

LOUISIANA CIVIL ENGINEER

Journal of the Louisiana Section

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Twenty Years After Katrina

FEATURES:

Twenty Years After Katrina:
Ten Fundamental Flood Risk
Lessons We Must Finish Learning

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FEBRUARY 2025
VOLUME 33 • NO 2

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TABLE OF CONTENTS

FEBRUARY 2025 • Volume 33 • No. 2

Section Roster	4
President’s Message	5
Twenty Years After Katrina: Ten Fundamental Flood Ri\$k Lessons We Must Finish Learning. . . .	6
Region News.	15
Section News	16
ASCE-COPRI Louisiana Chapter News	18
ASCE – Geotechnical Institute Louisiana Chapter News.	19
ASCE – Government Relations Committee News.	19
ASCE-T&DI Louisiana Chapter News.	20
Branch News.	22
Student News	24
Calendar of Events.	25
Professional Listings.	28
Services and Suppliers	2,28



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The Louisiana Section is located in ASCE Region 5 that consists of the Louisiana, Mississippi, Alabama, Georgia, Florida Sections, and Puerto Rico.

President's Message

By Andrew Woodroof, PE, Section President

As we enter 2025 full swing, our Section and Branches are hard at work to serve our membership by maximizing your professional growth and magnifying your lifelong impact. The various committees at all levels of the organization have exciting, informative, and impactful initiatives and events planned throughout the year.

In late January, your Region, Section and Branch leaders, as well as Young Member leaders, attended the Multi-Region Leadership to learn how to leverage all the resources ASCE has to offer its members and leaders. Participation in the Workshop strengthens and expands the programs and activities of Sections and Branches through the interchange of ideas, information, and experiences, while it exposes incoming officers to the tools needed to be effective leaders.

In March, members and officers will travel to Washington D.C. to participate in the ASCE Legislative Fly-In, where they will learn how to engage with local, state, and national elected officials; get educated on national policy issues that affect the civil engineering industry; and meet with members of the Louisiana Congressional delegation to discuss current issues facing the industry in Louisiana and share the positive impacts our profession and engineers like you have on the communities they represent.

In May, the Louisiana Section, hosted by the Shreveport Branch, will hold our annual Spring Conference with a program aimed to maximize your professional growth.

In addition to these activities, our various committees continue to work on important programs and initiatives to serve our members, and I would like to highlight a few:

- Our Infrastructure Report Card committee, led by Kirk Lowery, are closing in on the final release of Louisiana's next Infrastructure Report Card, which will come on the heels of the national Infrastructure Report Card to be released in March 2025. This important initiative provides our organization and its members with a valuable tool to identify where we can collectively focus our efforts to improve infrastructure in Louisiana and strategically identify funds to do so.
- Our Website committee, led by Jared Veazey, is preparing to roll out a new, redesigned website that will offer more resources to our members and institutes and allow our leadership to more easily and effectively share information with our members.
- Our Publications committee, led by Nedra Hains and Brant Richard, work tirelessly to publish the valuable content you find in the journal.

These are but a few of our current major efforts which, in conjunction with the many events hosted by our Branches and Institutes, that I hope provide value to you as members and to our profession in Louisiana. I encourage you to take advantage of the many events, initiatives, and resources provided by the Section, Branches, and

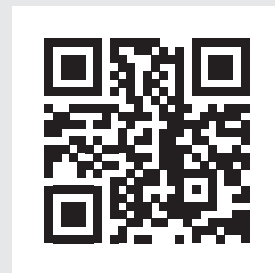
Institutes, and get involved with any of these initiatives that suit your interests to maximize your impacts as a member of ASCE and as a Civil Engineer.

Thank you again for this opportunity to serve you in this organization. I would like to thank to all our Board members and committee leaders

and the Section, Branch, and Institutes for all that they do to further the mission of ASCE, and a special thank you to all of you – our members that make our communities better through the profession of Civil Engineering.



Andrew Woodroof, PE



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Twenty Years After Katrina: Ten Fundamental Flood Re\$ilience Lessons We Must Finish Learning - March 2025

By Bob Jacobsen, PE



Overview

Flood Ri\$k¹ management has witnessed astounding advances since the catastrophic inundation of New Orleans in August 2005. Nevertheless, there are ten fundamental lessons yet to be fully recognized and supported. Escalating climate change demands a broad and thorough adoption of basic principles regarding:

Understanding Ri\$k

1. Hazard
2. Ri\$k
3. Evolving Science
4. Uncertainty
5. Responsibility for Ri\$k Information

Re\$ilience (Managing Ri\$k)

6. Insurance
7. Ri\$k Mitigation
8. Limitations of Ri\$k Mitigation
9. Nature-Based Mitigation
10. Assistance

This article addresses these ten fundamental lessons—recalling severe failures exposed during Hurricane Katrina and subsequent

1 The “\$” in the terms Ri\$k, Re\$ilience, and Su\$tainability is used to reinforce the particular focus on financial risk, resilience, and sustainability. **Ri\$k, Full-spectrum, Re\$ilience, and Su\$tainability** are trademarks owned by **Real Flood Resilience L3C**.

flood disasters, highlighting twenty years of progress, and emphasizing the remaining challenges. The subject follows up the author’s previous **Louisiana Civil Engineer** articles on Hurricane Katrina and flooding: *Managing Hurricane Surge in the Supercomputing Era Part I / Part II (2015)* and *Property-Specific Flood Risk, Part I / Part II (2021-2022)*.²

Bonus Lesson: the very same lessons have stood the test of time for other property hazards such as fire, ice, wind, soil/foundation, and legacy contamination. The ASTM E1528-14 Standard addressing environmental Ri\$K has been in effect now for over 30 years.

Lesson 1: Hazard

At the time of Hurricane Katrina, and still today, many officials and most of the public oversimplify flood hazard—using a single-line threshold or crude categories/factors and misrepresenting rarity. This severely distorts risk and leads to bad decisions. A proper understanding of flood hazard accounts for five basic principles.

1.1 Flood hazard is “how high, how often” at a specific location.

Risk management demands a fully quantitative hazard depiction—with detailed increments of flood elevation versus frequency, i.e., a **Full-spectrum hazard curve**. Frequency is typically expressed as Annual Exceedance Probability (AEP): the odds (chance) over a single year. Flood hazard is location-specific, and the curve is better appreciated by converting flood elevation to flood height above ground. See Figure 1, light solid line.

1.2 Flood hazard encompasses a complete range of rare scenarios.

A location’s Full-spectrum hazard curve does not rely just on local history, but covers all applicable and remote river, coastal, flash, and compound exposures. A 1% (1-in-100) AEP and even a 0.2% (1-in-500) AEP are not that rare when regarded over longer timeframes and larger areas (see below). A 0.01% (1-in-10,000) AEP better addresses what is rare—and is often deemed a Probable Maximum Flood (PMF) if the hazard curve becomes nearly flat.

1.3 Flood hazard considers ongoing changes to probability.

Consideration of hazard must account for changing odds associated with climate trends (sea level and precipitation-frequency); landscape modifications (coastal subsidence/erosion and land-cover changes that raise or lower runoff rates); and mitigation improvement/degradation. A hazard curve can increase/decrease significantly over several decades. See Figure 1, light dashed line.

1.4 Flood hazard considers exposure duration.

Single-year odds are convenient and traditional for many purposes but are “rare-sounding.” Converting single-year odds to multi-decadal odds better communicates hazard for long-term exposure planning, e.g., 30 years. Multi-decadal odds can also incorporate future hazard change (compare Columns 1, 3, and 4 in Table 1; also see Figure 1, dark solid line).

1.5 Flood probability over a large area considers multiple independent exposures.

Cumulative flood probabilities for several distant properties, extended regions with many watersheds, and along lengthy levee systems involve combining odds for independent exposures (compare Columns 1, 3, 4, and 6 in Table 1). **Thus, over a longer-**

time frame and a large area, a seemingly rare AEP flood is not that rare!

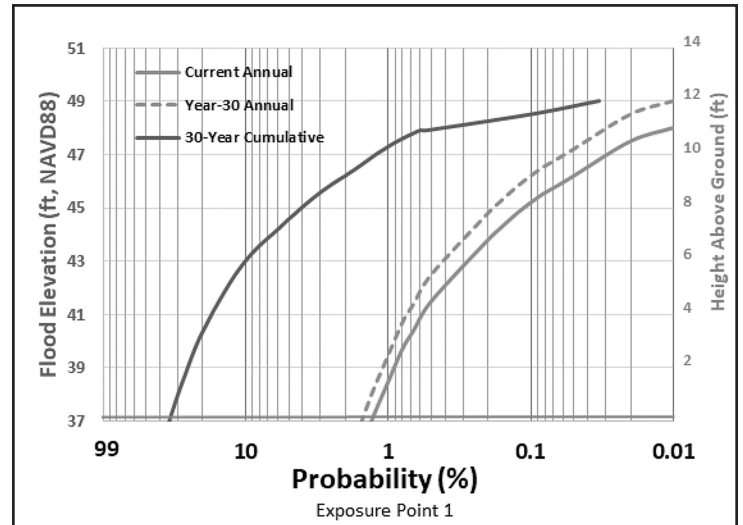


Figure 1. Full-spectrum Hazard Curve

Table 1. Comparison of Annual versus Multi-decadal Odds with Increasing Hazard and Multiple Independent Exposures

1. Single Exposure Chance	2. Exposure Duration	3. Multi-decadal Chance	4. With Increasing Hazard	5. Number of Independent Exposures	6. Cumulative Chance
1% (1-in-100)	30 years	26%	33%	3	70%
0.2% (1-in-500)	30 years	6%	8%	5	33%
0.1% (1-in-1,000)	30 years	3%	4%	10	33%
0.01% (1-in-10,000)	50 years	0.50%	0.70%	20	13%

Lesson 2: Ri\$K

In addition to being one of the deadliest flood disasters in living memory—with **341 direct** and **up to 829 indirect** fatalities in Louisiana alone—Katrina was the most expensive flood disaster in US history, **at over \$200 billion in today’s dollars**. There are four principles to keep in mind regarding flood Ri\$K.

2.1 Flood Ri\$K is “how expensive, how often.”

Ri\$K is priced risk for direct financial consequences. Like hazard it is quantitative, requiring detailed increments of property damage plus related expenses versus probability. A property-specific **Full-spectrum Ri\$K curve** with Cost versus AEP (Figure 2) is directly determined by multiplying the Full-spectrum hazard curve times Fragility (given by a Fragility curve with cost versus hazard magnitude). Additional risk analyses are often required for consequences to life, safety, health, and non-priceable societal/cultural/personal assets.

2.2 Ri\$K curve yields two crucial property-specific metrics. n

2 Reference links are active in the pdf version of this article available on the Louisiana Section website.

Metric 1 is **Expected Annual Cost (EAC)**. Integrating the current Ri\$K curve provides a current-year, probability-weighted “average” cost. Future EACs are derived using future Full-spectrum Ri\$K curves.

Metric 2 is **Present Value**. A stream of future EACs is easily converted into Present Value. See Figure 3.

Ri\$K Present Value is the appropriate indicator of property-specific long-term flood Ri\$K.

2.3 Aggregation of property-specific Ri\$K is straightforward.

Aggregate Ri\$K is easily calculated for stakeholders with multiple properties and for whole watersheds and communities. A coarse approach relies on rudimentary hazard curves, property groupings, and generalized depth-damage correlations. A better, more rigorous granular approach sums property-specific EAC and Present Value. Community Ri\$K can incorporate other economic losses.

2.4 Intensifying concern for property-specific flood Ri\$K metrics is inevitable.

With decades of over-development in floodplain margins, climate change, and accumulating exposure duration—we are experiencing more flood disasters and have a growing need to understand Ri\$K. In the past, appreciating and applying the metrics have been a challenge due in part to a natural cognitive bias that neglects a rare recurring expense, but more importantly due to a lack of data, models, and analyses to estimate the metrics—which is now no longer the case.

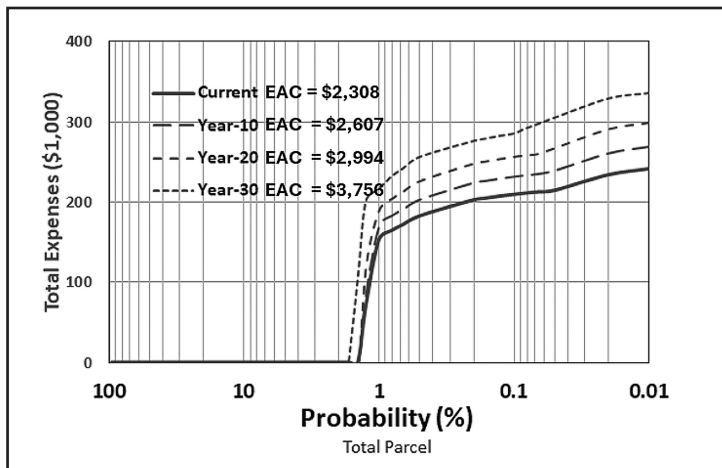


Figure 2. Full-spectrum Ri\$K Curve

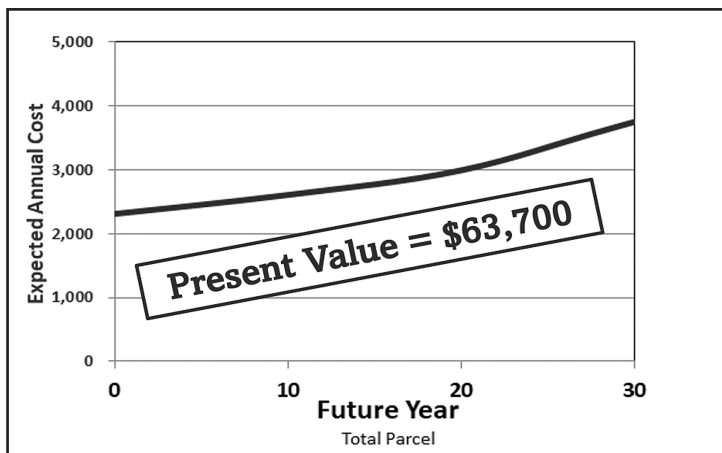


Figure 3. EAC Stream

Lesson 3: Evolving Science

Katrina exposed excessive reliance on antiquated depictions of a “design storm.” Over the following years, tens of millions of dollars were invested to accelerate application of special supercomputers to modeling an array of coastal surge scenarios. Future advances in estimating flood Ri\$K involve four principles.

3.1 Intensifying Ri\$K concern drives continuous improvement of estimates.

Today, there is mounting pressure to constantly leverage the latest advances in science and technology (S&T)—particularly those associated with increasing computer power—for better property-specific estimates. Crucially, the focus is on better **Median estimates**—not base (floor) or conservative (ceiling) estimates. Median estimates do not purposefully under- or over-represent anyone’s property-specific flood hazard or Ri\$K EAC/Present Value.

3.2 Dramatic S&T progress revolutionizes routine estimates.

Five notable ongoing advances are:

- **High-Definition** terrain, hydrography, conveyance-feature, and land-cover datasets, and flood inundation maps (FIMs)—exhibiting both **high-resolution** (1 meter) and **high-accuracy** (importantly with low error at a local-scale).
- Terabyte-scale GIS raster processing and analysis. See the *High-Definition FIM for the August 2016 Flood Amite River Basin* with 2-foot resolution and 0.5-foot Root Mean Square Error by sub-basin.
- High-resolution 2D watershed flood models.
- Cloud resources for simulating hundreds of scenarios and extensive joint probability analysis.
- Assessments of local flood climatology (e.g., *sea level rise* and *precipitation frequency*).

3.3 Accelerating S&T forces more frequent Professional Standard-of-Practice (SOP) updates.

The *ASCE 24-24 Standard for Flood Resistant Design and Construction* issued January 2025 contains significant changes from the 2014 version. A new *ASTM E3429-24 Standard Guide for Property Resilience Assessments* was issued October 2024. Both are likely to be outdated in the near future with S&T advances in Median estimates for hazard and Ri\$K metrics.

3.4 Median estimates are highly volatile.

Frequent SOP updates together with changing forecasts for future conditions mean that data, modeling, and analyses have a short shelf-life (see Figure 4). Volatility and constant updating of Median Estimates are very challenging to individuals and organizations. Ri\$K management requires all interested parties to join in institutionalizing continuous improvement for Median estimates.

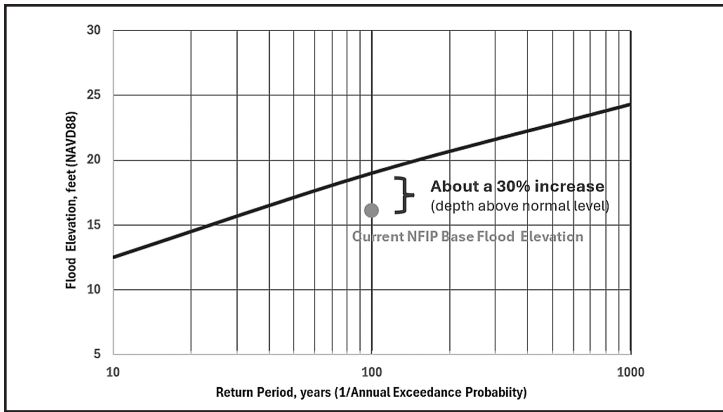


Figure 4. Volatility of Flood Hazard Estimate, Amite River at Port Vincent
Compound Flood Transition Zone Pilot Study for the Amite River Basin, Final Report

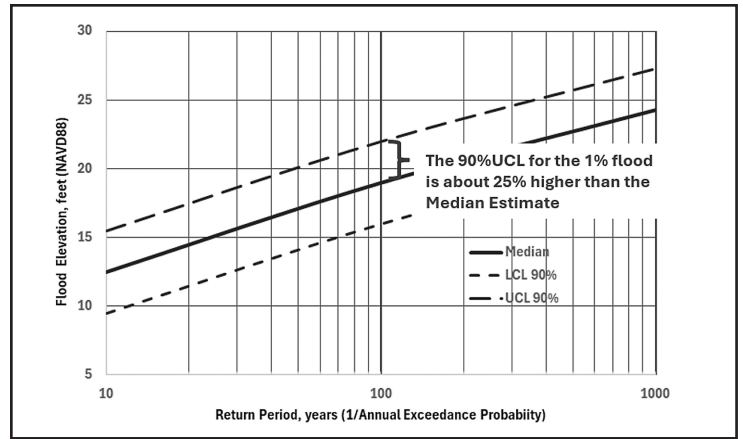


Figure 5. Median Estimate with Uncertainty, Amite River at Port Vincent
Compound Flood Transition Zone Pilot Study for the Amite River Basin, Final Report

Lesson 4: Uncertainty

In addition to volatility, flood hazard and RiSk estimates have significant intrinsic uncertainty. Understanding RiSk involves acknowledging and dealing with four principles on uncertainty.

4.1 The SOP delineates uncertainty bands around Median estimates.

Uncertainty bands are designated according to the desired width of a “confidence interval” for capturing a percentage of possible values; e.g., a 95% confidence interval is wider than a 90% interval, which is wider than an 80% interval. The lower and upper confidence levels (LCL/UCL) can serve as base (floor) and conservative (ceiling) limits where/when specifically needed. Non-exceedance level (NEL) refers to a percentage of values below a UCL; e.g., a 90%NEL corresponds to a 80%UCL.

4.2 The uncertainty magnitude can be very large.

Large uncertainty (see Figures 5 and 6) does not obviate the need for quantified hazard and RiSk. At the same time, it is important to avoid implying over-precision—to admit that estimates are really *scientific guesstimates*. Transparency and clarity support credibility, discourage bias, and encourage improvement.

4.3 Uncertainty differences can also be very large.

At a given AEP, the difference between UCL-versus-Median flood elevation can vary widely by location. **The use of a uniform UCL as a contingency freeboard can create wide disparities in residual hazard referenced in Median AEP.** See Table 2 and Figure 7. The UCL for the 1%AEP surge still water level (SWL) might correspond to a Median AEP of 0.5% at one location versus 0.1% at another location.

4.4 Aggregate uncertainty is lower than property-specific uncertainty.

In aggregating RiSk many property-specific uncertainties “cancel out” (per the Law of Large Numbers). This greatly facilitates many aggregate RiSk management efforts. However, aggregate uncertainty is not appropriate for location-specific uncertainty. See Figure 8.

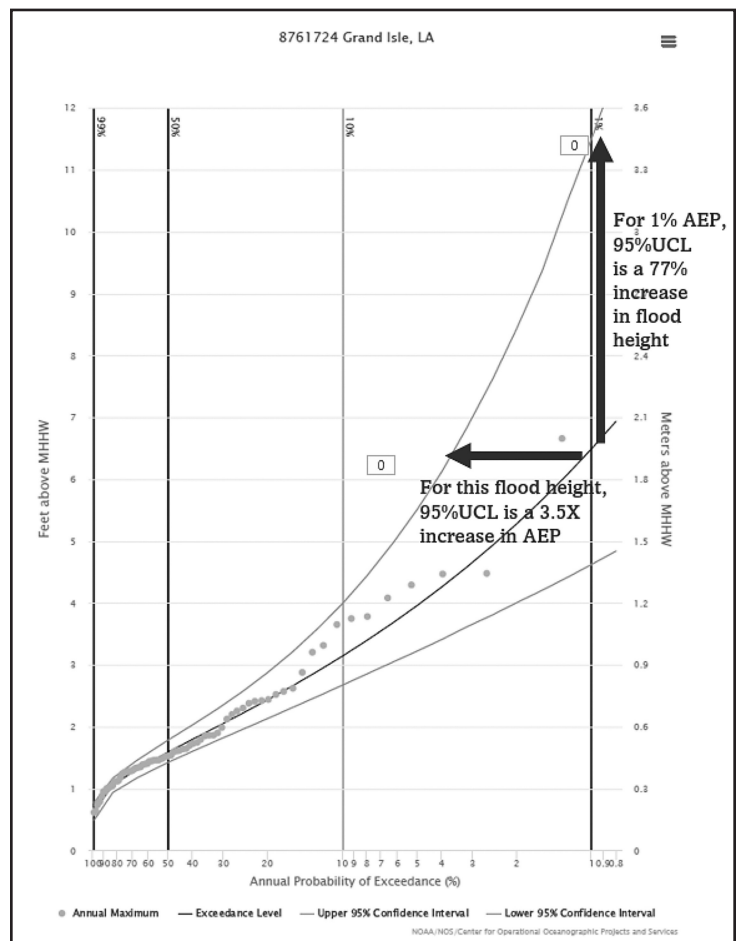


Figure 6. Median Estimate with Uncertainty, Grand Isle, Louisiana, NOAA

Table 2. UCLs for the 1% AEP East-Bank Perimeter SWL
(see Figure 7 for locations)

versus 1%AEP Median varies from 3 to 6 ft;

versus 0.2%AEP Median varies from 0.2 to 1.7 ft

NO East-Bank Hurricane Surge Residual Risk Reduction Report

Location	1% AEP			0.2% AEP	
	Median	UCL	UCL – Median	Median	UCL – Median
SC02-A	12.1	16.0	3.9	15.6	0.4
SC02-B	11.6	15.3	3.7	15.1	0.2
JL01	9.7	12.8	3.1	12.2	0.6
NO01	9.6	12.7	3.1	12.2	0.5
NO10	9.8	12.9	3.1	12.3	0.6
NE01	9.4	12.4	3.0	11.7	0.7
NE02	9.4	12.4	3.0	11.7	0.7
NE10	11.2	14.8	3.6	14.2	0.6
NE11A	14.7	19.4	4.7	18.2	1.2
NE11B	16.2	21.4	5.2	19.9	1.5
NE12A	17.2	22.7	5.5	21.1	1.6
NE12B	18.2	24.0	5.8	22.3	1.7
NE30	9.3	12.3	3.0	11.6	0.7
NE31	9.5	12.5	3.0	12.0	0.5
SB11	18.8	24.8	6.0	23.1	1.7
SB12	17.6	23.2	5.6	21.7	1.5
SB13	17.6	23.2	5.6	21.7	1.5
SB15	14.9	19.7	4.8	18.2	1.5
SB16	17.3	22.8	5.5	21.2	1.6
SB17	18.2	24.0	5.8	22.6	1.4



Figure 7. Locations for Table 2.

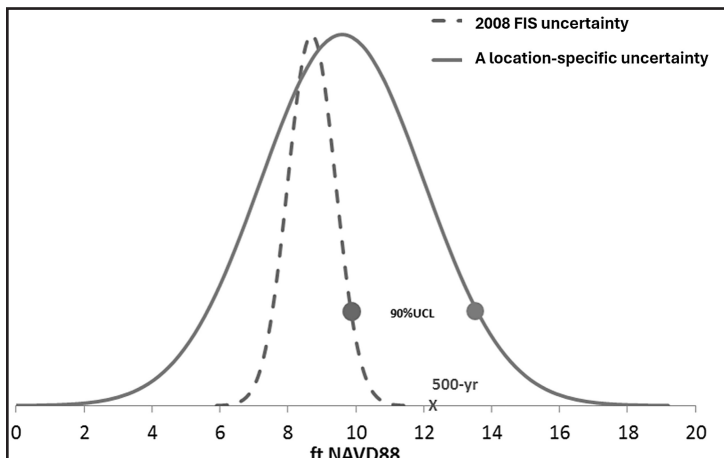


Figure 8. Uncertainty in the 1%AEP Still Water Level at one HSDRRS reach.

NFIP post-Katrina perimeter 1%AEP SWL estimates employed a standard

deviation of 0.7 ft for Aggregate Uncertainty (dashed line);
the standard deviation for one Location-Specific Uncertainty (solid line)
was estimated at 2.4 ft.

NO East-Bank Hurricane Surge Residual Risk Reduction Report

Lesson 5: Responsibility for RiSk Information

Katrina and subsequent major floods underscore principles on the respective RiSk information responsibilities for property-stakeholders, professionals, government officials, and the media.

5.1 Property-stakeholders own the RiSk and have “due diligence” responsibility.

Every property-stakeholder—including developers, builders, owners, buyers, renters, investors, lenders, and private insurers—has flood hazard exposure and bears the brunt of obsolete and/or biased information, including from government sources.

Every property transaction demands flood RiSk due diligence. *Due diligence is the property-stakeholder’s legal obligation to obtain and address relevant information.* (Due diligence can also be regarded as a social duty, the neglect of which contributes to moral hazard.) Intensifying concern for RiSk valuation stimulates more rigorous due diligence, which becomes a major driver of SOP improvement. Cycles of improvement start where/when RiSk stakes are high. See *ClimateScore Global* from Jupiter Intelligence and *The climate challenge for boards: Perspectives from the financial sector* from Fathom, as well as *Unpriced climate risk and the potential consequences of overvaluation in US housing markets*.

5.2 Private sector professionals have a fiduciary duty.

Property managers, agents, brokers, appraisers, inspectors, engineers, and planners assist clients with due diligence. They are exposed to significant liability given climate change, intensifying stakes, rapidly evolving SOP, and volatile Median estimates. See *Oh the Tides They Are a Changin’: Climate Change, Due Diligence, and How the Standard of Care Should Change to Reflect the Current Technologies in Flood Mapping*.

5.3 Government agencies have an obligation for integrity and currentness.

Elected and appointed officials, managers, staff, and contract researchers and professionals administer government RiSk management programs for insurance, mitigation, and assistance. RiSk information transparency, clarity, and accuracy/updates are essential to program effectiveness, efficiency, and fairness. Improving government programs and private-sector due diligence is synergistic. Both benefit from agencies being proactive in facilitating and leveraging private-sector SOP improvements. Examples include FEMA’s *Future of Flood Risk Data* Initiative and Louisiana Watershed Initiative investment in *Statewide Data and Modeling Program*.

5.4 The media has a duty for accurate reporting.

The media has a responsibility to address the facts of evolving SOP Median estimates; to call-out obsolete descriptions of hazard and RiSk; and to question outdated/inadequate property-stakeholder, professional, and government practices. See *Many Americans are buying homes in flood zones—and don’t realize it*.

Lesson 6: Insurance

Only 25% of Katrina-flooded homes, and less than 50% of Louisiana

homes flooded in August 2016, had flood insurance. Nationally, only 30% of homes in the highest RiSk areas currently have flood insurance. Three principles regarding flood insurance are crucial.

6.1 Flood insurance is the foundation for flood ReSiience.

Flood ReSiience is the financial capacity for disaster recovery.

Insurance is collectively self-funded ReSiience by property-stakeholders per their specific RiSk EAC. In this sense “insurance” is distinct from “assistance.” Insurance addresses the cognitive bias discounting of a rare recurring expense, as well as uncertainty in guesstimates. Furthermore, it is synergistic with property-stakeholder RiSk ownership, due diligence, and SOP improvement, and it complements/focuses/improves mitigation and assistance programs. See *Flood Insurance in Communities at Risk of Flooding* and *Flood Risk and the US Mortgage Market*.

6.2 Participation reflects and enhances SuStainability.

A SuStainable property or whole community is one which holds its economic value. Uninsured properties and communities with large amounts of uninsured property have low ReSiience. Properties and communities with low ReSiience are less SuStainable. Hence, poorly insured communities tend to become less SuStainable.

Community SuStainability is also tied to other RiSkS, as well as general demographic and economic vitality—employment, income, tax base for services, and bond rating.

Communities that are reasonably SuStainable can improve participation and SuStainability with a flood insurance mandate for all collateralized property and all public facilities; plus a property tax surcharge on non-participants to cover EAC for abandonment.

But communities with SuStainability challenges face a downward spiral: rising insurance cost erodes economic value and hinders insurance participation, which worsens SuStainability. These communities increasingly seek assistance (see Lesson 10). See the recent 7-part series about insurance and SuStainability in Louisiana: *Breaking Point: Louisiana homeowners reckon with skyrocketing insurance rates* and *Differential flood insurance participation and housing market trajectories under future coastal flooding in the United States*.

6.3 Like banking, insurance requires government oversight.

A sound approach to insurance involves

- Support for a private, competitive market where/when viable—i.e., where/when aggregate long-term RiSk uncertainty is manageable.
- Transparency and stability of entities for their own aggregate RiSk liability.
- A range of corporate structures, such as cooperatives and mutual companies.
- Consistency between property-specific actuarial cost and SOP RiSk EAC—no under/over-pricing of anyone’s insurance.
- High standards of service for disaster response.

See *Climate Change, Disaster Risk, and Homeowner’s Insurance*, Congressional Budget Office, August 27, 2024 and *How will the US flood insurance market evolve amidst rising risks and modeling advancements*, Moody’s, July 2024.

Lesson 7: RiSk Mitigation

Post-Katrina upgrades to the New Orleans perimeter storm surge system cost \$15 Billion and are still not complete. With intensifying flood RiSk concern, pressure for public mitigation investments is mounting across the country. Three critical mitigation principles must be kept in mind.

7.1 Mitigation is largely an investment to reduce future insurance cost.

SOP cost-effectiveness compares **Reduction in RiSk Present Value versus Present Value of Life-Cycle Cost** using SOP data, modeling, and analysis: e.g., based on Full-/pectrum hazard encompassing all exposures and future change (limited scenarios are only for initial screening). Properties/community should be otherwise SuStainable. **The bottom line: it is hard to justify mitigating RiSk that is cheaper to insure.** For example: In 2006 Congress only authorized the Corps of Engineers to rebuild/upgrade the perimeter system as needed for National Flood Insurance Program certification, thus assuming evacuation as well as insurance of residual RiSk. Other benefits can sometimes tip the scales: safety/health, ecosystem enhancement, recreation, reducing unpriced risk, and reducing the cost of assistance.

7.2 Mitigation planning requires a System Approach.

The System Approach addresses the long-term performance of all relevant measures and components working together to reduce the aggregate flood RiSk in a given hydrologic area (catchment, watershed, basin, polder, etc.). All alternatives—structural and non-structural measures and components—must be on the table. The goal is overall optimization—getting the **Most Bang-for-Buck**. Evaluation of alternatives also needs to account for adverse flood, environmental, economic, social, and cultural impacts. See *A Systems Engineering Based Assessment of The Greater New Orleans Hurricane Surge Defense System Using the Multiple Lines-of-Defense Framework*.

7.3 Mitigation systems benefit from a single authority.

The system’s long-term performance benefits when the authority is accountable to the area’s property-stakeholders and possesses relevant capabilities for management, engineering, operations, and maintenance, including periodic upgrades. The authority should direct the planning and implementation of all measures and components and oversee other agencies involved in aspects of the system.

Lesson 8: Limitations of RiSk Mitigation

Major failures of the New Orleans perimeter system during Hurricane Katrina allowed more than 300,000 acre-feet of water to inundate three urban polders (bowls) (see Figure 9 and Table 3)—causing most of the previously noted deaths and destruction. **These failures are a dire warning against ignoring the limitations of any flood mitigation measure—and highlight three principles.**

8.1 Mitigation is NOT “protection.”

“Protection” systems have an explicit goal to safeguard lives and

must be reliable for at least the 0.01% AEP flood (1-in-10,000). **Mitigation is only a partial solution.** Mitigation authorities and community leaders must establish evacuation/sheltering contingency plans for Residual Life and Safety Risk. (Sadly events such as the *Nursing home company which evacuated residents to an ill-equipped warehouse during Hurricane Ida in 2021* continue to occur.)

They must also address insurance for residual Ri\$K.

Example: the Corps of Engineers renamed the upgraded New Orleans perimeter system from the “Hurricane *Protection System*” to the “Hurricane and Storm *Damage Risk Reduction System*” (HSDRRS).

8.2 Mitigation always has residual Ri\$K. Property-specific estimates of with-mitigation Full-spectrum hazard curves and Ri\$K metrics are essential, addressing:

- The performance limits of all measures/components and identification of system weak links. Note that modest added performance for a component is not a “Factor of Safety” (e.g., pump capacity, erosion resistance).
- All failure scenarios (e.g., floodwall/levee overtopping and breach thresholds, pump station failures,) and life-cycle impediments (e.g., gate operations, conveyance system maintenance).

8.3 Mitigation authorities must directly address residual Ri\$K.

Elected and appointed officials and program managers for public flood mitigation programs must commit to:

- **Explicit communication—transparency and clarity—about ALL of 8.1 and 8.2.**
- Professional independence.

- Improving SOP Median estimates as required by S&T advances.
- Confronting coordination and oversight issues.

Community leaders, property-stakeholder organizations, and the media must insist on these commitments.

Example 1: Roughly 66% of the Orleans Metro Polder flood volume came from three floodwall collapse breaches (no overtopping) under-designed for soil conditions. Roughly 88% of the St. Bernard Polder flood volume came from eroded levees under-designed for the selected fill material. Under-design was fostered by leaders who avoided dealing explicitly with system limitations.

Example 2: Table 4 shows the post-Katrina 1%AEP HSDRRS design (using an UCL for wave overtopping) resulted in significant differences in SWL freeboard around the East-Bank perimeter and thus residual hazard.

Example 3: Figure 10 gives a sense of New Orleans east-bank HSDRRS residual inundation hazard for multi-decadal multiple independent exposures to 1% AEP wave overtopping.

Example 4: As recently reported in The Advocate (December 17, 2024), five companies that helped design and install a concrete barrier along Interstate 12 median—which worsened inundation upstream during the August 2016 Flood—agreed to settle a lawsuit for \$21 million. Cross conveyance openings were sufficient for typical “design storms” but not for the extreme >500-year event.

Example 6: Levees.org emphasizes the role of professional negligence in the New Orleans perimeter system failures during Katrina. However, more attention should be paid to the role of elected and appointed officials, and senior agency managers, in avoiding explicit treatment of system limitations, as well as the fragmentation of responsibilities among federal, state, and various local agencies.

Table 3. 16 Major Perimeter System Failures During Hurricane Katrina
(see Figure 9 for failure locations)
Managing Hurricane Surge in the Supercomputing Era, Parts II

Polder/Location	Type	Inflow Volume	
		Acre-Ft	Percent
Metro Polder (27,268 acres)		95,072	100
1. 17th St Outfall Canal I-wall	Collapse Breach	32,399	34.1
2. Orleans Ave Outfall Canal I-wall	Opening	89	0.1
3. London Ave Outfall Canal I-wall, North	Collapse Breach	23,555	24.8
4. London Ave Outfall Canal I-wall, South	Collapse Breach	6,484	6.8
5. IHNC West, North of Florida Ave	Overtopping & Breaches	25,022	26.3
6. IHNC West, South of Florida Ave	Overtopping	7,524	7.9
NO East Polder (14,792 acres)		53,578	100
7. IHNC East I-wall	Collapse Breach	757	1.4
8. IHNC East	Overtopping	12,494	23.3
9. Citrus Back Levee (IHNC to Paris Rd)	Overtopping	33,289	62.1
10. Citrus Back Levee (East of Paris Rd)	Overtopping & Breaches	7,037	13.1
St. Bernard Polder (20,015 acres)		154,885	100
1. IHNC East I-wall, South of Florida Ave	Collapse Breach	2,166	1.4
2. IHNC East I-wall, North of Claiborne Ave	Overtopping & Breach	13,107	8.5
3. IHNC East Floodwall	Overtopping	3,400	2.2
4. MRGO and 40 Arpent Levees (IHNC to Paris Rd)	Overtopping & Breaches	32,260	20.8
5. MRGO and 40 Arpent Levees (Paris Rd to Violet Canal)	Overtopping & Breaches	43,276	27.9
6. MRGO and 40 Arpent Levees (Violet Canal to Reggio)	Overtopping & Breaches	60,677	39.2



Figure 9. Location of 16 Major Perimeter System Failures During Hurricane Katrina

Table 4. Post-Katrina HSDRRS Still Water Level Freeboard (see Figure 7 for locations)

Freeboard is shown for both the 1% and 0.2% AEP, and at the median and 80% UCL

NO East-Bank Hurricane Surge Residual Risk Reduction Report

Location	Design Crest (ft NAVD88)	1% AEP Freeboard (ft)		0.2% AEP Freeboard (ft)	
		Median	UCL	Median	UCL
SC02-A	15.5	3.40	-0.47	-0.10	-6.09
SC02-B	14.0	2.40	-1.31	-1.10	-6.90
JL01	16.5	6.80	3.70	4.30	-0.38
NO01	16.0	6.40	3.33	3.80	-0.88
NO10	15.0	5.20	2.06	2.70	-2.02
NE01	13.0	3.60	0.59	1.30	-3.19
NE02	15.5	6.10	3.09	3.80	-0.69
NE10	17.0	5.80	2.22	2.80	-2.65
NE11A	22.0	7.30	2.60	3.80	-3.19
NE11B	25.0	8.80	3.62	5.10	-2.54
NE12A	28.0	10.80	5.30	6.90	-1.20
NE12B	29.0	10.80	4.98	6.70	-1.86
NE30	14.5	5.20	2.22	2.90	-1.55
NE31	16.5	7.00	3.96	4.50	-0.11
SB11	29.0	10.20	4.18	5.90	-2.97
SB12	27.5	9.90	4.27	5.80	-2.53
SB13	26.5	8.90	3.27	4.80	-3.53
SB15	26.5	11.60	6.83	8.30	1.31
SB16	26.5	9.20	3.66	5.30	-2.84
SB17	26.5	8.30	2.48	3.90	-4.78

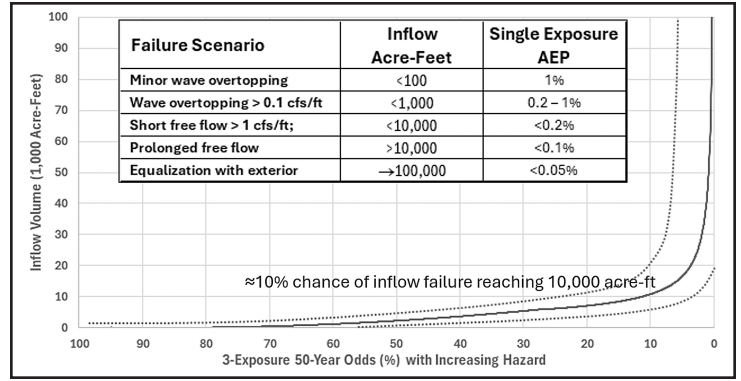


Figure 10. Simplified East-Bank Residual Hurricane Surge Inundation Hazard

Due to its size and configuration, the East-Bank HSDRRS has multiple independent exposures.

The table shows simplified single exposure AEP for inflow failure; the curve illustrates 3-Exposure 50-yr odds with increasing hazard; the actual failure odds at each reach vary due to varying freeboard.

NO East-Bank Hurricane Surge Residual Risk Reduction Report

Lesson 9: Nature-Based Mitigation

Since Katrina, interest has accelerated in enhancing natural features to mitigate some relevant flood scenarios, as well as to provide other benefits. Two prominent examples are the **Multiple Lines of Defense Strategy** for coastal landscapes (see Figure 11) and the **Living with Water Approach** developed for urban areas like New Orleans. Nature-based flood mitigation entails multiple—often competing—goals, thus demanding careful attention to two principles.

9.1 The same mitigation lessons (8 and 9) apply.

Like other mitigation measures, nature-based measures offer only a partial solution—requiring SOPs for quantifying reduction in Risk Present Value (e.g., limited scenarios are only for initial screening) and explicit communication regarding the property-specific residual hazard and Risk EAC and Present Value.

9.1 The System Approach extends to other benefits.

In addition, nature-based measures require SOPs for granular quantification of long-term ecosystem, recreation, and aesthetic, benefits; Bang-for-Buck evaluations in meeting these other goals; and, moreover, **transparency and clarity for trade-offs between competing goal benefits.**

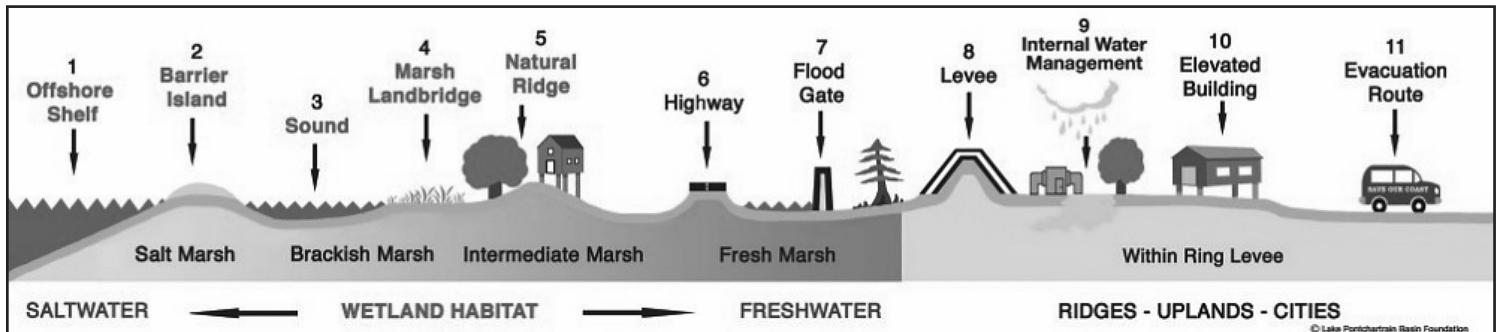


Figure 11. Multiple Lines of Defense Strategy

Lesson 10: Assistance

Escalating flood hazard and intensifying flood RiSk concern are increasing pressure for government assistance. **Re\$ilience assistance faces two priorities.**

10.1 Our top priority is minimizing distortion of property-specific flood RiSk.

Rising insurance cost exacerbates frustrations about RiSk information accuracy and precipitates agitation over unfairness. See *Louisiana is the most overcharged state for flood insurance*. Before turning to issues of fairness, government must prioritize information accuracy, and expediting progress from crude algorithms (e.g., Risk Rating 2.0) toward insurance pricing for every property consistent with SOP Median estimates for EAC. Transparency and clarity also needed to discourage exploitation of ignorance.

10.2 Our second priority is establishing durable solutions to political issues.

These include:

- Who is deserving? On what basis—equity, affordability?
- Which assistance option is appropriate?
 1. Insurance and/or property value subsidy.
 2. Recovery grants/loans.
 3. RiSk mitigation subsidy.
 4. Property buyout subsidy (convert to green space)—often the preferred option for properties that are not Su\$tainable.

Nos. 1 and 2 can distort RiSk, while Nos. 3 and 4 can reduce costs for Nos. 1 and 2.

- How much?
- How to fund? externally—e.g., federal/state support for local watershed; internally—some property-stakeholders supporting others.
- How to administer? e.g., address bureaucracy and coordination issues.
- See *Inequitable patterns of US flood risk in the Anthropocene* and *Coalition for Sustainable Flood Insurance*.

Conclusion

Flood Re\$ilience in the face of escalating disasters demands the direct, prompt, and complete adoption of these ten fundamental lessons and associated principles. As noted in the Introduction, there are long-established precedents when it comes to taking similar sensible approaches to other hazards. It may even be of interest to recall the 2,000-year-old Proverb of the Wise and Foolish Builders:

A wise man built his house on the rock—the rain came down, the streams rose, and the winds blew and beat against that house; yet it did not fall, because it had its foundation on the rock.

A foolish man built his house on sand—the rain came down, the streams rose, and the winds blew and beat against that house; and it fell with a great crash.

(Jesus of Nazareth, from the Sermon on the Mount, Matthew 7)

Bob Jacobsen PE

Bob grew up in New Orleans and earned advanced degrees in both environmental policy and environmental engineering from LSU. Over his four-decade career he has worked with a range of both private and public sector entities—from the largest to the smallest. Beginning in the early 1980s with projects on groundwater contamination he developed a passion for innovative risk-based approaches to complex hydrologic challenges. While serving as the lead consulting hydrologist to the New Orleans east-bank and Baton Rouge regional flood agencies he authored advanced evaluations for the nation's first (2005) and fourth (2016) most expensive floods. (In the mid-2000s Bob directed the first 2D high-resolution simulation of shallow wetland circulation using a high-performance, multi-core computer—for assessing a Mississippi River diversion.) He is a Past-President of the Louisiana Section of the American Society of Civil Engineers and has given dozens of environmental, coastal, and flood hydrology presentations to a wide range of professional, business, government, academic, and citizen audiences.



Exhibit and Sponsorship

Interested in exhibiting or sponsoring at ASCE 2025?

To secure your sponsorship or exhibit booth, or for more information, please contact Brian Hodges at 703-295-6349 or bhodges@asce.org.

Convention Prospectus will be available soon.

ASCE Region 5 News

By Chris Humphreys & Tonja Koob Marking

MRLC for Regions 1, 2, 4 & 5 (WSBIL, ERYMC, WSCL)

The purpose of the Multi Region Leadership Conference (MRLC) is to provide a venue for upcoming ASCE leadership to gain knowledge of the Society and their Region, interact with students, younger members, section, branch, and institute leaders, while gaining personal leadership skills and learning the importance of networking. These conferences provide an excellent mix of leadership training and information on ASCE resources, activities, and programs. The MRLC not only assists in each attendees leadership roles but provides Professional Development opportunities. The 2025 MRLC was held on January 30 – February 1, 2025 in Memphis, Tennessee.

Participation in the Conference strengthens and expands the programs and activities of Sections and Branches through the interchange of ideas, information and experiences, while it exposes incoming officers to the tools needed to be effective leaders. The MRLC is made up of three separate events that take place concurrently: the Workshop for Section, Branch, and Institute Leaders (WSBIL), the Workshop for Student Chapter Leaders (WSCL), and the Eastern Regional Younger Member Council (ERYMC). These three events are catered towards leaders at different stages of their ASCE journey, and the proximity and coordination of the joint conference provide further opportunities for networking and exchanging ideas across demographics within the regions.

The Louisiana section was well represented at the 2025 MRLC. Louisiana Section President Elect Katherine Foreman, PE; Region 5 Governor Tonja Koob-Marking, PE; Jesse Noel, PE, Director from and president elect of the New Orleans Branch; and Joshua Olivier, PE, Louisiana Section Student Activities and Awards Chair and Baton Rouge Branch President Elect were all in attendance.

The conference kicked off on Thursday, January 30 with the Region 5 Assembly, which provided an in-person opportunity for Region 5 leaders to meet their board of Governors and learn about resources

available to the sections and branches through the Region. A social was held that evening at the Memphis Pyramid.

The first full day of the conference covered a variety of topics including Global Geographic Resources, Knowing your Audience, and Legal Issues for Sections and Branches. A speech was given by ASCE President-Elect Marsha Anderson Bomar, PhD, F.ITE, AICP, ENV SP, F.ASCE. A Q&A session was also presented by society leaders including the President-Elect; ASCE President Feniosky Pena Mora, Sc.D, PE, NAS, CCM, F.CIOB, NAC, Dist.M.ASCE, and Executive Director Tom Smith, ENV SP, CAE, F.ASCE. A social was held that evening at Grind City Brewing, Co.

The second day of the conference included presentations on a Mock Board Meeting, Proposed Membership Grades, and Professional Ethics. Brock Barry, PhD, PE, F.ASCE, Professor, Civil Engineering Division, United States Military Academy, West Point, gave engaging presentations on Putting the “Wow” Factor in your Presentations and the keynote speech “Difficult Conversations.” Day two also included Best Practice Focus Sessions on key issues for Sections and Branches such as Engaging Institute Chapters in Section and Branch Activities, Launching an Infrastructure Report Card, Engaging Student Members in Local ASCE Activities, Enhancing Your Communications with Informz, and Retaining Student Members After Graduation. Jesse Noel, PE, Director from the New Orleans Branch, led the discussions on Engaging Institute Chapters in Section and Branch Activities.



Chris Humphreys



Tonja Koob Marking



Louisiana Section attendees at the 2025 MRLC: Katherine Foreman, PE, Louisiana Section President Elect; Tonja Koob-Marking, PE, Region 5 Governor; Jesse Noel, PE, Director from and President Elect of New Orleans Branch; and Joshua Olivier, PE, Student Activities and Awards Chair and Baton Rouge Branch President Elect.



Jesse Noel, Katherine Foreman, and Joshua Olivier attended the social held at Grind City Brewing, Co. at the 2025 MRLC.



Jesse Noel, PE, Director from the New Orleans Branch, led the Best Practice Focus Session: Engaging Institute Chapters in Section and Branch Activities.



Region 5 Attendees at the 2025 MRLC.



REGISTRATION FORM

2025 ASCE Louisiana Section Spring Conference

May 29 – 30, 2025

Shreveport Convention Center, 400 Caddo St, Shreveport, LA 71101

PART 1. REGISTRANT INFORMATION (*REQUIRED)			
a. First Name*	b. Last Name*		
c. First Name as to Appear on Name Tag*	d. Class <div style="text-align: right; margin-top: 5px;"> <input type="checkbox"/> PE <input type="checkbox"/> PLS <input type="checkbox"/> PhD <input type="checkbox"/> EI </div>		
e. ASCE Member Number* (If Applicable)			
f. Company Name			
g. Street	h. City	i. State	j. Zip
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PART 2. INDIVIDUAL REGISTRATION (CHECK ALL THAT YOU WILL BE NEEDING)			
<i>Please see cover sheet for registration inclusions</i>	ON or BEFORE May 5, 2025	AFTER May 5, 2025	
STUDENT REGISTRATION:			
Technical Sessions Only (<i>Does NOT include Luncheons</i>)	FREE _____	FREE _____	
Thursday Luncheon	\$25 _____	\$25 _____	
Thursday Night Networking Event**	\$20 _____	\$20 _____	
Friday Luncheon/Awards Banquet	\$25 _____	\$25 _____	
TWO-DAY/FULL REGISTRATION:			
<i>Includes Lunches but NOT Networking Event**</i>			
ASCE Member (<i>Indicate member number in Part 1</i>)	\$250 _____	\$290 _____	
Non-Member	\$290 _____	\$330 _____	
ONE DAY REGISTRATION:			
<i>Includes Lunch but NOT Networking Event**</i>			
ASCE Member (<i>Indicate member number in Part 1</i>)	\$160 _____	\$200 _____	
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ADDITIONAL NETWORKING EVENT**:			
Thursday Night Networking Event**	\$20 _____ (Per Person)	\$20 _____ (Per Person)	
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For questions concerning the conference, contact Amanda Gordon at agordon@half.com



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<i>Exhibitors will receive an 8' X 10' area with a table and two chairs. Registrants may be included in the package for an additional charge as shown. Additional resources available upon request (fees may apply). Donation of door prizes would be appreciated. Lunches included in Exhibitor Package.</i>	_____	@ \$400.00 =	\$ _____
	_____	(No Registrants) '@ \$500.00 =	\$ _____
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<i>* Please list if additional resources are needed - power, Wifi, etc. (May be subject to additional costs)</i>	<u>Additional Resources:</u>		
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<i>Friday Lunch</i>	_____	@ \$25.00 =	\$ _____
		TOTAL AMOUNT REMITTED	\$ _____

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For questions, contact Amanda Gordon at agordon@half.com or 318-575-4230.

ASCE-COPRI Louisiana Chapter News

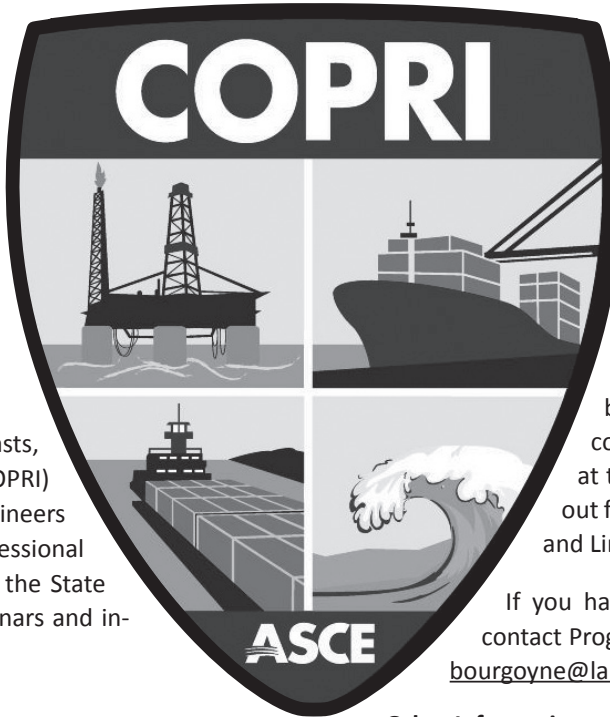
By Kiara Horton, EI, Director – Communications



COAST, OCEANS,
PORTS AND RIVERS
INSTITUTE
Louisiana Chapter



**Kiara Horton, EI
Director – Communications**



The Louisiana Chapter of the Coasts, Oceans, Ports, and Rivers Institute (L.COPRI) of the American Society of Civil Engineers (ASCE) promotes membership, professional development, and visibility throughout the State of Louisiana by conducting virtual webinars and in-person events.

Scholarship Announcement

L.COPRI traditionally awards annual scholarships to students (1 graduate and 1 undergraduate) studying Civil, Coastal, Ocean or Environmental Engineering, or a Coasts, Oceans, Ports, or rivers related field. Be on the lookout for scholarship application form.

Application deadline is March 21, 2025. Scholarship winners are typically presented their checks during L.COPRI's annual spring seminar.

For application inquiries please contact Sergio Aviles, Scholarship Director at sergio@aps-testing.com

Upcoming Events

Our half-day Spring Seminar is currently being planned, and updates will be coming soon. The tentative date is April 9th at the Tulane Bywater Institute. Keep a look out for future event announcements via email and LinkedIn.

If you have any general event questions, please contact Programs director Molly Bourgoyne at molly.bourgoyne@la.gov.

Other Information

The activities of L.COPRI includes seminars, workshops, and other activities to benefit all ASCE and COPRI members. Members do not have to be an engineer to join COPRI. The Institutes of ASCE

are formed for the benefit of ASCE and non-ASCE members to participate and interact with other professionals interested in coastal, oceans, ports, and riverine efforts in Louisiana. We would like to extend an invitation to our members to submit feedback and ideas for upcoming webinars and events. Please submit these ideas to kiara.horton@freese.com, and stay-tuned for a meeting invite if you are a member of our L.COPRI email list.

Also, please don't forget to follow us on LinkedIn!

Professional Achievement Awards

National COPRI offers several opportunities to recognize our colleagues for their professional achievements. For more information on individual, project, research, and younger member award opportunities, please visit <https://www.asce.org/communities/institutes-and-technical-groups/coasts-oceans-ports-rivers-institute/awards>.



The 2025 Report Card for America's Infrastructure was released on March 25, 2025, at Planet Word Museum in Washington, D.C. Following the release, ASCE held its Solutions Summit with industry leaders and officials from all levels of government to discuss the next steps to ensure America's infrastructure grades keep rising and the importance of ongoing investment in the systems every American depends on.

ASCE-G-I Louisiana Chapter News

By Ricardo C. de Abreu, PhD, PE, BCGE, F.ASCE, G-I Chairman



Ricardo C. de Abreu, PhD, PE,
BCGE, F.ASCE
G-I Chair

Chairman's Message: A Strong Start of the Year

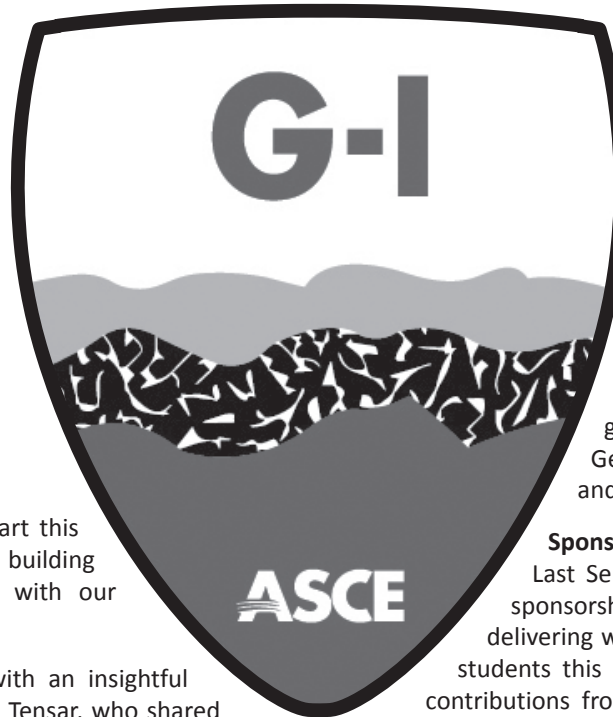
The GI-LA Chapter is off to a great start this year, and we are eager to continue building momentum and engage even more with our Louisianian community!

In January, we kicked off the year with an insightful webinar led by Mr. David Fucqua from Tensar, who shared his expertise on designing working platforms using the innovative T-value methodology.

February was equally exciting as we had the privilege of hosting an exciting webinar with Prof. Dimitrios Zekkos from the University of California at Berkeley. His presentation on recent examples of incorporating intelligence in Geo-Structures captivated over 100 participants.

Looking Ahead

As we look to the future, we are thrilled to announce that Dr. Guoming Lin will be joining us in March for a webinar! Dr. Lin, a



vice president and senior geotechnical consultant with Terracon Consultants in Savannah, Georgia, will tackle critical infrastructural challenges stemming from the 2022 bulkhead collapse at the ferry landing on Hutchinson Island, which left a significant crack in the brick-paved plaza.

In April, we have another great lineup with Mr. Jesse Rauser from LaDOTD and Dr. Xin Pen from Geosyntec Consultants, who will present LaDOTD's groundbreaking efforts in advancing Geotechnical Data Management for Design and Construction.

Sponsorship Drive and More

Last September, we launched a comprehensive sponsorship drive to ensure we can continue delivering webinars and events for professionals and students this year. We are humbled by the generous contributions from several companies to our chapter! If your company is interested in sponsoring the Louisiana G-I chapter, please reach out to me directly at ricardo@fdaengineers.com, or contact us at G-I geoinstla@gmail.com. for more details.

As we forge ahead, I encourage each of you to share your ideas and insights as we navigate our exciting future together. Don't hesitate to contact me at ricardo@fdaengineers.com, and remember to follow us on LinkedIn (www.linkedin.com/company/geo-institute-louisiana-chapter)!

Thank you for your dedication to our field. I'm excited to keep engaging with each of you!

ASCE Government Relations Committee

By ASCE Government Relations



2025 Legislative Fly-In updates in May!

Happening Mar 25 - Infrastructure Report Card Release – Washington, DC

With over 150,000 members, ASCE has a powerful voice on Capitol Hill and in statehouses across the country. Be the first to know about legislation that matters – become a Key Contact today.

Advocating for the nation's infrastructure and the civil engineering profession is a top priority for ASCE. Find out how you, your section, your branch, or your region can engage in policy decisions at all levels of government and educate policymakers about the importance of infrastructure investment, as well as how civil engineers are protecting public health and safety.

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<http://message.asce.org/2016KeyContactRecruitmentCampaign?>

ASCE-T&DI Louisiana Chapter News

By Ronald Schumann, Jr, PE, Chairman



TRANSPORTATION
& DEVELOPMENT
INSTITUTE
LOUISIANA CHAPTER



Ronald Schumann, Jr, PE
T&DI Chair

Election of New Officers

The Chapter would like to acknowledge the contributions of our 2023-2024 officers. For the 2024-2025 fiscal year, Ronnie Schumann, PE, has assumed the Chair position; Roy Payne, PE, will serve as Vice Chair; Jim Simmons, PE, will continue to serve as Treasurer; and Elba Urbina Hamilton, PE, will serve as Newsletter Editor.

Louisiana T&DI Scholarship Program

Since 2012 T&DI has been awarding two \$500 scholarships to junior and senior level university students who intend to pursue a career in the field of transportation. Funding for the scholarships is provided by the T&DI seminar proceeds. Applicants are required to submit a transcript with two academic recommendations, along with an essay regarding their interest in transportation studies to their advisers early in the Fall semester. The applications are then reviewed, and the recipients are selected by the T&DI Scholarship Subcommittee.



Jesse Bertucci



Brant Courville

In December, the scholarship subcommittee selected Jesse Bertucci and Brant Courville as the recipients of the 2024-2025 T&DI scholarships. Bertucci is pursuing a BS in Civil Engineering from Louisiana Tech University and Courville is pursuing a BS in Civil Engineering from McNeese University. They are both scheduled to graduate in May 2026. Congratulations to the 2024-2025 scholarship recipients!

Ethics, Virtual Seminar

On December 3rd, the T&DI Louisiana Chapter hosted our annual



virtual seminar on the topic of Ethics. Our common purpose as professional engineers is to safeguard life, health, and property and to promote the public welfare. Professional ethics concerns the standard of professional conduct and responsibility required of a professional engineer. Our seminar discussion addressed issues like perception of wrongdoing, correcting mistakes, character, competency, accountability, conflicts of interest, trust, integrity, and avoiding deceptive acts.

The seminar was presented by Christ Knotts, PE, F. ASCE, BC.WRE. Chris has over 40 years of civil engineering experience. He began his career in the private sector, then devoted over 25 years in various roles for the Louisiana Department of Transportation and Development (LADOTD) and the Louisiana Department of Natural Resources. He held the position of LADOTD Chief Engineer – supervising 550 employees and overseeing the agency's Office of Engineering – for the final six years before retiring from LADOTD in 2023.

Chris' dedication to the engineering professionalism is evident through his service to the National Council of Examiners for Engineering & Surveying (NCEES), where he served as national President in 2020-2021. Additionally, he was Member President for the Louisiana Engineering Society in 2019-2020 and was on the Louisiana Professional Engineering and Land Surveying Board (LAPELS) from 2013 through 2019. He also served as the Louisiana Section President of ASCE in 2009-2010.

Chris holds two degrees from Louisiana State University: A Bachelor of Engineering Technology and a Bachelor of Science in Civil Engineering. He earned a Master of Engineering in Civil Engineering (Structures) from the University of Texas at Arlington.

In November 2023, Chris joined the Baton Rouge office of Neel-Schaffer as Director of Business Development for Louisiana operations.

Advanced Survey Technologies Seminar

On November 7th, the T&DI Louisiana Chapter hosted the Advanced Surveying Technologies Seminar in Baton Rouge. The seminar was designed to showcase the advanced technologies that are impacting the dynamic field of transportation planning and design. Integrating advanced technologies is crucial for delivering precise and actionable survey data to optimize project efficiency. This seminar explored the application of three transformative technologies—photogrammetry, LiDAR, and sonar—in the context of transportation projects.

A significant portion of the seminar focused on the types of

deliverables these technologies produce. Understanding the specific deliverables—such as digital elevation models (DEMs), contour maps, 3D point clouds, and bathymetric charts—empowers transportation planners and engineers to make informed decisions tailored to their project’s requirements. By aligning the right type of deliverable with the specific needs of a project, professionals can streamline workflows, expedite project schedules, and significantly reduce costs.

Following the seminar, attendees participated in a technology demonstration showcasing the practical applications and benefits of photogrammetry, LiDAR, and sonar in real-world transportation projects. This demonstration provided attendees with hands-on experience and a deeper understanding of how to implement these technologies effectively.

The seminar was presented by Brad Holleman, PLS, PE. Brad is a seasoned professional in the fields of civil engineering and land surveying. He earned his Bachelor of Science in Civil Engineering and a Minor in Land Surveying from Louisiana State University (LSU) in 2009. Following his academic achievements, Brad obtained his Professional Land Surveyor (PLS) certification in 2012, and his Professional Engineer (PE) license in 2022.

Brad’s career is marked by significant contributions and leadership within the surveying community. He served as the President of the Louisiana Society of Professional Surveyors (LSPS) in 2020, and was an active member of the LSPS Executive Board from 2016 to 2021. His expertise and dedication to the profession have earned him the prestigious Surveyor Excellence Award in 2022.

In recognition of his professional excellence and impact, Brad was honored as one of the Baton Rouge Business Report’s Forty under 40 in 2023. His career continues to be driven by a commitment to innovation and excellence in land surveying and serves as Senior Vice President of Surveying and Advanced Measurements at Forte and Tablada, Inc.

Louisiana State Science and Engineering Fair

T&DI will again be participating in the Louisiana State Science and Engineering Fair this year. The event will take place March 24-26. As in past years, members of T&DI will serve as judges and present awards to the students with the top transportation and development related projects. The awardees will be announced in the next Newsletter issue.



SAVE THE DATE!

Call for Potential Speakers and Exhibitors!

We are proud to announce the dates for the 35th Annual Louisiana Civil Engineering Conference and Show. This event, a joint effort from the New Orleans Branches of ASCE and ACI, is the premiere gathering for the Civil Engineering community in the Greater New Orleans Area. We are in the process of soliciting sponsors and exhibitors and establishing the technical program for the fall conference which will be held on September 24 & 25, 2025 at the Pontchartrain Center in Kenner, Louisiana.



For additional information on the conference, please visit our web site at www.LCECS.org

Branch News



ACADIANA BRANCH

By Emily Faulk, PE, Branch President

ASCE Acadiana ended 2024 on a high note celebrating the holidays at our Annual Christmas Social held at Rock'n'Bowl. This social was held as a joint event with LES, ACEC, and Ardaman & Associates sponsoring. I would like to thank all who attended and helped to make our last event of the year a great success!

We started out the year strong by holding a very informative presentation about the Evolving Engineering Workforce by Mr. Greg Sepeda. Mr. Sepeda's presentation consisted of the data he compiled from LAPELS and the university engineering programs

in the area to make a projection for the future of Professional Engineers in Louisiana. More specifically, what this means to our profession, and how must businesses evolve to address challenges and opportunities presented by these changes. This presentation opened up a great discussion on what the future engineering profession holds and how we are working in an ever-changing environment.

Moving forward, we have a luncheon planned in March where LAPELS will be giving an Ethics presentation, and in April we will have Ms. Mary Anne Wolf presenting on Engineers' Liability and Risk Management. I would like to thank all the members of the ASCE Acadiana Branch for their continued support!



BATON ROUGE BRANCH

By Jack Koban, PhD, PE, PG, Branch President

In November, the ASCE Baton Rouge Branch hosted our final luncheon of the year at Drusilla Seafood with guest speaker Andrew Murell who discussed his work with the City of St. George Transition District before wrapping up our events for the 2024 calendar year with our annual Christmas Party held

on December 14 at Bocage Racquet Club. The Christmas Party was immediately followed by the younger member after party at Hayride Scandal. Both events were well attended and gave our board and members valuable opportunities to network and celebrate the holiday season. We sincerely thank all our sponsors who supported the branch throughout the year and to all those who have committed to support us in 2025. We strive to organize an informative and enjoyable program of events each year and we can't do it without the generosity of our sponsors.

As we begin a new year, the Baton Rouge Branch board will once again be sending at least one representative to the Multi-Region Leadership Conference which is to be held the week of January 31st in Memphis, TN. This annual event provides a chance to interact with other ASCE branches and develop leadership skills for younger professional and student members of the organization.

Here in Baton Rouge, we'll kick off our 2025 luncheon series at Drusilla Seafood on January 17th with featured speaker, Dennis Lambert. In February, we'll once again join LES to celebrate E-Week and we are pleased to once again present the ASCE annual scholarship awards

as well as the Melissa Young Doucet, PE Memorial Scholarship to local engineering students.

We look forward to seeing everyone at an event in 2025 and wish our peers and partners a safe and happy new year!



The people in the picture are (from left to right): Ryan Williamson, Ryan Brunet, Nafi Haque, Jack Koban, Robert Nodier, Sarah Berman, Robb Jewell, Josh Olivier, Joyner Deamer, and Myles Martin. Mitchell Brooks was the only board member absent from the photo.



NEW ORLEANS BRANCH

By James Williams, PE, Branch President

ASCE New Orleans Branch closed out 2024 with our annual Joint Society Christmas Party at Side Car in New Orleans.

Our Luncheons over the last several months have continued to be a great success. Recent speakers we had the pleasure of hosting included:

- December 10th Luncheon Presentation by Chris Humphreys, Director of Engineering, and Ryan Foster, Engineering Manager, for the Flood Protection Authority-East on the topic of Management, Coordination, and Operation of New Orleans Flood Risk Reduction System during a Hurricane or Storm Event;
- January 29th Luncheon Presentation by Keith J. Bergeron from Deutsch Kerrigan, L.L.P. on the topic of Key Contract Provisions Necessary in Contracts for Professional Services; and
- February 20th Luncheon Presentation by Michael Hecht, CEO of Greater New Orleans, Inc. on the topic of the GNO Economic Overview and Superbowl 2025 Preparations.

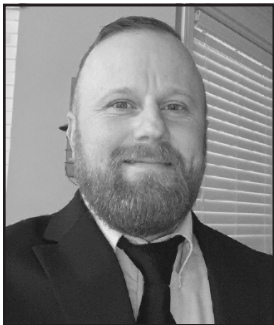
We also continued our support of the Greater New Orleans Science and Engineering Fair through monetary sponsorship of

the event, providing volunteers, and an ASCE New Orleans Civil Engineering Award.

To stay updated with the New Orleans Branch, we encourage you to follow ASCE New Orleans on Facebook or LinkedIn (@asceneworleans) and visit our website at www.asceneworleans.org. You can always reach out to us at ASCEneworleans@gmail.com with any inquiries or suggestions. We have an excellent lineup of upcoming luncheons and are scheduling our Younger Members Forum. We also anticipate several outreach and volunteer opportunities as we move into spring. We hope to see you at our upcoming events! Our branch plans to continue to provide activities and opportunities for our membership.



Photo from January Luncheon



SHREVEPORT BRANCH

By Thomas Jenkins, PE, Branch President

Overview

We are a branch of ASCE that is advocating for the Civil Engineering Profession in Shreveport, Louisiana.

Website

<https://www.facebook.com/ASCEShreveport>

Area in LOUISIANA

Parishes of Bienville, Bossier, Caddo, Caldwell, Catahoula, Claiborne, DeSoto, East Carroll, Franklin, Grant, Jackson, LaSalle, Lincoln, Madison, Morehouse, Natchitoches, Ouachita, Red River, Richland, Sabine, Union, Webster, West Carroll and Winn.

Please let us know if you have any updates at asce.shreveport@gmail.com.



Student resources

Scholarships

ASCE scholarships are for undergraduate students, provided they have at least one semester or quarter of study in the next academic year. <https://www.asce.org/career-growth/awards-and-honors/scholarships>

Fellowships

ASCE provides six Society fellowships to provide financial assistance. <https://www.asce.org/career-growth/awards-and-honors/fellowships>

Internships

Internships provide experience while making your resume stand out. <https://careers.asce.org/jobseekers/internships/>

Student News

LOUISIANA TECH

By Trevor Fortier, Student Chapter President

Louisiana Tech University College of Engineering and Science

ASCE/AGC/LSPS hosted their Winter Banquet Friday in the IESB Rotunda...congrats to scholarship winners!!



Civil Engineering scholarship recipients from ASCE (L to R): Jesse Bertucci, Trevor Fortier, Chandler Warren (ASCE Shreveport Branch Secretary), Ashtyne Monceaux and Liliane Lavine



CET students receiving AGC scholarships (L to R): Randy Alford with Louisiana AGC, Skylar Belt, Jackson McKinney, Francisca Gutierrez, Christian Dufour and Thomas Howell

MCNEESE

By Kallie Broussard, Student Chapter President

McNeese ASCE has been hard at work preparing for the 2025 Student Symposium which will be held March 6th-8th in Starkville, MS! We are looking forward to competing in multiple competitions this year and networking with industry and other college students. All of our hard work will soon pay off and our members will be able to enjoy the symposium as most are first-time attendees.

McNeese ASCE is also excited to continue to partner with our fellow McNeese engineering organizations and faculty for STEM outreach throughout Southwest Louisiana. Our chapter participated in our local E-week events to promote STEM to high school students as well as McNeese Students. We displayed our club's activities, had lab demonstrations, and provided a toothpick bridge competition for students to compete. We also had industry leaders come to campus and give presentations to our fellow students to promote their respective companies and civil engineering. Our chapter has also traveled to two middle schools so far this year to promote STEM and ASCE.

We have organized multiple chapter meetings to discuss and plan for the symposium. We also have had guest speakers attend these meetings to discuss licensing, the work they do, and offer advice to our members. Through much hard work and many meetings, our chapter was able to receive funding that led to the purchase of a trailer for our engineering and computer science department at

ASCE

McNeese. This was necessary for our chapter to be able to transport our canoe and other equipment to the symposium. We are looking forward to continuing to grow our chapter and making it better than before!



— Calendar of Events —

2025

March

Mar 25 - Infrastructure Report Card Release – Washington, DC

Mar 26-27 - Legislative Fly-In – Washington, D.C.

July

July 9-11 - Florida Section Annual Conference – Orlando, FL

July 17-19 - Alabama Section Annual Conference – Orange Beach, AL

September

Sept 24-25 - Louisiana Civil Engineering Conference & Show – Kenner, LA

Oct 7-10 - Annual Convention – Seattle, WA

Region 5 Board Programs

Awards • Newsletter • Grants • Nomination • Website

Region 5 Annual Activities

Governor Visits to Sections & Branches • Governor Visits to Student Chapters • Region Board Teams Calls •
Region Board In-Person Meetings • Region 5 Assembly

Events are constantly being updated online:

For ASCE Society events please see online:
https://www.asce.org/conferences_events/
https://www.asce.org/student_conferences/

For ASCE Baton Rouge events please see online:
<http://branches.asce.org/baton-rouge/events>

For ASCE Shreveport events please see online:
<https://www.facebook.com/ASCEshreveport/>

For ASCE Acadian events please see online:
<http://branches.asce.org/acadiana/events>

For ASCE NOLA events please see online:
<http://asceneworleans.org/events/>

For more events visit the ASCE Events Calendar: <http://www.lasce.org/calendar.html>

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