Rodney Johnson, CFM



30 YEARS OF LEVEE DRAMA

IAFSM 2018 ANNUAL CONFERENCE



March 14, 2018

KNIGHT

Engineers & Architects

# 30 YEARS OF LEVEE DRAMA

Bryan Martindale, P.E., CFM

Rodney Johnson, CFM

**REGULATE** — POLICE OR  
CONTROL

**LITIGATE** - CONTEST,  
PETITION, SUE

**CAPITULATE** - SURRENDER  
SUBMIT, SUCCUMB



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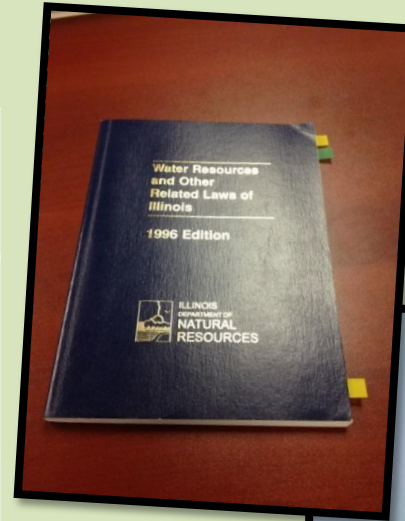
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# THE ACTORS AND THEIR ROLES

Bryan Martindale, P.E., CFM

Rodney Johnson, CFM

ACTORS	ROLE	WHAT
IDNR & ACOE	REGULATE	LEVEE CONSTRUCTION & FLOOD EASEMENTS
PLAINTIFF	LITIGATE	ILLEGAL LEVEE CONSTRUCTION
DEFENDANT	CAPITULATE (FORCE IT)	DAMAGES & PROPER INJUNCTIVE RELIEF



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## REGULATE: PERTINENT CONSTRAINTS

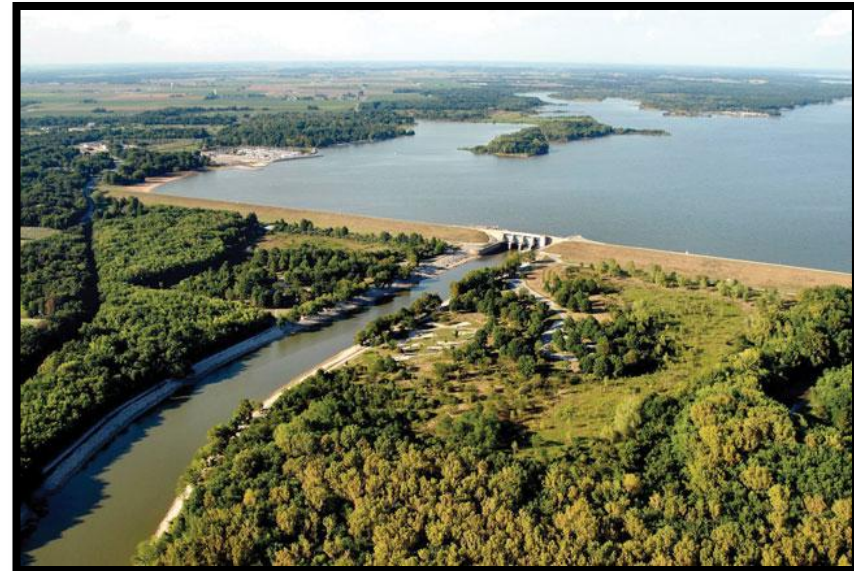
- ILLINOIS LAW
  - 615 ILCS 5/23, 29a, 30 and 35
  - Rivers, Lakes and Streams Act
- ADMIN RULES
  - IDNR, OWR Part 3700 Rules
  - “Downstate Floodway Rules”
- STANDARDS
  - Section 3700.60 “Department Standards”
  - **Absent contrary evident** – no more than 0.5 ft. increase in WSE
- VIOLATION
  - Unauthorized levee creates FEET of backwater causing failure of other levees





## REGULATE: PERTINENT CONSTRAINTS

- FEDERAL FLOOD EASEMENTS
  - Lake Carlyle
- STANDARDS
  - No loss of flood storage
  - **No construction of structures including levees**
- VIOLATION
  - Unauthorized levee on federal purchased easement ground



## REGULATE: OVERVIEW

- LOCATION
  - 4 ½ MILES PERIMETER LEVEES OF PECAN ISLAND
  - SOUTH CENTRAL ILLINOIS NEAR VANDALIA
- PARTIES INVOLVED & IMPACTED
- HISTORY
  - 30 YEARS OF LEVEE LITIGATION WAR
- ADMINISTRATIVE INVOLVEMENT AND DECISIONS



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REGULATE

## LOCATION

PECAN ISLAND

FAYETTE COUNTY

VANDALIA, ILLINOIS

70 MILES EAST OF ST.  
LOUIS ON INTERSTATE 70



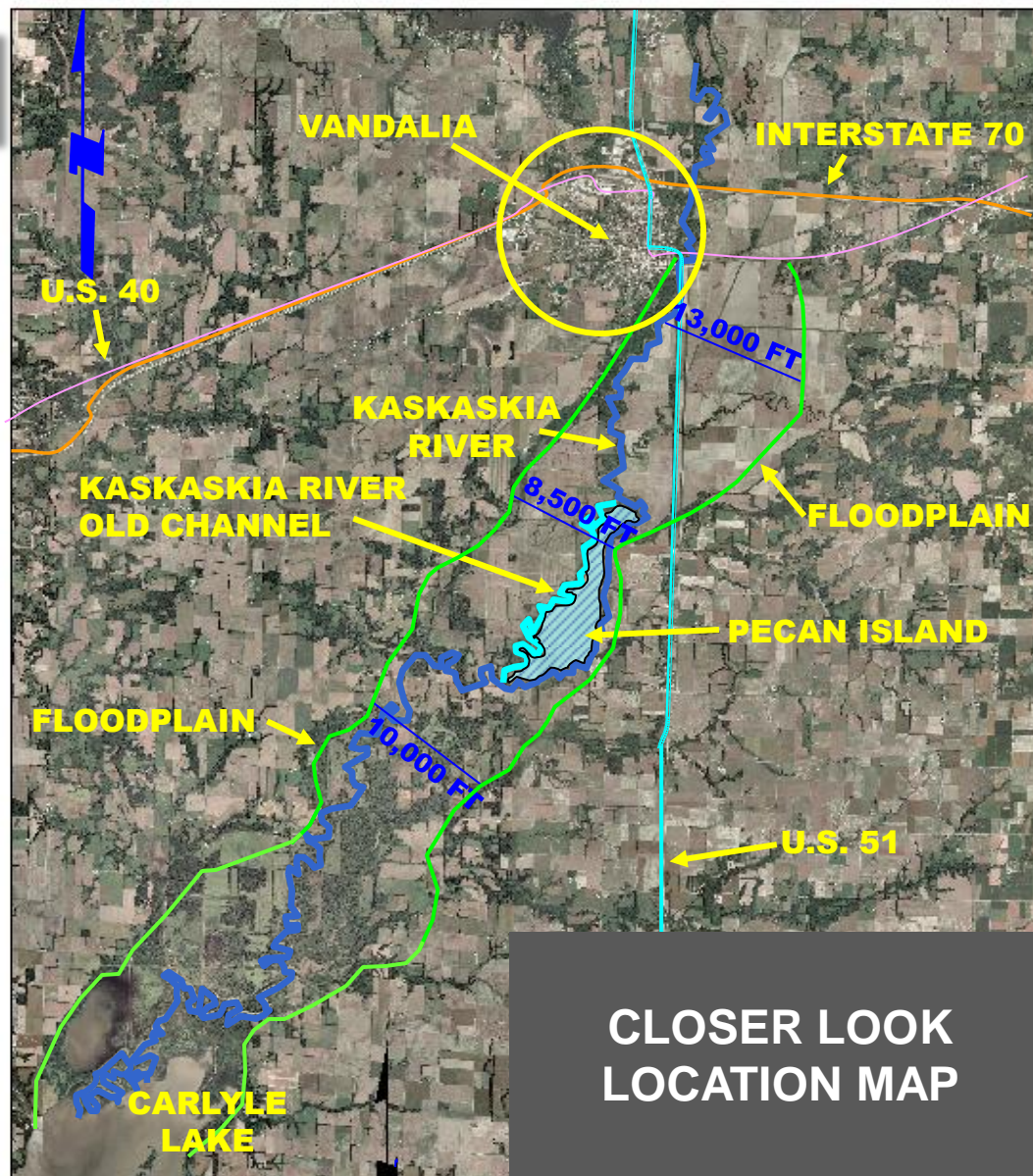
VANDALIA

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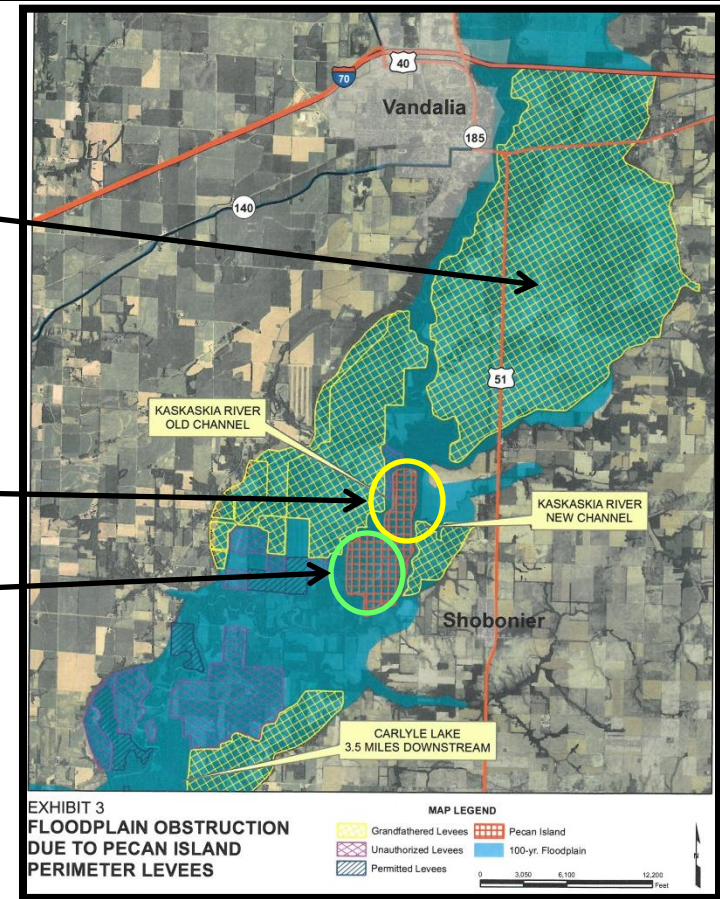






## PARTIES INVOLVED

- PLAINTIFF – VANDALIA DRAINAGE AND LEVEE DISTRICT
- DEFENDANTS
  - OUT OF STATE OWNER – UPPER AREA
  - NUMEROUS ENTITIES - LOWER AREA



## HISTORY

- 1989 – Complaint filed with COE
- 1990 – “After-the-fact” application for permit filed for levees with DWR & COE
- 1990 – letter from COE - Levees not allowed on flowage easement land for Carlyle
- 1990 – First suit filed by other party – flowage easements
- 1990 – **COE subpoena to testify but sovereign immunity defense granted**
- 1991 – IDNR and COE issue permits for levees in the area but not for Pecan Island levees
- 1991 – 1999 Damages occur; complaints filed; IDNR requested to investigate
- 1999 – Site inspection by BTM levees are “big”
- 1999 – **IDNR study indicated levees are causing increased flood stages; sends letter obtain permit or remove**
- 2000 – Plaintiff files suit
- 2001 – Defendant threatens lawsuit against IDNR
- 2002 – **BIG FLOOD**
- 2002 – Township files suit re Pecan Island levees
- 2002 – IDNR letter - 2.8 feet of increase at 10-year
- 2002 - **IDNR STEPS AWAY; wait for study money and application to be submitted; previous 1999 study not detailed enough to pursue any further investigations; all further inquiries go to Department Legal Counsel**
- 2003 – IDNR issues letter that detailed H&H is needed; COE should complete
- 2003 – 2008 – DD hires engineer to demonstrate impacts
- 2006 – IDNR completes gage analysis
- 2007 – IDNR surveys levees
- 2008 – Law suit filed by DD
- 2010 – First Trial in Circuit Court
- 2010 to current – Appellate Court twice; Supreme Court once; back to the Circuit court for one more round



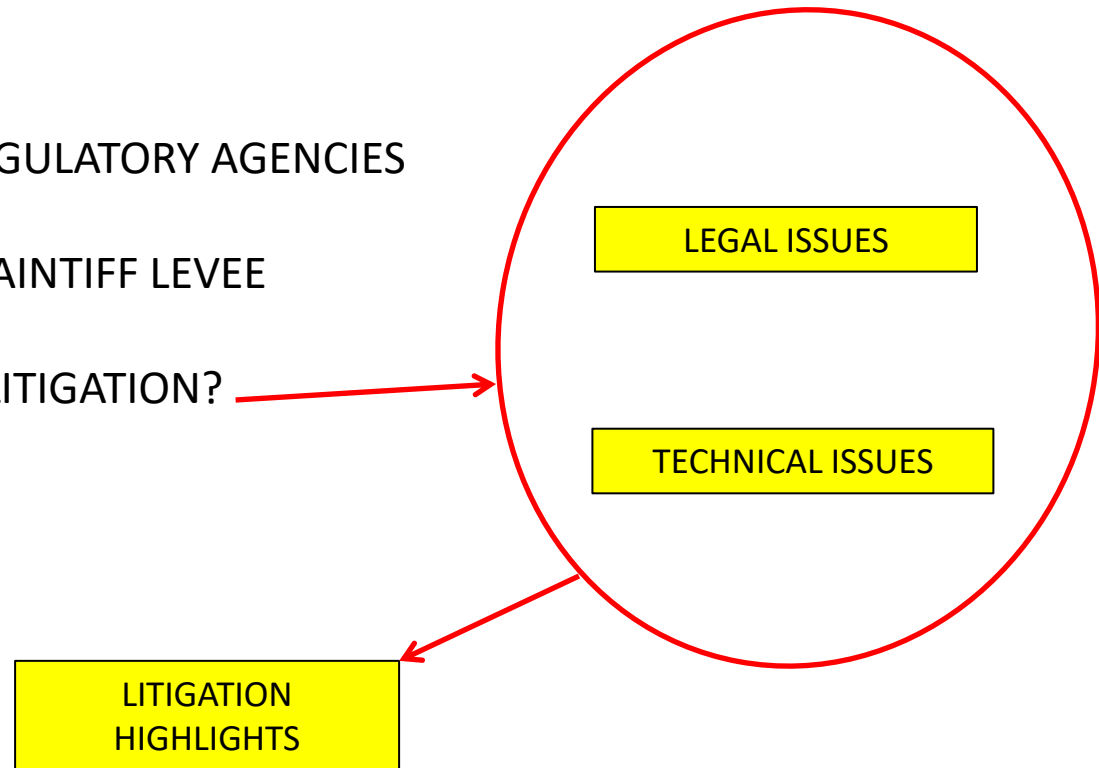
## ADMINISTRATIVE DECISIONS

- POSSIBLE INCREASES DUE TO UNAUTHORIZED LEVEE BUT NEED TO STUDY MORE
- IDNR AGREES TO ASSIST IN FINDING ACOE FUNDING TO COMPLETE STUDY ~\$600,000 IF PARTIES AGREE NOT TO SUE
- ACOE REVISES FLOOD EASEMENT POLICY RE LEVEES NO STUDY \$\$ AVAILABLE = NO ENFORCEMENT CREATION OF "BLACK HOLE"
- PLAINTIFF CONTINUES TO RECEIVE DAMAGE; DECIDES TO PURSUE LEGAL ACTION



## WHY LITIGATE?

- LACK OF ENFORCEMENT BY REGULATORY AGENCIES
- CONTINUING DAMAGES TO PLAINTIFF LEVEE
- WHAT'S INVOLVED WITH THE LITIGATION?





## **PLAINTIFF ARGUMENTS**

- OBSTRUCTION TO FLOW FROM DEFENDANT'S UNAUTHORIZED LEVEES
- MORE FREQUENT AND HIGHER FLOODING ELEVATIONS DUE TO DEFENDANT'S UNAUTHORIZED LEVEES

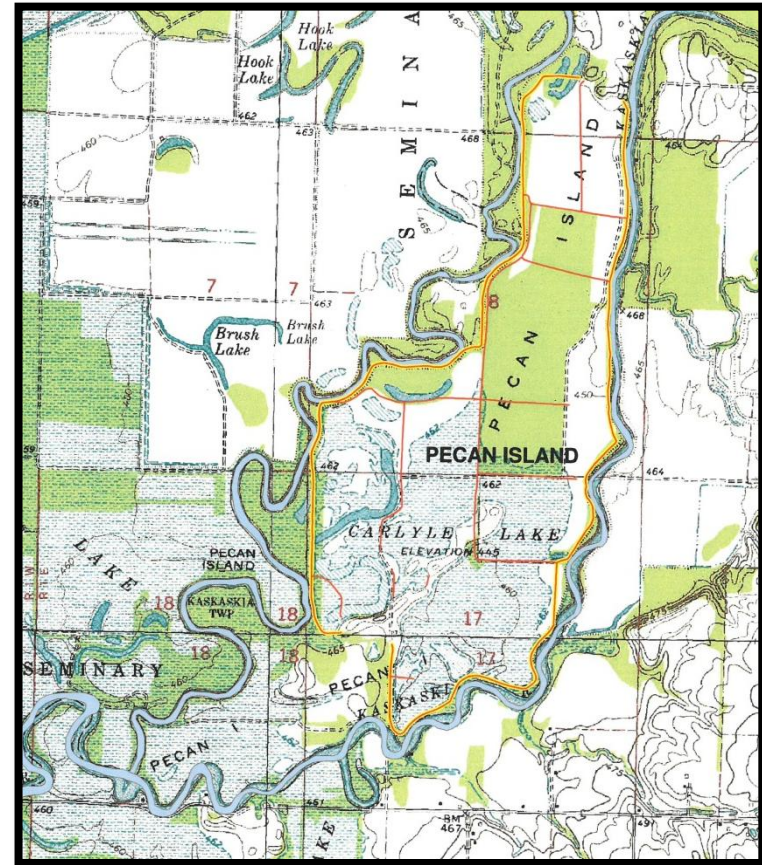
### **RESULTING IN:**

- PLAINTIFF LEVEE FAILURES
- MASSIVE REPAIR COSTS FOR PLAINTIFF LEVEE



## DESIRED REMEDY

- INJUNCTIVE RELIEF
  - Remove all Levees (4 ½ miles)
- DAMAGES
  - Levee Failure Repair Costs



## HISTORY OF TECHNICAL ISSUES

1999 HEC-RAS IDNR

*“the results are indicative of a definite increase in water surface elevations caused by levees that have restricted the flood carrying capacity of the Kaskaskia River floodplain.”*

2005 HEC-RAS PRIVATE

2006 HEC-RAS PRIVATE

2006 GAGE ANALYSIS IDNR

2007 DETAILED IDNR LEVEE SURVEY

2009 HEC-RAS PRIVATE

2016 HEC-RAS 1D UNSTEADY PRIVATE

2017 HEC-RAS 2D UNSTEADY PRIVATE



2002 SITE INSPECTION OF BREACHED LEVEE AREA

# MODELING COMPARISON

- GEOMETRIC CONFIGURATION
- HYDROLOGIC DATA
- ROUGHNESS COEFFICIENTS
- CROSS-SECTIONS
- SPLIT FLOW
- FLOW OVER LEVEES
- DURATION OF FLOODING
- OUTPUT

\*\*\*\*\*  
\* HEC-2 DATA EDIT PROGRAM \*  
\* VERSION 1.00 AUG 1978 \*  
\* 79/02/16. \*  
\*\*\*\*\*

H-232

C  
C 1  
C 51925 USGS GAGE DISCH CREEK AT LA PORTE  
T1 FLOW PLAIN HYDROLOGY  
T2 HEC-2 OUTPUT ANALYSIS  
T3 DISCH CR 50-YEAR FLOOD  
J1 4 722.3  
J2 1 -1

RT	0	1000	2000	5600	8000	16000	16000	19000	
NC	.12	.12	.055	.2	.4				
X1	51500	34	465	510					10
GR	735.2	0	733.2	15	731.2	32	729.2	50	727.2 65
GR	725.2	110	723.2	188	721.2	195	719.2	205	717.2 212
GR	717.5	225	718.0	240	719.2	255	725	280	719.2 300
GR	717.2	315	715.2	335	713.2	465	711.2	474	709.2 478
GR	707.2	485	707.2	505	709.2	510	717.2	540	719.2 558
GR	721.2	580	723.2	605	725.2	645	725.2	740	727.2 795
GR	729.2	765	731.2	790	733.2	815	735.2	840	
X1	51700	0	0	0	1200	1200	1200	.8	.2
X2									15
X1	51925	37	265	299	175	475	425		
X2		731.4							
GR	735.2	0	733.2	15	731.2	32	729.2	50	727.2 65
GR	725.2	110	723.2	188	721.2	195	719.2	205	717.2 212
GR	715.1	219	715.5	225	717	230	717.1	235	715.4 240
GR	712.1	245	710.2	250	709.4	255	706.4	260	709.7 265
GR	710.7	270	709.8	275	711.7	280	713.8	285	714.9 290
GR	717.7	299	717.4	300	717.2	540	719.2	558	721.2 580
GR	723.2	605	725.2	645	727.2	755	729.2	765	731.2 795
GR	733.2	815	735.2	840					
X1	51950	0	0	0	1825	1825	1825	.91	1.05
NC				0.1	0.3				
X1	52000	0	0	0	1600	1600	1600		0.85

1 of 17

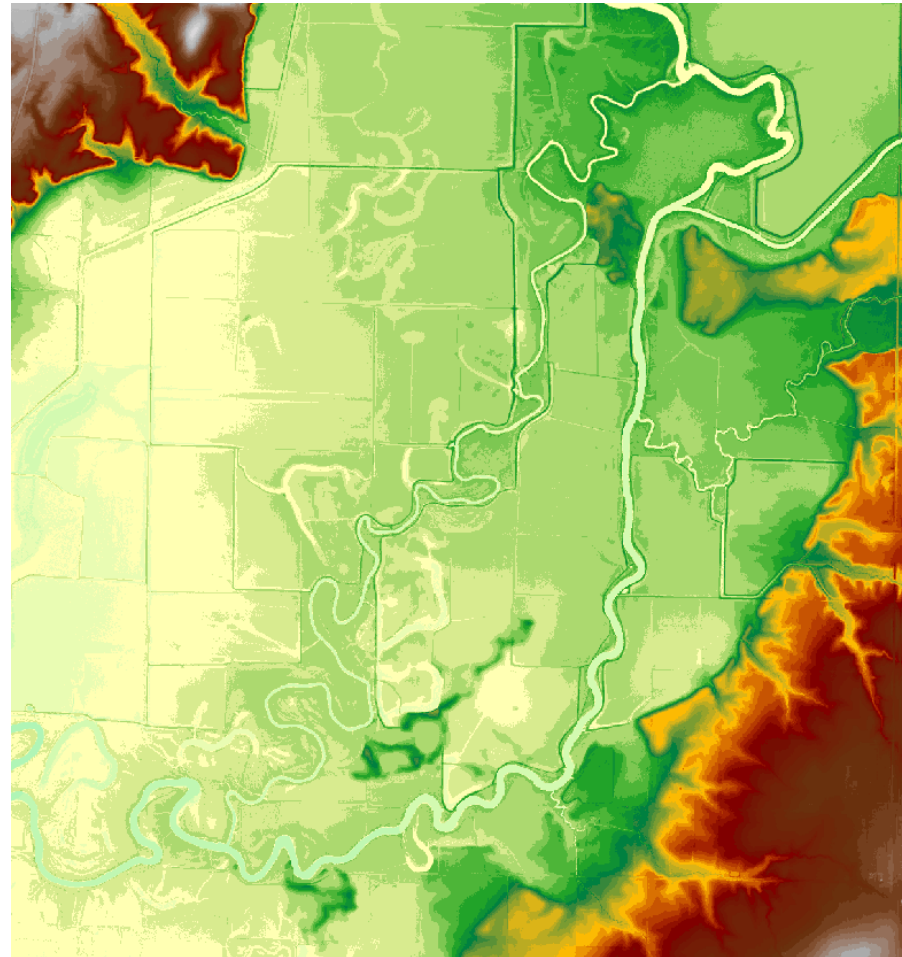


## OLD SCHOOL

- Quad map
- Estimate of Levee Heights
- Survey Data (later)

## HIGH TECH

- LIDAR

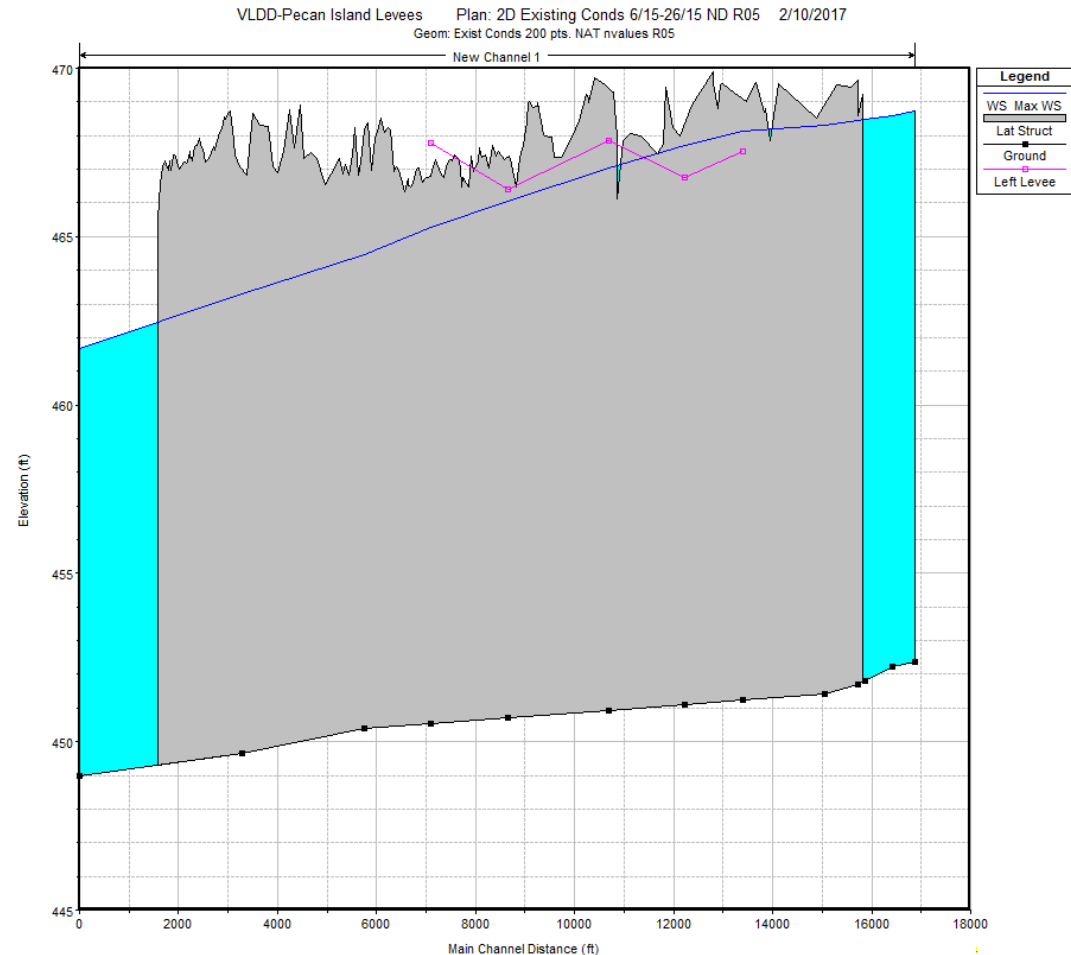


## OLD SCHOOL

- Peak Q at top of levee elevation  
(Worst-case Analysis per 3700 Rules)

## HIGH TECH

- Storm Hydrograph
  - June 15-26, 2015
  - Gage Validation
  - Photo Validation
  - Overtopping Event



# MODELING COMPARISON

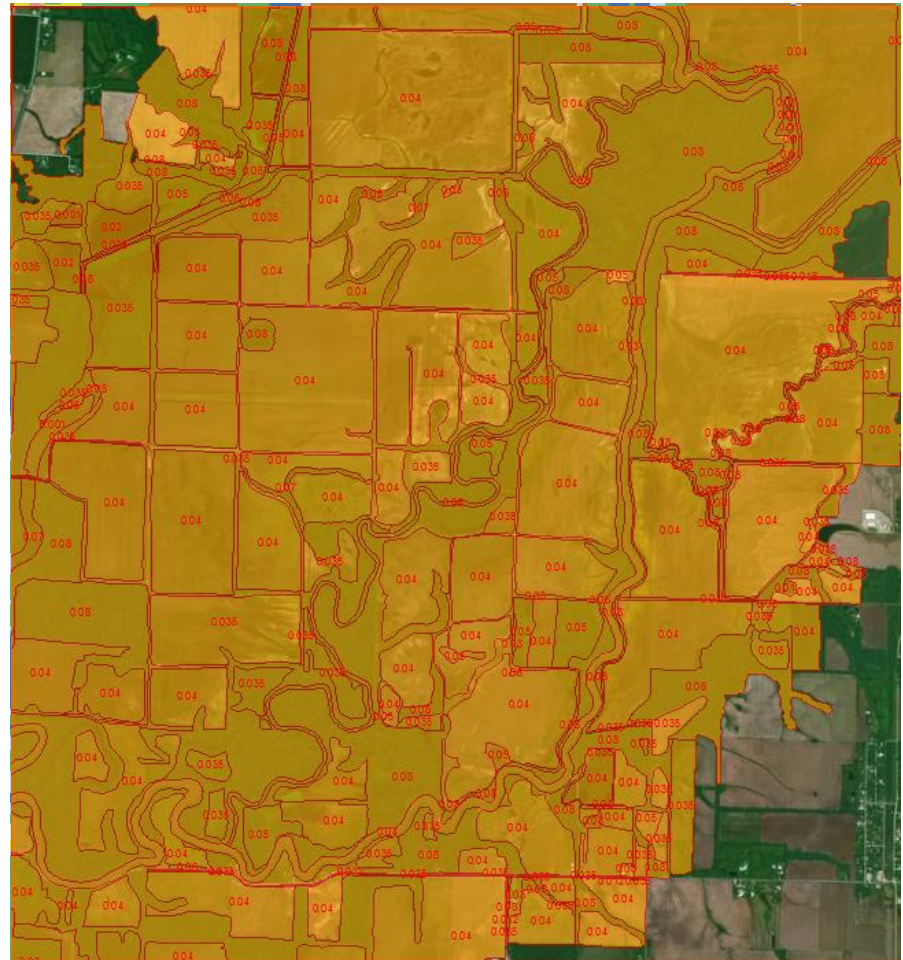
## ROUGHNESS COEFFICIENTS

### OLD SCHOOL

- Field Observations
- Book Values

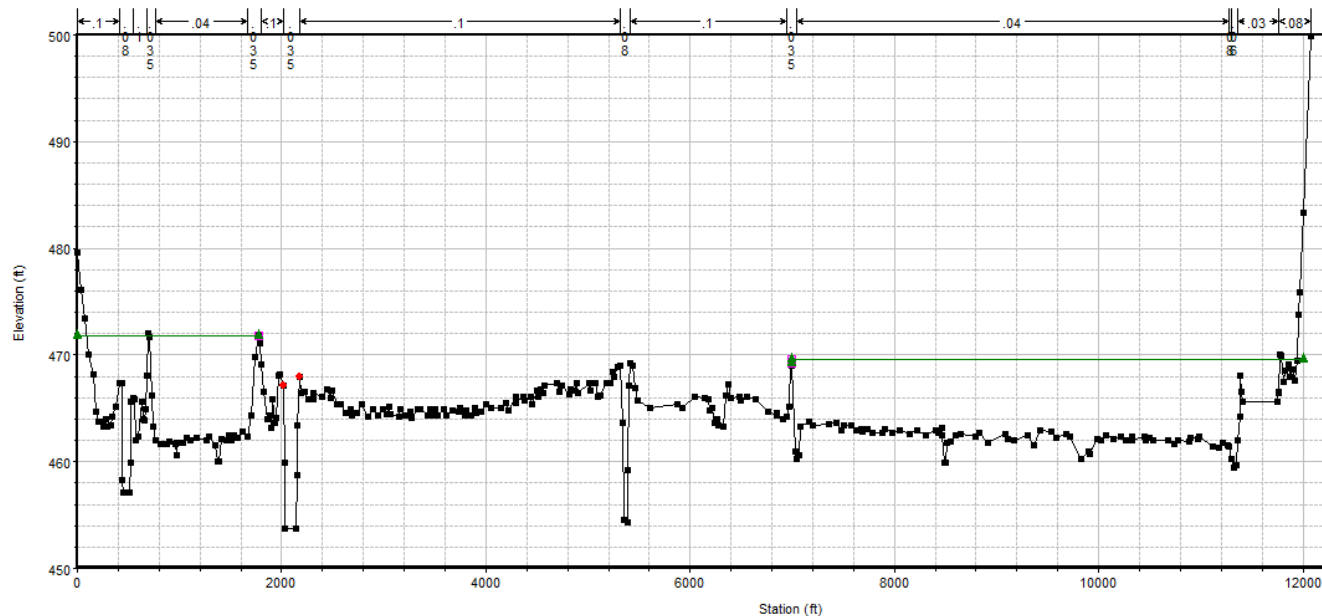
### HIGH TECH

- NLCD Raster (2006)
- Land Use Shape File



## HIGH TECH

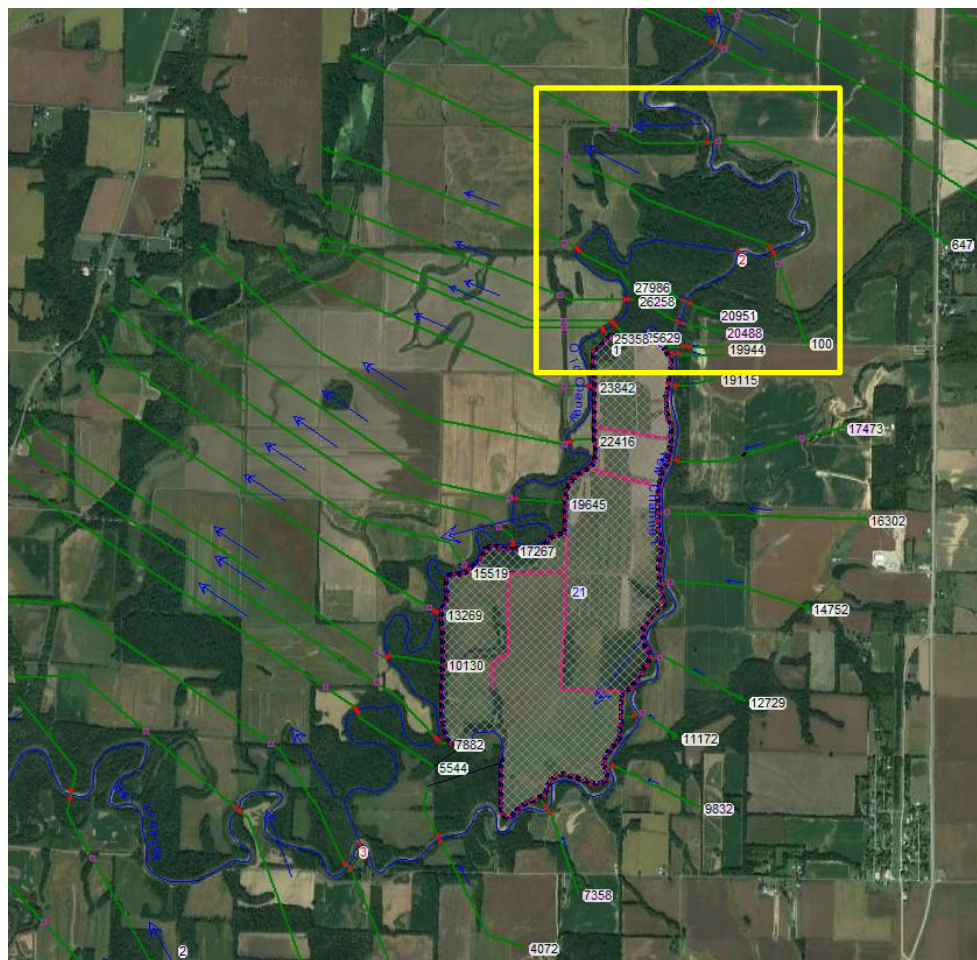
- X-Sec point filter
- N Value issues

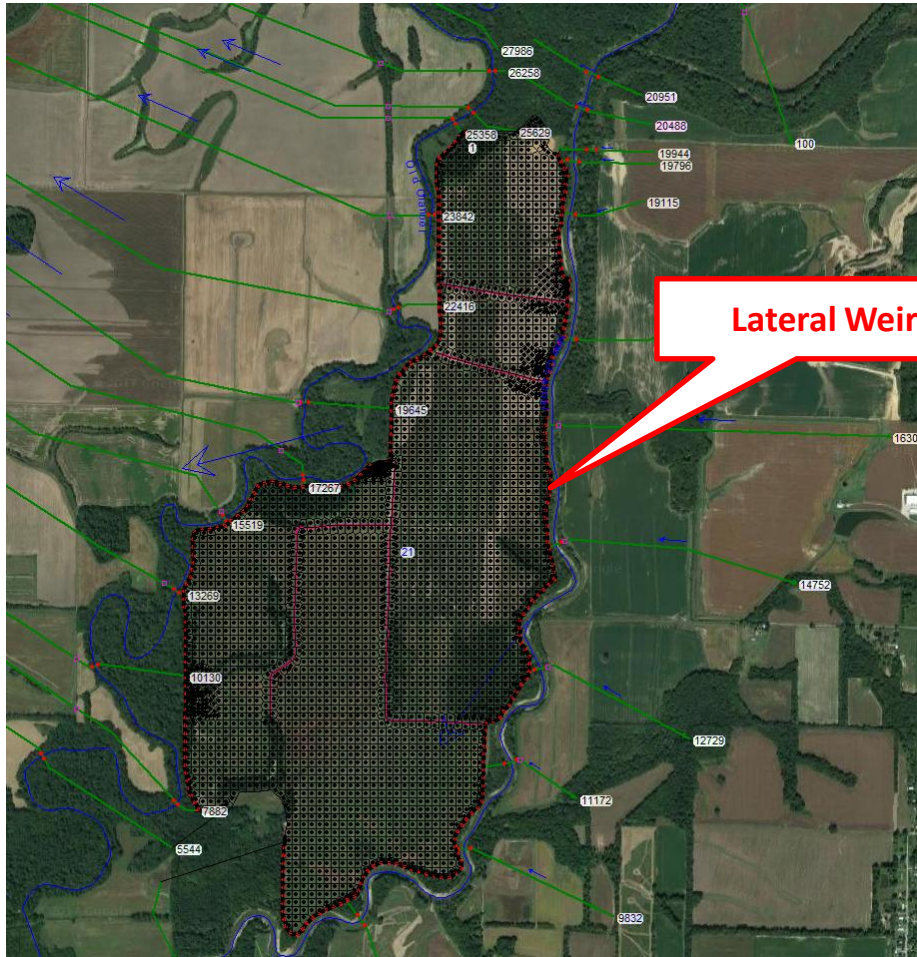




### HIGH TECH

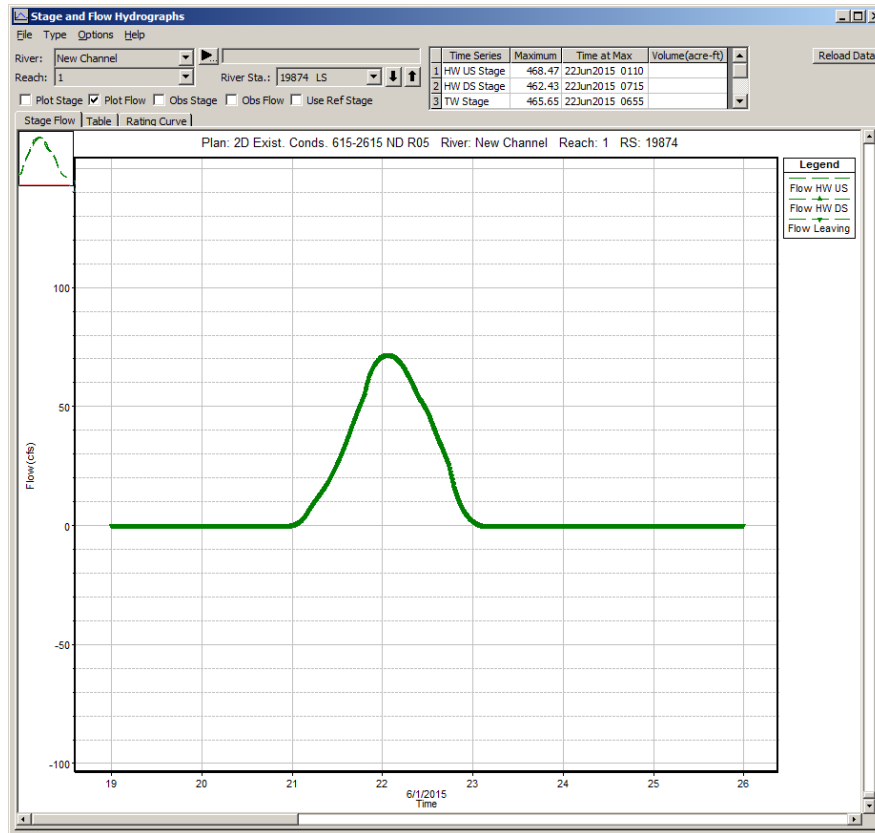
- Stream Junctions
- Separate Reaches





## HIGH TECH

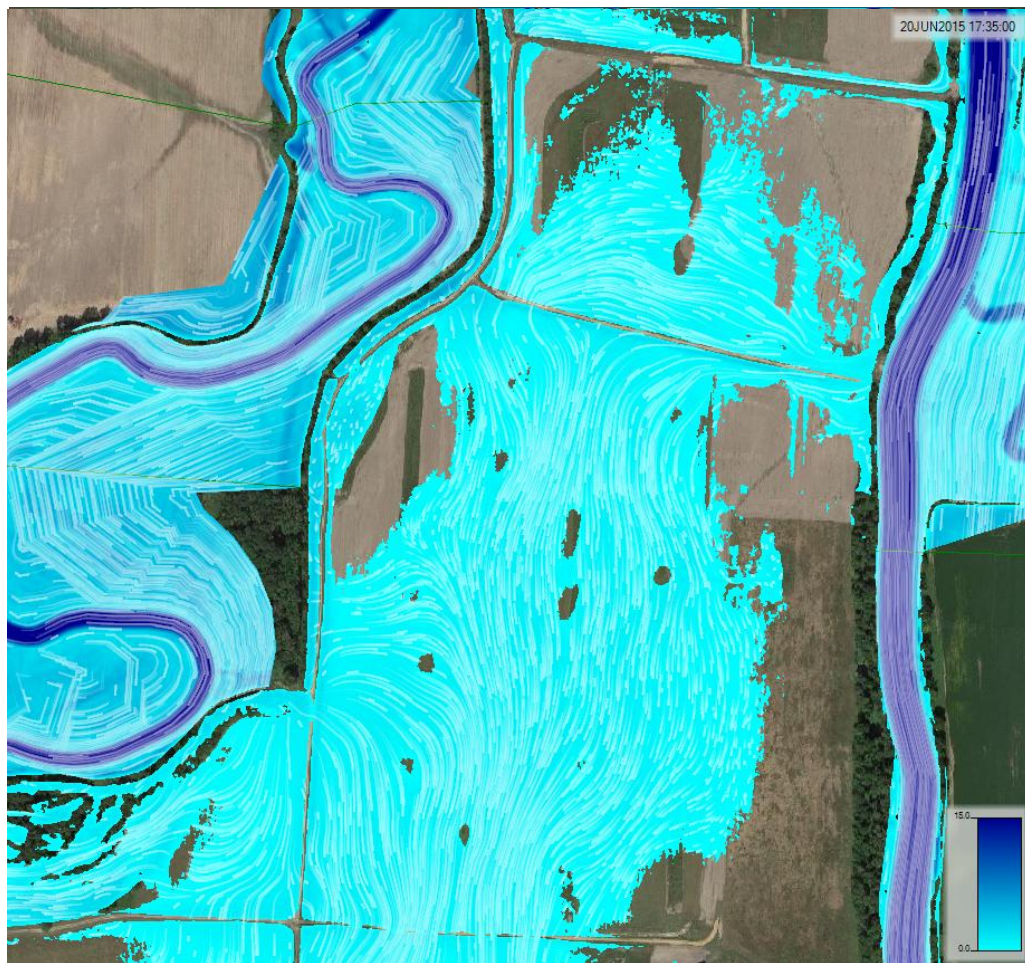
- 2D with Tailwater
- Weir Coefficient ?
  - With and Without Levee



## HIGH TECH

- Stage/Flow Hydrographs\*\*
- Duration above any desired Elevation





## HIGH TECH

- Particle Trace
- Inundation Map



# MODELING COMPARISON RESULTS

SUMMARY OF PLAINTIFF MODELING – LEVEE IMPACTS					
Report Name	Date of Report	Type of Modeling	Topographic Information	Maximum Increase in Flood Elevation (ft.)	Court Record
IDNR Investigation	1999	HEC- RAS	Quadrangle Maps	2.8	No
Preliminary Study	2005	HEC-RAS Steady Flow	Quadrangle Maps	1.7	Yes
Supplemental Study	2006	HEC-RAS Steady Flow	Local field survey	5.7	Yes
Revised Modeling Study	2009	HEC-RAS Steady Flow	IDNR detailed levee survey	3.3	No
Comprehensive Pecan Island Levee Modeling Study *	2016 & 2017	HEC-RAS Unsteady 1D & 2D Flow	LIDAR data and detailed local survey	3.5 - 6/15 event 3.8 - 12/15 event	Yes
* Model also used to evaluate court ordered levee gaps					

## LITIGATION HIGHLIGHTS

- **IDNR called to testify re Pecan Island levees**
  - AG tried to quash subpoena
  - Judge denies request to quash
- **TRAIL : Circuit Court – Levees can remain (judge immediately retires)**
- **Plaintiff Appeals : Appellate Court – Overturns Circuit Court [Plaintiff Win]**
  - Plaintiff has prescriptive right
  - **REMOVE ALL LEVEES**
  - Remanded to Circuit Court for determination of damages



In the mean time.....

1. Flooding occurs causing additional major levee damages
2. One Defendant becomes mentally incapacitated
3. Another Defendant is killed in an accident

## LITIGATION HIGHLIGHTS (con't)

- **Circuit Court – Ignores Appellate Court Directive !**
  - Allows hearing by Defendant's heirs re applicability of suit
  - Order issued by Court for construction of levee gaps
- **Defendant's Appeal: Appellate Court – Upholds Circuit Court [Plaintiff Win]**
- **Defendant's request Supreme Court take case**
  - Supreme Court declines
  - Defendants put gaps in levee

### Litigation Lunacy.....

- **Defendant's File New Circuit Court Case**
  - Levee gaps create a "taking"
- **BENCH TRAIL: Circuit Court**
  - Damages only
  - Attempt for additional injunctive relief



## LIKELY NEXT STEPS

- 2018 March – Depositions for Trial AGAIN !
- 2018 June – Bench Trial re damages (maybe additional injunctive relief)
- 2018 September – Circuit Court Decision
- 2018 October – Appeals Filed
- 2019 April – Arguments in Appellate Court
- 2019 December – Appellate Decision
  - All levees removed (4 ½ miles)
  - Damages (\$1.6 to \$2 million)



## 30 YEARS LATER.....

- DEFENDANTS HEALTH/DEATH
- ENORMOUS EXPENDITURE OF PRIVATE FUNDS
- IDNR FPM REGULATORY PROGRAM
  - VOLUNTARY COMPLIANCE
  - RULES MODIFICATIONS



## 30 YEARS LATER.....

- PRIVATE LITIGATION - \$250K
- DAMAGES – \$1.6 MILLION
- 13 FIELD INSPECTIONS
- 12 HEARINGS
- 8 DEPOSITIONS
- 57 MOTIONS
- 7 DAYS OF TRIAL



## OFFICIAL LESSONS LEARNED

- **ENGINEERING**
  - BASIC LAWS OF PHYSICS PREVAIL
  - MODELING HAS EVOLVED BUT.....
- **LEGAL**
  - COURT RULINGS ARE NEVER PREDICTABLE
    - LEVEE REMOVAL VS. GAPS
    - JUDGES DON'T ALWAYS ABIDE BY THE RULES
    - JUDGES CAN BE ENGINEERING EXPERTS?
  - LITIGATION TAKES YEARS - LEGAL WINS ARE ELUSIVE
- **REGULATORY**
  - ENFORCEMENT IS NOT STRONG SUIT – WHY?
  - LEGAL COUNSEL MUST BE ENCOURAGED TO PURSUE VIOLATIONS
  - NOT IMMUNE FROM POLITICAL INFLUENCE

## THOUGHT PROVOKING ISSUES FOR REGULATORY AGENCIES

- STRENGTHEN POLICY TO SUPPORT TAXPAYERS WHERE ILLEGAL FP ACTIVITIES ARE ENCOUNTERED – TESTIFY ON THEIR BEHALF; DON'T AVOID WHAT YOU KNOW
- PENALTY FOR VIOLATIONS MUST BE MEANINGFUL – DITCH THE PAPER TIGER SYNDROME
- REGULATION MUST INCLUDE ENFORCEMENT– PROVIDE STAFF FOR SUCH
- DON'T CHANGE REGULATIONS CONTRADICTORY TO LOGIC – FIGHT FOR WHAT IS SOUND POLICY NOT POLITICALLY MOTIVATED





# QUESTIONS ?

**ASK MY LEGAL  
COUNSEL!**



Proverbs 15:22

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