

American Bottoms Levee (Risk) Communication Meetings





USACE Levee Safety Program:

To ensure levee systems provide benefits to the Nation by working with sponsors and stakeholders to assess, communicate, and manage flood risks to people, property, and the environment.

St. Louis Metro East Levee Issues Alliance:

The Levee Issues Alliance is working with US Army Corps of Engineers (USACE) Levee Safety Program to provide information to residents, farms and businesses who are depending on levees for protection.

Southwestern Illinois Flood Prevention District Council:

The FPD Council was formed by the three county FPDs as a joint venture to oversee the improvement of the Metro East levee systems so they can continue to protect the lives, property and the economic vitality of the St. Louis Metro East region.

American Bottoms Levee Project

- Alton, IL to south of Columbia, IL located in Madison, Monroe and St. Clair Counties
- 100 year level completed
- 500 year level underway with \$95.2M in appropriations as part of FY19 workplan
- Over \$74M of new construction investment from local investment to enhance levee system protecting more than 288,000 people/employees, 4,000 businesses, over 56,000 jobs, 111,700 acres, and \$13.2B in assets
- Over \$220M in Federal and Local funds have been invested to reduce risk in the Metro East



65
MILES OF LEVEES

***2016 Outstanding Local Government Achievement Award for
Leadership in Planning and Design Innovation***



Risk Communication Objectives:

- Build awareness of levee risks and benefits.
- Build understanding of how levees function and the role they play in this community.
- Build appreciation for what the levee sponsors do. Build understanding of how levee sponsors, FPD, and USACE work together to manage flood risk.
- Communicate different types of flood risks to those living and working in the metro east region.
- Build understanding of how community leaders prepare for and respond to a levee emergency; communicate how individuals can prepare for and respond for a levee emergency.

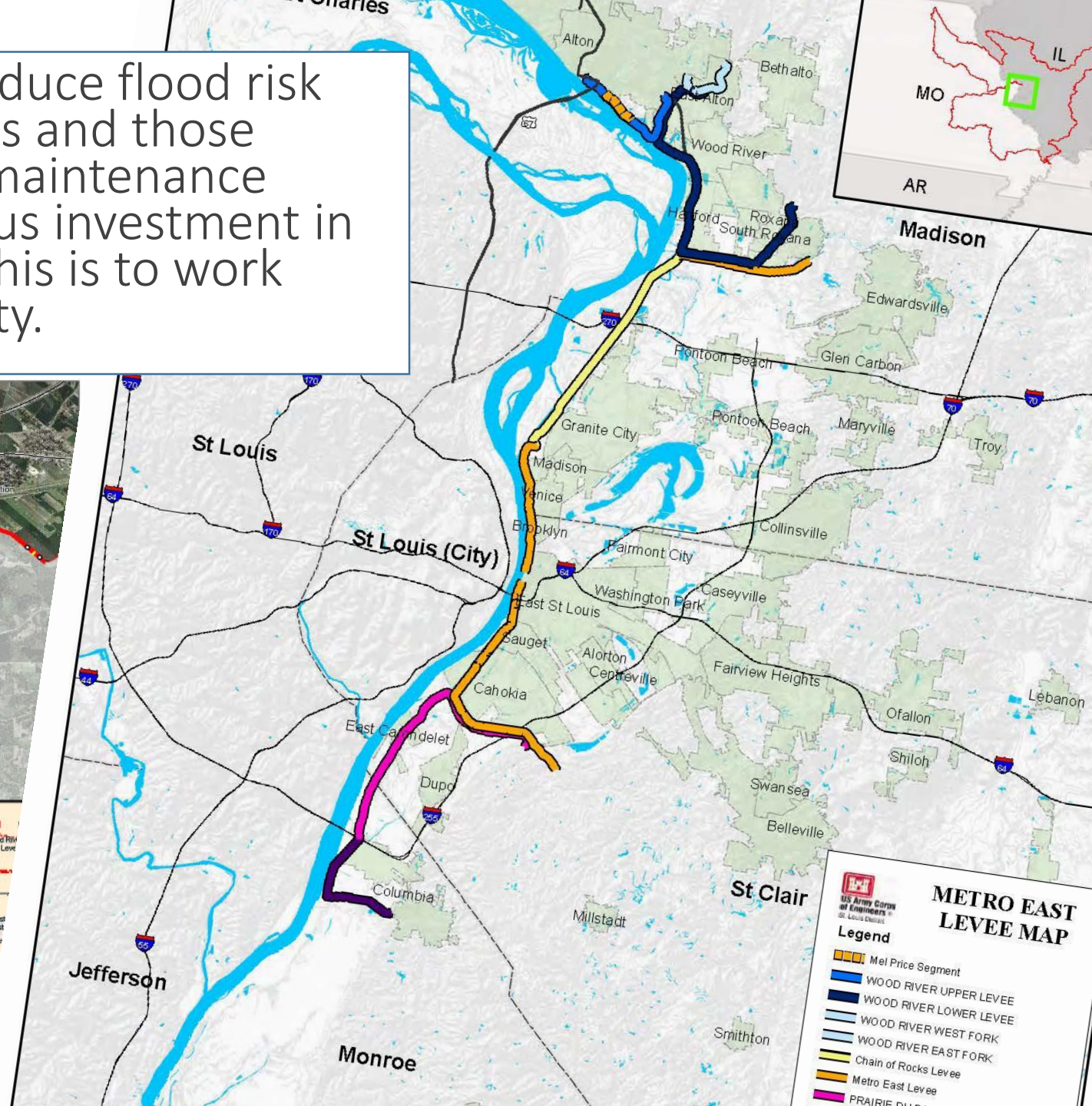
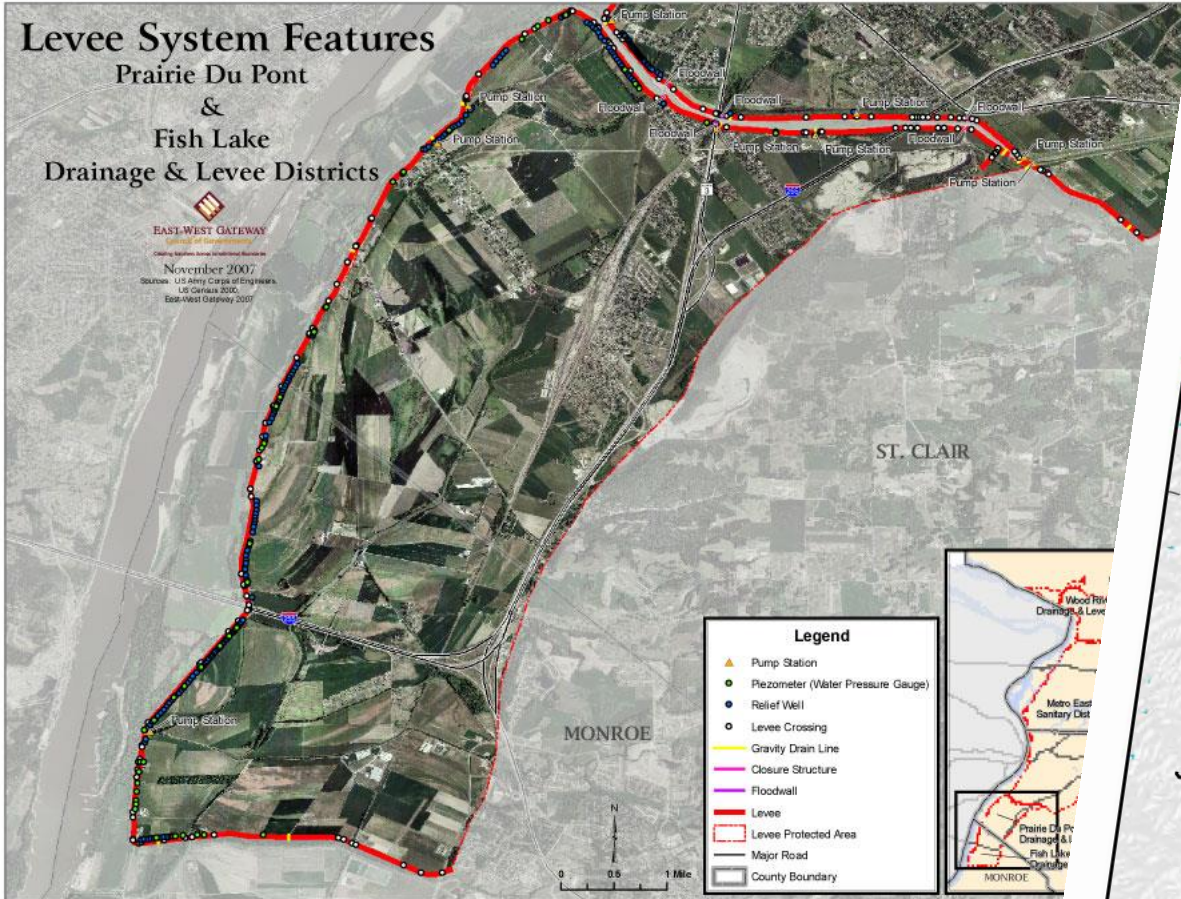
Risk is part of everyone's life EVERY DAY.

Cities, counties and townships have preparedness plans developed with First Responders.

They are prepared to respond EVERY DAY.

Are you?

Levees are an investment made to reduce flood risk to people and property. Communities and those responsible for levee operation and maintenance depend on one another for continuous investment in their maintenance and restoration. This is to work toward the levee's long-term reliability.



What is at risk?

Metro East levee systems collectively reduce flood risks to a population that exceeds 288,000 people, 111,700 acres with major industrial, commercial, residential, agriculture and transportation infrastructure valued at over \$13.2 billion in the counties of Madison, Monroe and St. Clair, Illinois.

Midwest Corridor jobs represent 29% of SWIL region total jobs and 6% of entire 16 County St. Louis MSA



*Above is a sample of companies in the region protected by the American Bottoms Levee.

MESD and Chain of Rocks

Nearly 250,000 people who work or live behind the levee, over \$9.9 billion in property value, \$3.4 million damages prevented in 2015-16 flood, communities of East St. Louis, Cahokia, Sauget, Madison, Brooklyn, Venice, Fairmont City, and Granite City and many heavy and light industries, airports, transportation hubs, hospitals and numerous Superfund sites

Wood River Upper

Nearly 1,000 people who work or live behind the levee, \$326 million in property value, \$112 million damages prevented in 2015-16, communities of Alton and East Alton, IL Highway 143

Wood River Lower

Over 20,000 people who work or live behind levee, \$4.3 billion property value, \$641 million damages prevented in 2015-16, communities of Wood River, East Alton, Roxana, Harford, South Roxana and Wanda, Route 3 and 143, and multiple residential, commercial, and industrial properties including Phillips 66's refinery, and Olin, a munitions manufacturer

Wood River East and West Forks

Approximately 650 employees and transient people, railroads and industrial properties, including Olin munitions manufacturer, \$92 million in land and property value

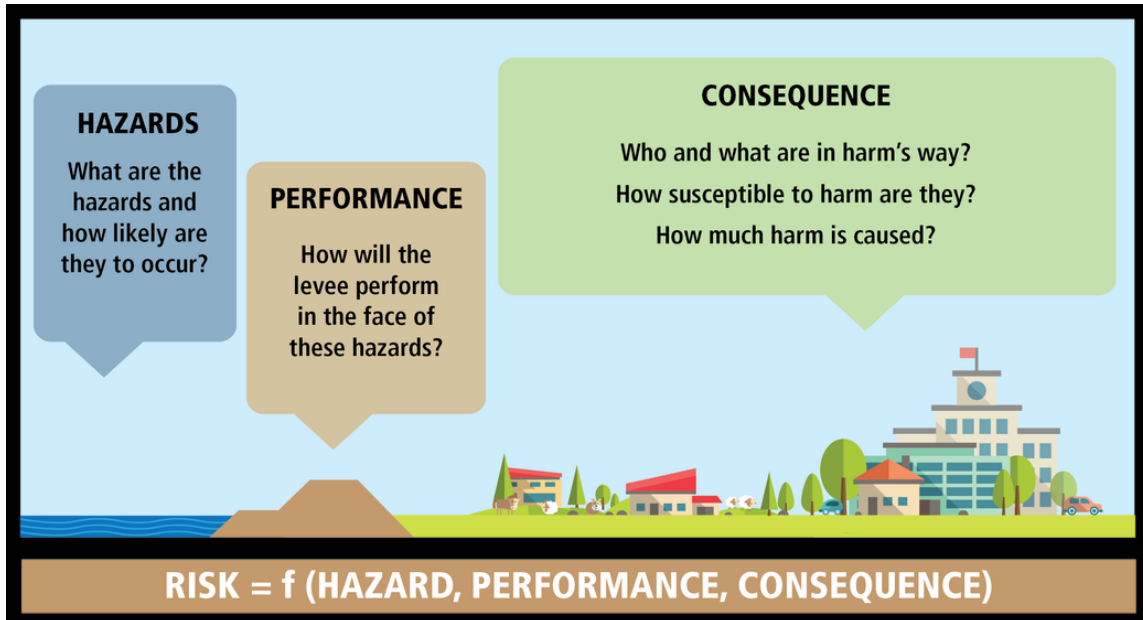
Prairie du Pont and Fish Lake

Approximately 7,000 people who work or live behind levee, \$430 million in property value, \$112 million damages prevented in 2015-16 flood events, communities of Dupo, North Dupo, Stolle, East Carondelet and portion of Columbia, IL Route 3 and Interstate 255, Dupo's Union Pacific rail yard and truck-transfer station



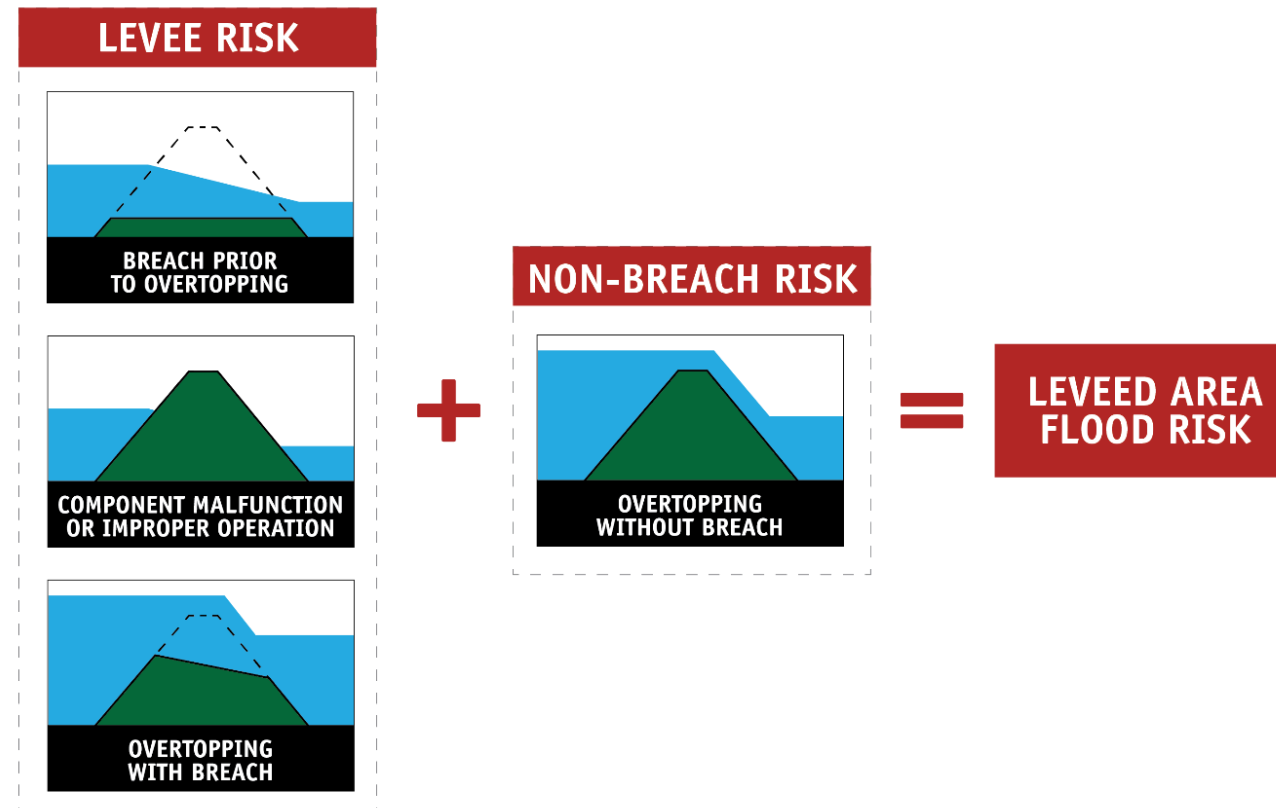
Risks with living behind a levee...

HOW USACE DEFINES LEVEE RISK



**US Army Corps
of Engineers**
St. Louis District®

The types of flooding that may occur in a leveed area





Inspections & assessments



Residents, levee districts, government—working together



Taking steps to reduce & manage risks



Building awareness among those affected

WHAT IS DRIVING THE RISK?



RISK MANAGEMENT MEASURES ARE DRIVEN BY TYPE OF RISK



Flood risk management



Find information about your community's levee at the National Levee Database:
nld.usace.army.mil

Who does what?

- Residents and property owners
 - Be aware of conditions and risk associated with levees.
 - Use personal risk management activities such as flood insurance, evacuation measures, and flood proofing, among others.
- Officials at different levels of government
 - Acquire resources and prioritize investments and solutions.
 - Develop plans to respond to emergencies.

What has been done to reduce the risk in the Metro East Area

In 2009 Madison, Monroe, & St. Clair Counties created the Southwestern Illinois Flood Prevention District Council

Counties approved a quarter cent sales tax, generating \$11 million annually

Council issued revenue bonds of \$94 million in 2010

Council constructed \$75 million of improvements to stabilize the levees between Alton and Columbia to the 100-Year Level of Protection

SOUTHWESTERN ILLINOIS FLOOD PREVENTION DISTRICT LEVEE IMPROVEMENT PROJECT

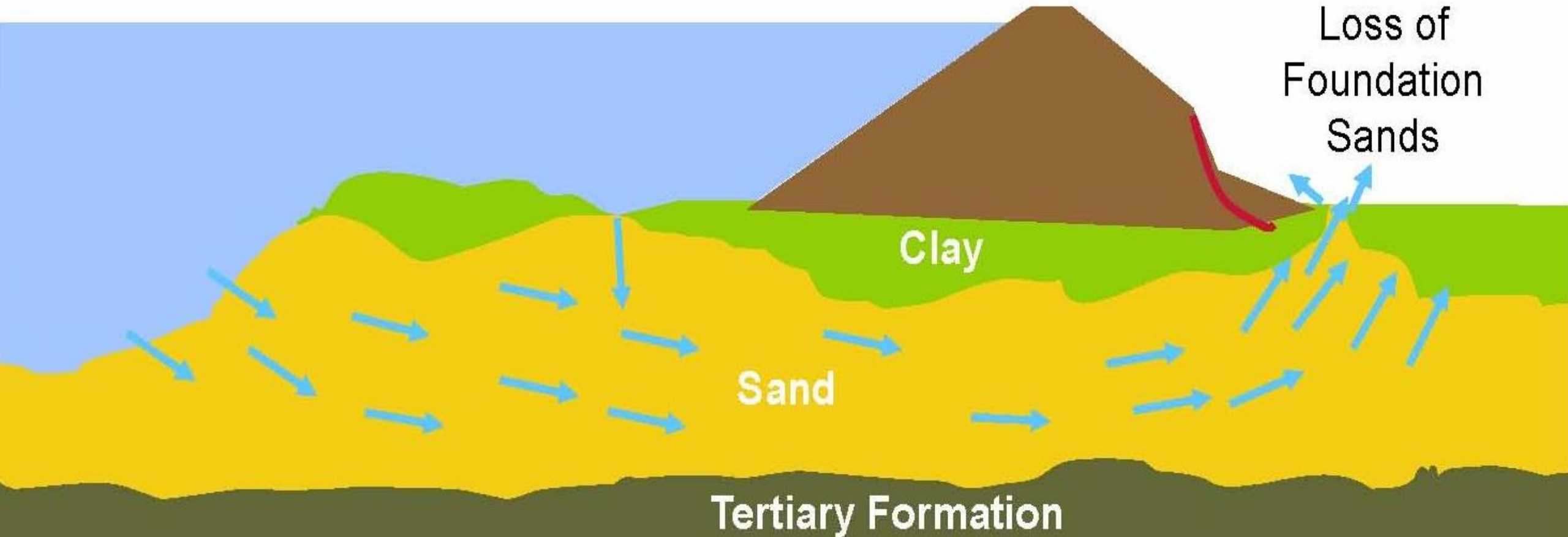
2/12/2018

BID PACKAGE	LOCATION/PROJECT	CONTRACTOR	CONSTRUCTION CONTRACT	CONSTRUCTION COMPLETED AS OF 2/9/2018	ESTIMATED COMPLETION	COMPLETION STATUS
2A	Fish Lake 1 Pump Station	Korte & Luitjohan	\$797,599.53	\$797,599.53	December 2014	Complete
2B	Prairie DuPont, MESD, and Wood River 5 Pump Stations	Korte & Luitjohan	\$5,346,710.92	\$5,346,710.92	November 2017	Complete
2C	MESD Site 12 Force Mains	Haier Plumbing	\$311,692.00	\$311,692.00	August 2016	Complete
3	Wood River Blanket Drains, Earth Fill, Relief Wells, Seepage Berms, Piping, Weirs	Keller Construction	\$12,922,903.94	\$12,922,903.94	October 2017	Complete
4	MESD 1 Pump Station, Clay Cap, Piping, RWs	Haier Plumbing	\$6,398,834.40	\$6,398,834.40	November 2017	Complete
5	MESD Clay Cap, Earth Fill, Piping, Relief Wells Rip Rap, Sluice Gate Rehabs	Keller Construction	\$14,420,883.71	\$14,420,883.71	November 2017	Complete
6	Prairie du Pont & Fish Lake Clay Cap, Seepage Berms, Piping, Relief Wells, Sluice Gate Rehabs	Lane Construction	\$15,436,257.14	\$15,436,257.14	December 2016	Complete
7A	Upper Wood River Shallow Cutoff Wall	Kamadulski Excavating	\$3,375,350.25	\$3,375,350.25	June 2015	Complete
7B	Lower Wood River Deep Cutoff Wall	TREVIIICOS	\$14,919,724.29	\$14,919,724.29	Octoberber 2017	Complete
5A	East St. Louis 126 Inch Sewer Repair	SAK Construction	\$699,900.00	\$699,900.00	December 2017	Complete
		TOTAL	\$74,629,856.18	\$74,629,856.18	100.0%	

Underseepage \Rightarrow Instability

RIVERSIDE

LANDSIDE



Sandboils =
Loss of
Foundation
Sands

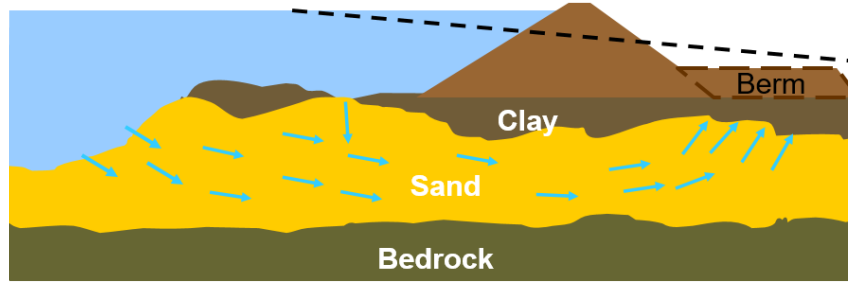
Clay

Sand

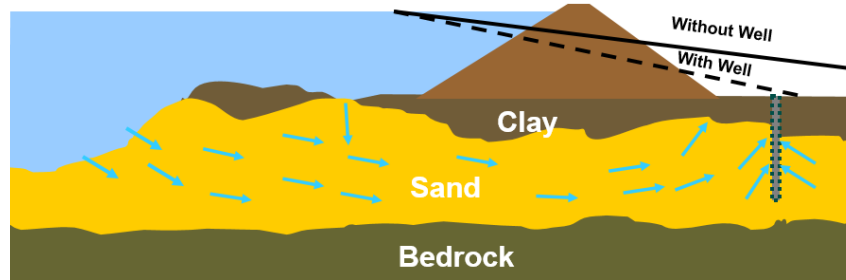
Tertiary Formation

Three ways to manage levee underseepage

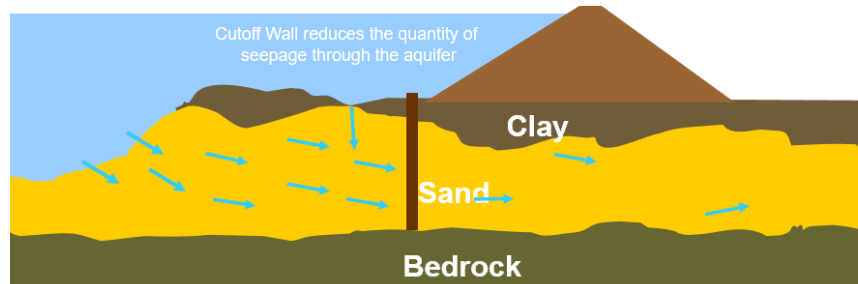
Landside Berms



Relief Wells



Cutoff Walls



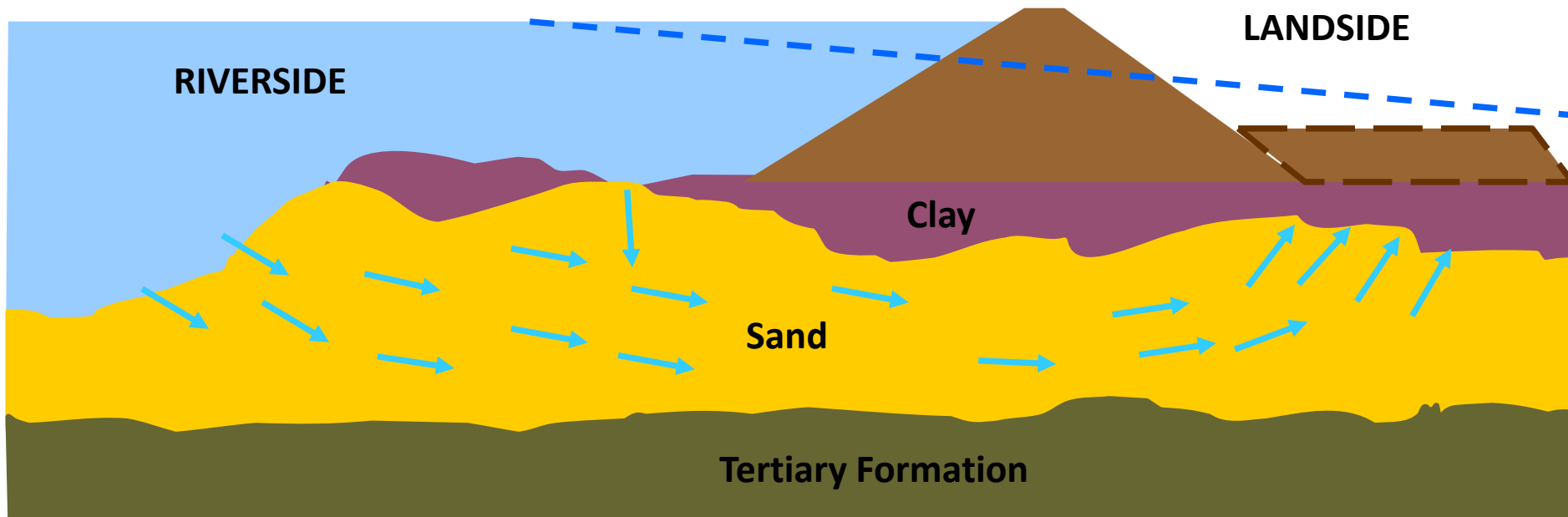
Landside Berms

Advantages

- Initial Cost
- Maintenance

Disadvantages

- Environmental Impacts
- ROW requirements
- Borrow sources
- Increased pressures beyond toe



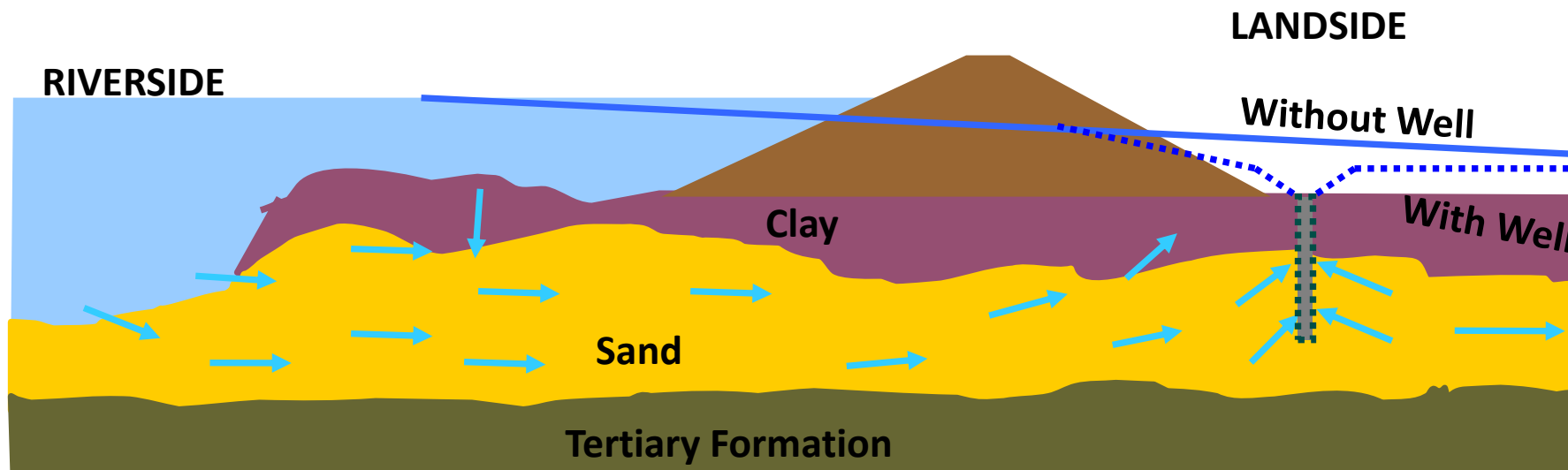
Relief Wells

Advantages

- ROW
- Minimal Borrow & Environmental Impacts
- Initial Cost

Disadvantages

- Maintenance
- Drainage required



Cutoffs / Slurry Trenches

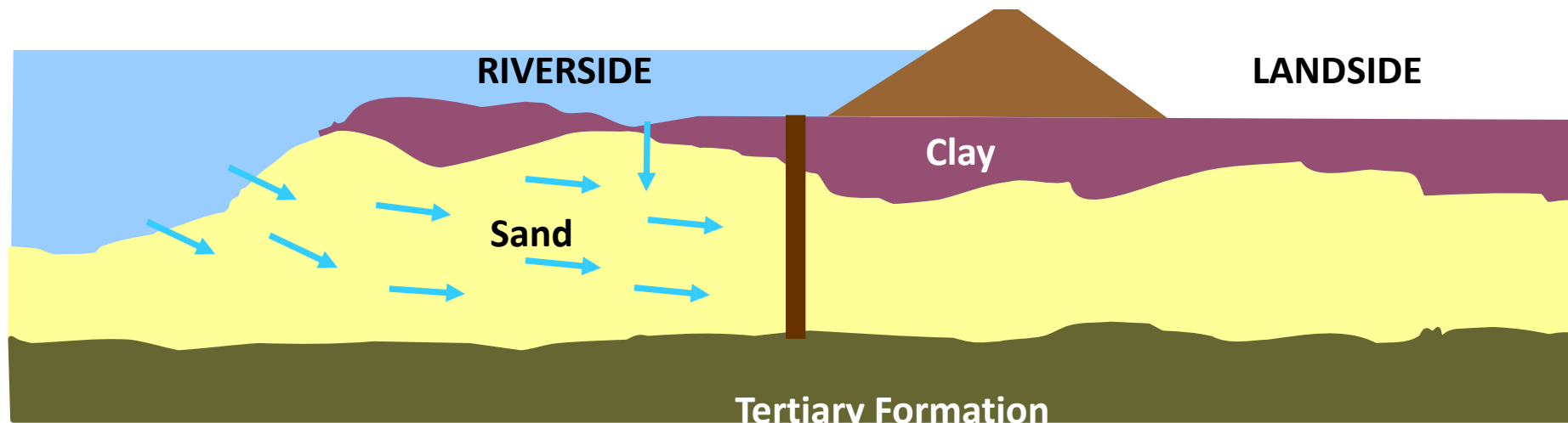
Slurry Trench – Most effective method of seepage control

Advantages

- Most Effective Seepage Measure
- Addresses Through Seepage
- ROW
- Minimal Borrow
- Environmental Impacts
- Maintenance

Disadvantages

- Initial Cost
- Trench Stability
- Construction Duration



100-Year Level of Protection Summary

Improvements completed with no additional borrowing

Council achieved its interim goal of meeting FEMA flood protection standards using only the money coming from the dedicated FPD sales tax

Improvements successfully tested by the second highest flood elevation on record earlier this year 2019, fourth and seventh highest flood elevations in December 2015/January 2016 and April/May 2017

FEMA's issuance of continued accreditation for all levee systems anticipated in 2019

Authorized Level of Protection

In February 2015, Council expressed its intent to restore the Federally Authorized Level of Mississippi Flood River Protection in the Metro-East to the 500-Year Level

Designing the most critical and cost effective projects first

Issued an additional revenue bond of \$77 million in December 2015

Authorized Level of Protection

Working

Working with the Corps of Engineers for 65% federal funding where available

Working

Working closely with the Corps to make sure the Council's work is eligible for Work In-Kind Credit for the remaining 35%

Utilizing

Utilizing seepage berms, relief wells, pump stations, shallow clay trenches to increase levee stability

Authorized Level of Protection

An additional bond issue of \$27 million is anticipated in 2021 based on current Corps of Engineers estimates. Sales tax revenue has increased to \$12 million a year which could support a third bond issuance

Current projection is for all Authorized Level projects to be completed by 2024

Council's ultimate goal of providing the Authorized Level of Protection to the Metro-East area would be achieved 20 years sooner than originally forecasted in 2009

What Can You Do?

The community and residents need to be aware of their role in managing flood risks associated with levee systems. Individual residents and businesses can take a variety of actions in order to reduce this risk.

- Be aware if you live or work behind a levee;
- Remain vigilant during flood events; listen for and follow instructions from local emergency management officials;
- Know your community's flood emergency preparedness and evacuation plans and be prepared to evacuate during a flood;
- Develop and practice a personal, family or business emergency preparedness plan;
- Flood proof structures to reduce impacts of flooding to your home or business;
- Support your local levee Sponsor in their efforts to operate and maintain a safe levee system
- Encourage elected local, county and state officials to make sound flood risk management decisions;
- Know your risk, know your role and take action to reduce your risk!



Practical
knowledge in
a levee
emergency

*Likely
available
from
local
EMA*

- Signal
- Social media plan
- General media plan
- Evacuation plan

Emergency Management Agency

Madison County, IL

618-692-0537

Code RED: Madison County, IL

<https://public.coderedweb.com/CNE/en-US/68684CD288F8>

Monroe County, IL

618-939-8681

Code RED: Monroe County, IL

<https://public.coderedweb.com/CNE/en-US/E4A1DADB51FB>

St. Clair County, IL

618-825-2683

Code RED: Belleville, IL

<https://public.coderedweb.com/CNE/en-US/BF1F845141DA>



Keeping citizens informed.

Free Emergency Notification System for citizens, which allows individuals to receive a call notifying them of weather or other types of emergencies