

## INSIDE THIS ISSUE

2022 Fall  
Conference Recap . . . . **1**

Words from the Chair . **2**

Taking a Deeper Dive into  
the New Alternative  
Cost-Effectiveness  
Methodology . . . . . **5**

New Climate Data  
Portal. . . . . **7**

OFMA DRT Corner . . . **9**

# The BFE\*

\* BASE FLOOD ELEVATION

## 2022 OFMA Fall Conference Recap

Brandon Claborn PE, CFM | OFMA Conference Chair

By most any measure, the 2022 conference at the Choctaw Casino Resort in Durant, OK was a resounding success (except for a few logistical issues). Thanks to everyone who worked hard to make it happen; the OFMA Board, speakers, sponsors, and attendees all play a crucial role in having a successful conference. I hope the educational content was useful, and I know the networking was enjoyed by all.

The conference began with a welcome from James Dry, who serves on the Choctaw Nation Tribal Council, and also included a performance by the Choctaw Princesses. It was great to hear updates from OWRB, ODEMHS, and FEMA. David Key, ESP, from North Carolina, shared examples of the implementation of low-cost sensors for real-time flood inundation and how this data can be used for flood mitigation projects. We wrapped up the first morning with a panel discussion on Hazard Mitigation and Resilience led by Annie Vest, FNI.

Monday afternoon included fifteen different presentations on topics including GIS Methods for Floodplain Management, Urban and Suburban Floodplain Issues, H&H, and Infrastructure Resilience Through Federal Mitigation Programs.

Monday evening included a new gathering for Young Professionals and OFMA Newcomers and was capped off with the Vendor Social. Meshek & Wood sponsored an evening of bowling, arcade games, and adult beverages, while OFMA provided heavy hors d'oeuvres.

Tuesday brought committee meetings and region representative meetings. Our newly elected (or re-elected) representatives are:

- Region 1 - Mike Kimbrough, ODOT
- Region 2 - Kenny Schwab, City of Broken Arrow
- Region 3 - Dennis Yocham, LeFlore County
- Region 4 - Johnny Barron, City of Altus
- Region 5 - Jessie Beck, City of Ponca City

*Continued on page 3*



## Words from the Chair

Lincoln Irvine PE, CFM | OFMA Chair

### Congratulations to OFMA's new Chair

Lincoln currently serves as a roadway & hydraulics/hydrology engineer for a vast array of publicly funded transportation projects. He is experienced in providing drainage solutions and engineering designs for various ODOT and county projects and has been recruited specifically for challenging drainage projects.

As part of a multi-disciplinary engineering design team for a large scale project, he served as a drainage lead as part of a drainage design team. Lincoln is also proficient in analyzing hydrology and hydraulics, mapping floodplains, evaluating storm water systems, storm water treatment, and permitting.

Lincoln has a degree in civil engineering from the University of Utah. He is a Professional Engineer in Utah, California, and Oklahoma and a Certified Floodplain Manager in Oklahoma.

### Greetings,

I am proud to have the opportunity to serve as chair. I have learned a lot from being a part of OFMA the last 6 years, and hope to continue serving others with that same passion. All of us in OFMA leadership are committed to maintaining an organization that serves your needs. Whether you are on the front line as a community floodplain administrator or stormwater manager, an official in an NFIP community, a consultant, or in some other role, we value your membership. It was truly exciting to have an in-person conference this fall, and we hope we can continue to have events that our members enjoy and value.

We spent a lot of time at the recent strategic planning meeting brainstorming how we can best serve our members and I would appreciate your thoughts on that. We have increased our membership and want each of you to be engaged in the process. We discussed the responsibilities each board member has and hope to be able to work together with you, the members, to meet the challenges that may face us. The regional representatives are also committed to serving the members in their regions. You can find your region on the OFMA website <https://okflood.org/regions/> and contact information for the regional representatives and other board members <https://okflood.org/board-of-directors/>. With your participation and input, OFMA will continue to grow in its ability to serve the membership. We welcome your participation in all activities and your thoughts about how to serve the members best.

I am continually amazed at the frequency of the number of disasters that occur locally and around the world. As I spend most of my time working on structures

that will hopefully help avoid flooding, I do not have a lot of firsthand experience with flooding. However, the media often provides a front row seat to current flood disasters. Through reports of flood events, I have seen people in a frantic swim to save their own life. As well as emergency professionals helping in rescuing others too. Despite the many hours in floodplain management training, I question if there is something that could be done to prevent such disasters. Is it possible for one person to make a difference? The magnitude of the flooding problem is overwhelming and would be difficult for one person to solve. I think development of better programs that provide results in flood prevention is a good pathway forward. These natural disasters remind me of how important everyone in our association who contributes to keeping people safe is.

During flood times or drought, we each need to continue to step up our efforts to fulfill our mission, "We encourage and support, with our partners, flood-safe development, and flood mitigation. We promote sound floodplain management practices and the natural and cultural benefits of the floodplain. We support the floodplain management profession through education and certification." We can all work together to make our mission possible.

OFMA exists to serve the membership. If you have any ideas or suggestions, I would love to hear from you.

Continued from page 1

We had a day of breakout and plenary session including a DRT Workshop, Rural FPA Issues and Stormwater Quality, broken up by the annual business meeting at lunch. Lincoln Irvine took over as OFMA chair and Annie Vest was elected as the Vice-Chair. Ellen Stevens will continue to serve as Past Chair. Tuesday evening was our annual awards banquet, highlighting:

### Calendar Contest Winners

**1st Place**  
**Brooklynn Daugherty**  
Timber Ridge Elementary



**2nd Place**  
**Paisley Neeley**  
Perkins-Tryon



**3rd Place**  
**Arena Thomison**  
Maryetta School



**Honorable Mention**  
**Brettlyn Boyd**  
Timber Ridge Elementary



### Special Recognition Award



Ellen Stevens, PhD, PE, CFM



Brandon Claborn, PE, CFM

### Silver Scoop



Monica Cardin, Carolyn Schultz, Morgan Lozoya, Michelle Gourd

### Ronald D. Flanagan - Gold Project Award

#### Oklahoma County Triple X Road Realignment and Bank Stabilization Project



### Chairman's Award



Jason Vogel, PhD, PE



**Charles Don Ellison Award****Johnny Barron, PE, CFM****Public Official Of The Year Award****William Smiley, CEM, CFM****J. Gavin Brady - Floodplain Manager Of The Year****Zackary Henson, CFM - City of Stillwater****Leatherbee Robison Award****Annie Vest and Matt Rollins****W. Kenneth Morris****Honorary Lifetime Member Award****Chris Duncan, PE, CFM**

Wednesday began with a presentation by Donald Baker and Thomas Kimes on the development of a physical model to examine the hydraulic performance of recommended mitigation projects. Our final session included a Floodplain Managers Roundtable Discussion with questions from the audience.

Thanks again to all who participated. We are already planning next year's conference and look forward to seeing you then.

## Taking a Deeper Dive into the New Alternative Cost-Effectiveness Methodology

By Steve McMaster, CFM

*Originally published in the ASFPM November 2022 Newsletter*

The October 17, 2022 News & Views article promised more information about FEMA's October 6, 2022 memo, Alternative Cost-Effectiveness Methodology for Fiscal Year 2022 BRIC and FMA Application Cycle, and especially what it means for floodplain managers, mitigation practitioners, and the communities we serve. The cost-effectiveness eligibility requirement has been cited as a significant barrier to the application process for FEMA mitigation program funding. Additionally, underserved communities are often faced with the burden of using limited resources to obtain assistance with completing a benefit-cost analysis (BCA) for a proposed mitigation project. To address these concerns, FEMA has been taking steps to streamline the BCA process through the development of pre-calculated benefits policies since 2012. The October 6th memo furthers this streamlining process of reducing the burden of the cost-effectiveness eligibility requirement, especially for underserved communities. This alternative cost-effectiveness method allows FEMA to analyze the impacts of the discount rate differential and to inform future decision-making.

### How the Discount Rate Impacts Benefits and Costs: A Primer

Every BCA compares two scenarios: (1) The without-project/before mitigation scenario, which describes the dollar amount of losses that can be expected each year (i.e., "annualized losses") if the project is not completed and the current losses continue, and (2) The with-project/after mitigation scenario, which describes the annualized losses if the proposed project is completed and it reduces or eliminates losses as designed. The difference between the annualized damages of these two scenarios is the impact of the project, which are the project's annualized benefits.

Including annual maintenance costs when needed, a BCA assumes that a project will provide the same amount of annualized benefits for each year of the project's lifetime, which is called the Project Useful Life, or PUL, in the BCA Toolkit. But the years of future annualized benefits must be expressed in present-day dollars. To calculate a project's total benefits, the annualized benefits should not simply be multiplied by the number of years of the PUL because this does not consider the time value of money. A discount rate is used to account for dollars that accrue in the future being worth less than present value dollars. In the calculation used to determine the present value of benefits, the discount rate determines how quickly a project's annualized benefits will decrease over the PUL. A lower discount rate means the annualized benefits will decline less quickly from year to year. Therefore, a BCA that uses a lower discount rate will result in greater benefits and, in turn, will result in a higher benefit-cost ratio (BCR). Ultimately, projects that are not cost-effective — and, therefore, ineligible for funding —

*Continued on page 6*

Continued from page 5

when a 7% discount rate is used may be cost-effective if a 3% discount rate is used. The table below shows FEMA's standard PUL values for popular mitigation project types and the percentage increase in benefits when using a 3% discount rate instead of a 7% discount rate.

| Popular Project Types  | PUL Project Useful Life (Years) | Increase in Benefits by Using 3% Discounted Rate Instead of 7% |
|--|---------------------------------|--|
| Acquisitions, relocations  | 100                             | 121%   |
| Major concrete infrastructure, dams, bridges, major drainage systems, pump stations, utility projects, mitigation reconstruction | 50                              | 86%  |
| Residential elevations, stream restoration, safe rooms, culverts   | 30                              | 58%  |
| Generators   | 19                              | 39%  |
| Hurricane shutters   | 15                              | 31%  |
| Ignition-resistant construction  | 10                              | 21%  |

Using Alternative Cost-Effectiveness Methodology in the BCA Toolkit

Two levels of analysis are performed in the BCA Toolkit: (1) the cost effectiveness of completing a mitigation action on a single structure, and (2) the cost effectiveness of completing mitigation actions for all structures within the scope of a project. A structure-level analysis is performed on an individual building or other asset (e.g., culvert, utility line, etc.) that will be mitigated by the proposed mitigation action. The results that are displayed in the Benefit-Cost Summary section of the BCA Calculator are those calculated using the longstanding 7% discount rate. However, if the user selects the “Analysis at 3%” button, the summary results for the structure that were calculated using the 3% discount will be displayed in a sidebar.

When following the October 6 memo, a project-level analysis is more important than a structure-level analysis because the project-level results are entered for BRIC and FEMA project subapplications in FEMA GO. FEMA is in the process of developing this functionality in a way that complies with the memo criteria and expects to release an update to the BCA Toolkit with this functionality in November.

To use the alternative BCA methodology, the applicant must attach both the exported BCA file from the BCA Toolkit and a BCA narrative to the subapplication in FEMA GO. Detailed instructions for using the alternative methodology are supplied at the bottom of page 3 of the October 6th memo. If needed, applicants can also contact BCHelpline@fema.dhs.gov for technical assistance.

New Climate Data Portal

Johnny Barron PE, CFM | City of Altus



You just rolled your eyes, didn't you? I get it. Climate change (aka global warming) has been viewed as a political issue as much as it has been viewed as a meteorological phenomenon. I, for one, do not trust Al Gore or Joe Biden to tell me the truth about anything. I was once a sharp critic of global warming, but the following facts helped me adjust my attitude.

- The planet is warming and there is physical, verifiable evidence of melting glaciers and the shrinking polar ice cap. This is not hard to accept when considering that the climate has always been in a state of change.
- Warmer oceans impact weather patterns. The patterns known as El Nino and La Nina are based on water temperatures in the Pacific Ocean and have measurable impacts on precipitation in the United States.
- Floodplain administrators have a duty to plan and prepare for future flood events. If sea levels are indeed rising or if there is a trend towards more extreme inland flooding, by golly, it's our job to plan for it.

A new planning tool was released in September 2022 called Climate Mapping for Resilience and Adaptation (CMRA). This can be found at [resilience.climate.gov](https://resilience.climate.gov).

I found this portal to be very user-friendly as I browsed maps showing existing and future predictions for flooding, drought, extreme heat, and wildfire. The website has an Assessment Tool that lets you search for a zip code, city, or county and assess these hazards for your area.

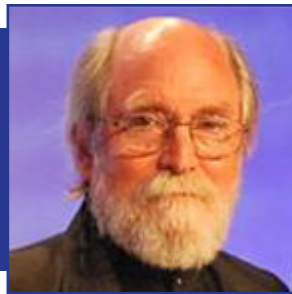
Oklahoma had an abnormally hot summer this year, so we should all be interested in future projections. Mesonet.org reports that the statewide average temperature was 85.9 for July 2022, which is 4 degrees above normal. The Altus weather station reported 27 days of >100°F high temperatures during the month. July 19, 2022, was the first time that all 120 Mesonet stations reported 100°F or more.

Climate change has my full attention. This new tool lets me evaluate the trend of extreme heat and tells me that by our days per year with maximum temperature above 105°F might increase by 14.9 days by 2044, 28.5 days by 2065, and 59.1 days by 2099. The projections for Altus also show increased drought, less annual rainfall, and no significant increase in days with >3 inches of rainfall.

While the long-term flood outlook looks fine, the other projects seem quite impactful. Will it really happen? Who knows, but I would be negligent in ignoring this data. So, now what? The CMRA platform offers a list of funding resources as well as guidance for preparing a local Climate Resilience Plan. Planning for climate resilience is best done by local officials, and this new website might be a great resource for local officials.

I am excited about this new tool, and I recommend you take a look at it. But try not to roll your eyes. You could pull a muscle.





## OFMA DRT Corner

Rev. W. B. "Bill" Smith, PE, CFM | OFMA DRT Coordinator

**Disaster Response and Mitigation:** As we go into the field in response to a disaster, whether it be a flood, fire, tornado, earthquake, etc., our DRT teams are always on the lookout for potential mitigation projects to provide guidance to the community for prevention or reduction of future damages. That is Mitigation. Mitigation is needed for all who are prone to disaster damage – true equity. But, Mitigation isn't always available to all. All Mitigation takes funding – whether it is a large project that might be funded by BRIC, HMGP, or another source; or even a small project where a community could provide resources for cleaning culverts, improving ditches, and creating regional stormwater detention facilities. Many communities don't have the available funding for cost sharing, nor do the community leaders choose to help the impoverished areas. This is where "equity" is no longer equal. Many impoverished community areas are the highest at risk for damage – but where communities don't put a priority on funding or mitigation projects.

This is not a political opinion, it is an opinion of reality. When we go out to respond, we see the reality of community decisions.

So I am going to go back to a story I have told over and over – because this Mitigation works. Mitigation will help to reduce future flooding events. It is now "winter-time" in Oklahoma. Our fall flood season is traditionally behind us and our next event is the spring floods – about six months from now. The mowing season is over. So can your local crews use this time to clean out the conveyance channels – whether bar ditches or true conveyance channels – of accumulated silt, scrub-shrub, small (or large) trees, old refrigerators, furniture, sediment deposition, etc.? Every community has these issues, and if the community leaders prioritize this cleanup during the next six months, the spring floods will have a "clean" conveyance channel to flow through with minimizing flooding.

We continue and will continue to see higher rainfall and more frequent rainfall events. Maybe the existing channel isn't naturally intended to convey the runoff from these higher storm events, but it will certainly help. If the conveyance channel is not large enough to prevent overbank flooding, maybe it is time to consider a Master Drainage Plan type of evaluation to see what is needed so that a plan can be put in place to enlarge the existing channels, create upstream stormwater detention facilities, to consider a stormwater ordinance for mitigation planning. Stormwater runoff in non-regulatory floodplains flows downstream until it becomes the flow in the FEMA or community regulatory floodplain. Everything that we do in the form of "development" increases stormwater runoff. Community leaders need to come to the reality that until something changes, nothing changes.

*Continued on page 9*

*Continued from page 8*

When this happens, the frequency of disaster responses will reduce, and our communities will become more resilient to disaster. The current funding that is available to communities through BRIC, ARPA, etc., has not been greater and most can be used for some stormwater/floodplain projects to help mitigate damage.

It is also important that everyone realize the benefit of flood insurance. Whether through the NFIP or private insurance, the more that the community promotes flood insurance, the less the community has to rely on minimal Individual Assistance to homeowners.

Nothing happens until something happens. This spring's flooding/disaster may be similar to the previous several years due to the La Nina weather pattern that will not seem to go away.

We, the OFMA DRT, are there to help communities in times of disaster. Our "best" years are those when we get no calls. Two recommendations as I end – first – signup for support through the OFMA DRT in the event your community is hit by disaster – like the recent Idabel tornado. Second – support a winter mitigation program in your community – clean the ditches and culverts to allow stormwater and floodwaters to flow without damaging residential or non-residential structures. This is your time to "step up."



## Funding Acknowledgment

Funds to produce The BFE come in part from the National Flood Insurance Program and State Support Services Element of the Community Assistance Program, which is administered by the Federal Emergency Management Agency.

The BFE is published by the Oklahoma Floodplain Managers Association, Inc. Information and opinions contained herein do not necessarily reflect the views of the Board of Directors. Items for publication and other editorial matters should be directed to:

Editor, The BFE | PO Box 8101 | Tulsa, OK 74101

### Chair

Lincoln Irvine, PE, CFM  
Benham Design LLC  
14000 Quail Springs  
Parkway, Suite 500  
Oklahoma City, OK 73134  
405.478.5353  
lincoln.irvine@benham.com

### Region I Representative

Michael Kimbro, PE, CFM  
ODOT  
200 NE 21st Street  
Oklahoma City, OK 73105  
405.522.0612  
mkimbrow@odot.org

### Region V Representative

Jesse Beck, CFM  
City of Ponca City  
516 East Grand  
Ponca City, OK 74601  
580.767.0383  
beckje@poncacityok.gov

### Ex Officio

Julie Cunningham  
Executive Director  
OWRB  
3800 N. Classen Blvd.  
Oklahoma City, OK 73118  
405.530.8800  
julie.cunningham@owrb.ok.gov

### Vice Chair

Annie Vest  
Freese & Nichols  
4200 E Skelly Dr, Suite 410  
Tulsa, OK 74135  
402.890.0851  
annie.vest@freese.com

### Region II Representative

Kenneth Schwab, PE, CFM  
City of Broken Arrow  
220 South 1st Street  
Broken Arrow, OK 74012  
918.259.7000  
kschwab@brokenarrowok.gov

### State NFIP Coordinator

Jonathan Phillips, CFM  
OWRB  
3800 North Classen Blvd  
Oklahoma City, OK 73118  
405.530.8800  
jon.phillips@owrb.ok.gov

### Honorary Board Member

Ken Morris  
OWRB—*Retired*  
5400 E. Tecumseh Road  
Norman, OK 73026  
405.573.7990  
kensbbd@gmail.com

### Secretary

Rachael Cooper, PE, CFM  
Wagoner County  
307 E. Cherokee Street  
Wagoner, OK 74467  
918.485.7979  
rcooper@wagonercounty.ok.gov

### Region III Representative

Dennis Yochum  
LeFlore County EM  
1215 South Broadway  
Poteau, OK 74953  
918.635.3610  
emlcdirector@gmail.com

### Past Chair

Ellen Stevens, PhD, PE, CFM  
1134 NW 33rd Street  
Oklahoma City, OK 73118  
405.747.6598  
ellen@ellenphdpe.com

### Honorary Board Member

Ronald D. Flanagan, CFM  
R.D. Flanagan & Associates  
3015 E. Skelly Drive  
No. 270  
Tulsa, OK 74105  
918.749.2696  
rdflanagan@rdflanagan.com

### Treasurer

Carolyn Schultz, CFM  
Corps of Engineers—*Retired*  
3527 S. 401st W. Ave.  
Mannford, OK 74044  
918.906.3922  
cschultz@cimtel.net

### Region IV Representative

Johnny A. Barron, PE, CFM  
City of Altus  
509 S. Main  
Altus, OK 73521  
580.481.3518  
jbarron@altusok.gov

### PDCC Chair / Honorary Board Member

Joseph Remondini, PE, CFM  
Corps of Engineers—*Retired*  
3225 S. Detroit  
Tulsa, OK 74105  
918.361.8636  
jremondini@aol.com

### BFE Editor

Janet K. Meshek, PE, CFM,  
SR/WA  
Meshek & Associates, LLC  
1437 S. Boulder Ave.  
No. 1550  
Tulsa, OK 74119  
918.392.5620  
jmeshek@meshekengr.com