

APPENDIX B

Planning Process

Cindy

From: Cindy <hultzcog@rallstech.com>
Sent: Monday, March 15, 2021 11:16 AM
To: Teya Stice; 'Mike Hall'; 'Branson Wells'; 'jnemes@mcadems.com'; 'Corey Mehaffy'; 'Brian J. Untiedt'; 'olivia.mcbride@lpha.mo.gov'; 'marioncopwsd@hotmail.com'; 'Ryan Neisen'; 'ldavis@hannibalpd.com'; 'RobWideman@macc.edu'; 'anthony.allen@hlg.edu'; 'Allie Bennett'; 'wendy.harrington@hannibalregional.org'; 'Gary Crane'; 'Andy Dorian (ADorian@hannibal-mo.gov)'
Cc: Devyn Campbell; Anna Gill
Subject: Marion County Multi-Jurisdictional Hazard Mitigation Plan

Subject: Marion County Multi-jurisdictional Hazard Mitigation Plan Meeting

On behalf of Marion County you are invited to the planning meeting to develop the update to the Marion County Multi-Jurisdictional Hazard Mitigation Plan. Since your business/agency/entity is directly or indirectly connected to Marion County mitigation activities, you are considered to be a stakeholder in the process. As a stakeholder in Mitigation Planning, you are invited to the upcoming planning meeting. This meeting will focus on updating the mitigation strategy. Mitigation actions, which make up the strategy, are specific activities that can be undertaken in advance to reduce the impacts of hazards.

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**Marion County Multi-jurisdictional Hazard Mitigation Plan Meeting
Planning Meeting
March 31, 2021
Meeting Time: 1:00 p.m.
Place: Sesquicentennial Building
Address: 621 Johnston Avenue, Palmyra, Missouri**

The Disaster Mitigation Act of 2000 requires counties, municipalities, school districts, and other jurisdictions to participate in an approved Hazard Mitigation Plan to be eligible for certain federal hazard mitigation funding programs. To qualify as a participant in the plan, authorized representatives for each jurisdiction must participate in development of the plan update. It is essential for the county, incorporated cities, and public school districts to send at least one individual to the planning meeting detailed above. If you will be unable to attend, please ensure that someone else from your jurisdiction is designated to attend.

The Mark Twain Regional Council of Governments has taken the lead in developing this plan. The point of contact is Cindy Hultz, Executive Director. To successfully complete this project, we need your participation and input.

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Cindy Hultz
Executive Director

Mark Twain Regional Council of Governments
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www.marktwaincog.com

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Cc: Devyn Campbell; Anna Gill
Subject: Randolph County Multi-Jurisdictional Hazard Mitigation Plan Update

Subject: Marion County Multi-Jurisdictional Hazard Mitigation Plan Update

Please confirm your attendance or provide contact information for your designated alternate by responding to Cindy Hultz at 573-565-2203 or hultzcog@rallstech.com

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What is a Hazard Mitigation Plan?

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- Attending and contributing in the planning committee meeting;
- Providing requested data (as available);
- Reviewing and providing comments on plan drafts;
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- Risk Assessment: Review and provide comments on the risk assessment.
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Perry, MO 63462
573-565-2203

Mark Twain Regional COG
42494 Delaware Lane
Perry, MO 63462

Roger Sutter
8203 County Road 346
Taylor, MO 63471

FIRST-CLASS



PTNEY BOWES ***
02 7H
0001226444
US POSTAGE
\$ 000.51⁰
MAR 15 2021
MAILED FROM ZIP CODE 63462

Mark Twain Regional COG
42494 Delaware Lane
Perry, MO 63462

Randy Klockey
161 County Road 217
Ewing, MO 63440

FIRST-CLASS



PTNEY BOWES ***
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mark twain regional
council of governments

Audrain

Macon

Marion

Monroe

Pike

Ralls

Randolph

Shelby

(573) 565-2203

Fax (573) 565-2205

42494 Delaware Lane

Perry, MO 63462

March 15, 2021

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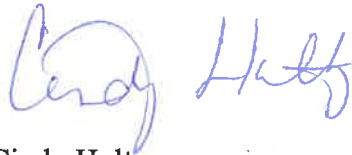
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Cindy Hultz is inviting you to a scheduled Zoom meeting.

Topic: Marion County HMP

Time: Mar 31, 2021 01:00 PM Central Time (US and Canada)

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Meeting ID: 828 0281 7072

Passcode: 828270

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+13126266799,,82802817072#,,,,*828270# US (Chicago)

Dial by your location

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+1 312 626 6799 US (Chicago)

+1 929 205 6099 US (New York)

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To: Teya Stice <tstice@marioncounty-mo.gov>; 'Mike Hall' <mhall@marion911.com>; 'Branson Wells' <bwells@marion911.com>; 'jnemes@mcadems.com' <jnemes@mcadems.com>; 'Corey Mehaffy' <director@Hredc.com>; 'Brian J. Untiedt' <Brian.Untiedt@modot.mo.gov>; 'olivia.mcbride@lpha.mo.gov' <olivia.mcbride@lpha.mo.gov>; 'marioncopwsd@hotmail.com' <marioncopwsd@hotmail.com>; 'Ryan Neisen' <RNeisen@hannibalfire.com>; 'ldavis@hannibalpd.com' <ldavis@hannibalpd.com>; 'RobWideman@macc.edu' <RobWideman@macc.edu>; 'anthony.allen@hlg.edu' <anthony.allen@hlg.edu>; 'Allie Bennett' <abennett@northeast-power.coop>; Wendy Brumbaugh <director@shelbycountymmo.com>; 'Gary Crane' <glcrane600@gmail.com>
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Subject: FW: Marion County Multi-Jurisdictional Hazard Mitigation Plan

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Planning Meeting
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1:00 p.m.

AGENDA

Welcome/Introductions: Devyn Campbell, Fiscal Officer
Mark Twain Regional Council of Governments

Hazard Mitigation Planning Purpose

Grant Programs Linked to Approved Plan

Planning Tasks/Multijurisdictional Approach

Participation Requirement

Public Involvement/Comments

Data Collection Questionnaires

Discussion of Hazards

Critical Facility Inventory

Plan Update Format

Sample Results of Countywide Risk Assessment Update

Update Mitigation Goals

Mitigation Action Updates

Update the Mitigation Strategy

Status of Previous Actions

Development of New Actions

Prioritization of Mitigation Actions

Plan Maintenance

Hazard Mitigation Assistance Grants

Next Steps

Table 3: Eligible Activities by Program

Eligible Activities	HMGP	BRIC	FMA
1. Mitigation Projects	✓	✓	✓
Property Acquisition and Structure Demolition	✓	✓	✓
Property Acquisition and Structure Relocation	✓	✓	✓
Structure Elevation	✓	✓	✓
Mitigation Reconstruction	✓	✓	✓
Dry Floodproofing of Historic Residential Structures	✓	✓	✓
Dry Floodproofing of Non-residential Structures	✓	✓	✓
Generators	✓	✓	
Localized Flood Risk Reduction Projects	✓	✓	✓
Non-localized Flood Risk Reduction Projects	✓	✓	
Structural Retrofitting of Existing Buildings	✓	✓	✓
Non-structural Retrofitting of Existing Buildings and Facilities	✓	✓	✓
Safe Room Construction	✓	✓	
Wind Retrofit for One- and Two-Family Residences	✓	✓	
Infrastructure Retrofit	✓	✓	✓
Soil Stabilization	✓	✓	✓
Wildfire Mitigation	✓	✓	
Post-Disaster Code Enforcement	✓		
Advance Assistance	✓		
5 Percent Initiative Projects	✓		
Miscellaneous/Other ⁽¹⁾	✓	✓	✓
2. Hazard Mitigation Planning	✓	✓	✓
Planning Related Activities	✓		
3. Technical Assistance			✓
4. Management Cost	✓	✓	✓

(1) Miscellaneous/Other indicates that any proposed action will be evaluated on its own merit against program requirements. Eligible projects will be approved provided funding is available.

Priority: High
 Timeline for Implementation/ Completion: 1 major tabletop exercise a year
 Status of Action: Continuing
 Report of Progress: Annually after exercise

Action No:
Description **MCHM1606**
Prepare and distribute letter to private landowners with dams, urging them to regularly inspect and maintain their dams to MO DNR standards, explaining the importance, and providing applicable DNR contact (or standards) information in the letter.

Jurisdictions Selecting the Action: Marion County The City of Hannibal
 Responsible Agency/Party: County Coordinator EMD
 Problem to be Mitigated: If private property owners do not maintain their private dams, breeches in lake dams and other dams could have a devastating effect on downgradient property owners.

Applicable Goal(s): Goal 1: Protect the lives and livelihoods of all the citizens
 Hazards Addressed: DF
 Estimated Cost: \$50.00
 Potential Funding Sources: County/City General Fund
 Cost/Benefit Discussion: This was not discussed
 Prioritization Discussion: Average STAPLEE Score 33.50
 Priority: High
 Timeline for Implementation/ Completion: 2017
 Status of Action: Continuing Not Started
 Report of Progress: Annual Report

Action No:
Description **MCHM1607**
Urge schools to educate their students on earthquake safety, and provide written materials that help that education process

Jurisdictions Selecting the Action: Marion County The City of Hannibal
 Responsible Agency/Party: County Coordinator EMD
 Problem to be Mitigated: If school staff and school children are unaware how to act/respond during an earthquake, lives could needlessly be lost

Applicable Goal(s): Goal 1: Protect the lives and livelihoods of all the citizens
 Goal 2: Decrease the impact of natural hazards.
 Hazards Addressed: EQ
 Estimated Cost: \$1,000.00
 Potential Funding Sources: County/City Fund
 Cost/Benefit Discussion: This was not discussed
 Prioritization Discussion: Average STAPLEE Score 33
 Priority: High
 Timeline for Implementation/ Completion: 2016
 Status of Action: Continuing Not Started
 Report of Progress: Annually

Action No:
Description **MCHM1608**
Review land use ordinances and modernize/update based in changing trends and market demands.

Jurisdictions Selecting the Action:
 Responsible Agency/Party: Marion County The City of Hannibal

Problem to be Mitigated:	County Coordinator	Building Inspector
Applicable Goal(s):	Goal 1: Protect the lives and livelihoods of all the citizens	
Hazards Addressed:	RF, EQ, F U	
Estimated Cost:	\$0	
Potential Funding Sources:	No funding necessary; only human action required	
Cost/Benefit Discussion:	This action did not require funding	
Prioritization Discussion:	Average STAPLEE Score of 29.50	
Priority:	Medium	
Timeline for Implementation/ Completion:	2016	
Status of Action:	Continuing	
Report of Progress:	Annual Report	

Action No:**Description****MCHM1609**

Procure necessary generators to serve as backup power supply for "after event" shelters. Can access Troop B generators as needed, but ownership would provide greater dependability. Obtain a list of approved Red Cross shelters within the county. Review land use ordinances and modernize/update based in changing trends and market demands.

Jurisdictions Selecting the Action:

Marion County

The City of Hannibal

Responsible Agency/Party:

County EMD

EMD

Problem to be Mitigated:

Certain sheltering locations lack backup power sources, making them (and the people they serve) vulnerable to uncontrollables.

Applicable Goal(s):

Goal 1: Protect the lives and livelihoods of all the citizens

Goal 3: Ensure continued operation of government and emergency function in a disaster. Goal 1: Protect the lives and livelihoods of all the citizens

Hazards Addressed:

RF LF DQ ST T SWW ET F A PH TX U

Estimated Cost:

\$50,000.00

Potential Funding Sources:

Region B RHSOC/ City General Fund

Cost/Benefit Discussion:

This was not discussed

Prioritization Discussion:

Average STAPLEE Score 24

Priority:

Low

Timeline for Implementation/ Completion:

2017

Status of Action:

Continuing

Report of Progress:

Annually

Action No:**Description****MCHM1610**

Identify populated areas in the county and secure funding to purchase warning sirens.

Jurisdictions Selecting the Action:

Marion County

Responsible Agency/Party:

County Coordinator

Problem to be Mitigated:

Unincorporated areas of the county lacks warning sirens.

Applicable Goal(s):

Goal 1: Protect the lives and livelihoods of all the citizens.

Hazards Addressed:

T

Estimated Cost:

\$26,000.00

Potential Funding Sources:

General Revenue, RHSOC Grants

Cost/Benefit Discussion:

This was not discussed

Prioritization Discussion:

STAPLEE Score of 38

Priority:

High

Timeline for Implementation/ Completion:

2020

Status of Action:

Continuing

Report of Progress:

Annually

<p>Action No: Description</p> <p>Jurisdictions Selecting the Action: Responsible Agency/Party: Problem to be Mitigated:</p> <p>Applicable Goal(s): Hazards Addressed: Estimated Cost: Potential Funding Sources: Cost/Benefit Discussion: Prioritization Discussion: Priority: Timeline for Implementation/ Completion: Status of Action: Report of Progress:</p>	<p>MCHM1611 Identify trailer parks in need of storm shelters and secure funding to construct the shelters. Marion County County Coordinator Trailer parks lack shelter that can withstand the destruction of a tornado. Goal 1: Protect the lives and livelihoods of all the citizens. T Unknown Emergency Preparedness Grants This was not discussed STAPLEE Score of 37 High 5 years Continuing Annually</p>
<p>Action No: Description</p> <p>Jurisdictions Selecting the Action: Responsible Agency/Party: Problem to be Mitigated: Applicable Goal(s):</p> <p>Hazards Addressed: Estimated Cost: Potential Funding Sources: Cost/Benefit Discussion: Prioritization Discussion: Priority: Timeline for Implementation/ Completion: Status of Action: Report of Progress:</p>	<p>MCHM1612 Agencies will work together to provide updated floodplain maps. Marion County County Coordinator Floodplain maps are not up to date Goal 1: Protect the lives and livelihoods of all the citizens. Goal 2: Decrease the impact of natural hazards. F \$0 No funding necessary; only human action required This action did not require funding STAPLEE Score of 30 High 2020 Continuing Annual Report</p>
<p>Action No: Description</p> <p>Jurisdictions Selecting the Action: Responsible Agency/Party: Problem to be Mitigated: Applicable Goal(s): Hazards Addressed: Estimated Cost: Potential Funding Sources: Cost/Benefit Discussion: Prioritization Discussion: Priority: Timeline for Implementation/ Completion: Status of Action: Report of Progress:</p>	<p>MCHM1613 Actively research and promote drought resistant farming practices to farmers in the county. Marion County County Coordinator Farmers suffering major losses during droughts. Goal 2: Decrease the impact of natural hazards. D \$1,000.00 County General Revenue Fund This was not discussed STAPLEE Score of 24 Low 2020 Continuing Annually</p>

Action No:	MCHM1614
Description	A safe room/storm shelter will be constructed to protect individuals in the school and community.
Jurisdictions Selecting the Action:	Palmyra School District
Responsible Agency/Party:	Palmyra R-1
Problem to be Mitigated:	Injury and death resulting from the destructive wind storms of tornados.
Applicable Goal(s):	Goal 1: Protect the lives and livelihood of all the citizens
Hazards Addressed:	ST T
Estimated Cost:	Unknown
Potential Funding Sources:	HMPG, PDN
Cost/Benefit Discussion:	This was not discussed
Prioritization Discussion:	STAPLEE Score of 37
Priority:	High
Timeline for Implementation/ Completion:	2020
Status of Action:	New
Report of Progress:	Annually

Marion County Action Worksheets

The sample action worksheet below was completed by members of the planning committee to determine action items.

Multi-Jurisdictional Local Hazard Mitigation Plan

Action Worksheet	
Name of Jurisdiction:	
Risk / Vulnerability	
Hazard(s) Addressed:	
Problem being Mitigated:	
Action or Project	
Applicable Goal Statement:	
Action/Project Number:	
Name of Action or Project:	
Mitigation Category:	
Action or Project Description:	
Estimated Cost:	
Benefits:	
Plan for Implementation	
Responsible Organization/Department:	
Action/Project Priority:	
Timeline for Completion:	
Potential Fund Sources:	
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	
Report of Progress:	

MARION COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE PLANNING MEETING—SIGN-IN SHEET

Project: Marion County, Missouri Multi-jurisdictional Hazard Mitigation Plan Update **Meeting Date/Time:** March 31, 2021 1:00pm

Facilitator: Deyn Campbell, Fiscal Officer/Community Planner **Place/Room:** Sesquicentennial Building, 621 Johnston Avenue, Palmyra, Missouri

Name	Title	Department/Agency	Email	Phone #	Signature
Mike Schaefer	Hwy Supervisor	Marion Co Hwy	MChed@kentucky.net	573-769-4660	
Teya Stice	County Coordinator	County Coordinator	tstice@marioncountymo.gov	573-769-5545	
Beth Ann Wright	LEP Secretary	Marion County	rwright@marioncountymo.gov	573-769-5545	
Deena Parsons	City Clerk	Palmyra	cityclerk@cityofpalmyra.com	573-769-2223	
Andrew Davis	Palmyra BPW Electric Foreman	Palmyra BPW	electric@cityofpalmyra.com	573-769-6001	
RUSTY AORIAN	POTENTIAL MAYOR	PALMYRA	R.AORIAN@1958ECHARMILITARY	573-231-9245	
Cindy Hultz	Ex. Dir.	MTRCOG	chultz@menttwin.com	573-865-2200	
Livt Malone	Superintendent	Palmyra R-1	malonek@palmyra.k12.mo.us	573-769-2066	
Jared Pothius	HS Principal	Palmyra R-1	potiusj@palmyra.k12.mo.us	573-769-2067	
Jacob Nacke	Lieutenant	Hannibal Police	jnacke@hannibalpolice.com	573-221-0987	
Ryan Nelsen	Deputy Chief	Hannibal Fire	rnelisen@hannibalfire.com	573-221-0657	

MARION COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN UPDATE PLANNING MEETING—SIGN-IN SHEET

Project: Marion County, Missouri Multi-jurisdictional Hazard Mitigation Plan Update **Meeting Date/Time:** March 31, 2021 1:00pm

Facilitator: Delyn Campbell, Fiscal Officer/Community Planner **Place/Room:** Sesquicentennial Building, 621 Johnston Avenue, Mark Twain Regional Council of Governments Palmyra, Missouri

Name	Title	Department/Agency	Email	Phone #	Signature
Susan Johnson	Supt.	Hannibal School	sjohnsp@hannibal.k12.mo.us		
Brian Untiedt		MoDOT			
Jason Keilholz		Marion County School			
Mike Hall		NECOMM 911			
Herman Yoder	Manager	Water			
Chief Nemes		Fire			
Doug Drake	Safety & Compliance Mgr	Northwest Power	dadrake@northwest-power.coop	573-766-8216	Doug Drake
PAUL FRANKENBACH					
STEVE BEGLEY	Commissioner	Marion County			
Randy Klobecke		MOED	klobecke@klobecke.com		
Sopronie Schroeder		" Klocke Inc			

MARION COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN



PLAN UPDATE MEETING MARCH 31, 2021



AGENDA

- Hazard Mitigation Planning Purpose
- Grant Programs Linked to Approved Plan
- Planning Tasks / Multi-jurisdictional Approach
- Participation Requirements
- Public Involvement/Comments
- Data Collection Questionnaires
- Discussion of Hazards
- Critical Facility Inventory




AGENDA

- Plan Update Format
- Sample Results of Countywide Risk Assessment Update
- Update Mitigation Goals
- Mitigation Action Updates
- Update the Mitigation Strategy
 - Status of Previous Actions
 - Development of New Actions
 - Prioritization of Mitigation Actions
- Hazard Mitigation Assistance Grants
- Plan Maintenance
- Next Steps





WHAT IS MITIGATION?

- Sustained action taken to reduce or eliminate long-term risk to human life and property from hazard events
- Mitigation planning is a process for communities to:
 - Identify the hazards to which they are at risk;
 - Assess the potential impacts of those hazards;
 - Develop goals, objectives, and actions to reduce impacts; and
 - Prioritize and implement mitigation actions.



DISASTER MITIGATION ACT OF 2000 (DMA 2K)

- Requires local governments to adopt a natural hazard mitigation plan to maintain eligibility for FEMA mitigation funds.
- Plan must be updated and approved by FEMA every 5 years.
- This is an update to the existing 2015 Marion County Multi-jurisdictional Hazard Mitigation Plan.

PRESIDENTIAL MAJOR DISASTER DECLARATIONS INCLUDING MARION COUNTY SINCE 1965

Year	Disaster	Disaster Date	Special Assistance
1965	1965 Flood	Jan 10 - 1965	FEMA Disaster #1000-0100
1968	1968 Flood	Jan 10 - 1968	FEMA Disaster #1000-0100
1972	1972 Flood	Jan 10 - 1972	FEMA Disaster #1000-0100
1977	1977 Flood	Jan 10 - 1977	FEMA Disaster #1000-0100
1981	1981 Flood	Jan 10 - 1981	FEMA Disaster #1000-0100
1985	1985 Flood	Jan 10 - 1985	FEMA Disaster #1000-0100
1989	1989 Flood	Jan 10 - 1989	FEMA Disaster #1000-0100
1993	1993 Flood	Jan 10 - 1993	FEMA Disaster #1000-0100
1997	1997 Flood	Jan 10 - 1997	FEMA Disaster #1000-0100
2001	2001 Flood	Jan 10 - 2001	FEMA Disaster #1000-0100
2005	2005 Flood	Jan 10 - 2005	FEMA Disaster #1000-0100
2009	2009 Flood	Jan 10 - 2009	FEMA Disaster #1000-0100
2013	2013 Flood	Jan 10 - 2013	FEMA Disaster #1000-0100
2017	2017 Flood	Jan 10 - 2017	FEMA Disaster #1000-0100
2020	2020 Flood	Jan 10 - 2020	FEMA Disaster #1000-0100




APPROVED HAZARD MITIGATION PLAN ESTABLISHES ELIGIBILITY FOR FEMA HMA GRANTS

- Hazard Mitigation Grant Program
- Building Resilient Infrastructure & Communities
- Flood Mitigation Assistance Program





HAZARD MITIGATION GRANT PROGRAM

- The Hazard Mitigation Grant Program (HMGP) provides grants to States and local governments to implement long-term hazard mitigation measures after a major disaster declaration.
- Equal to 15 percent (20 percent for Enhanced Plan State) of the first \$2 billion of estimated aggregate amounts of disaster assistance—based on a sliding scale formula after the first \$2 billion.
- Eligible applicants are state agencies, local governments, private non-profit organizations, or Indian tribal governments.
- **An approved local mitigation plan is required.**




BUILDING RESILIENT INFRASTRUCTURE & COMMUNITIES

- Annual Appropriation
- Nationally Competitive Grant
- 75% federal & 25% non-federal match
- FY 2021 Applications due to SEMA in the fall of 2021
 - Each state gets \$575,000
 - SEMA forwards selected applications to FEMA
- **An approved local mitigation plan is required.**




FLOOD MITIGATION ASSISTANCE PROGRAM

- Annual Appropriation
- Sub-applicant must participate in National Flood Insurance Program (NFIP)
- NFIP insured property
- 75% federal & 25% non-federal match
- FY 2021 Applications due to SEMA in the fall
 - SEMA forwards selected applications to FEMA
- **An approved local mitigation plan is required.**



9 TASKS TO COMPLETE THE PLAN UPDATE

- Task 1: Determine the Planning Area and Resources
- Task 2: Build the Planning Team
- Task 3: Create an Outreach Strategy
- Task 4: Review Community Capabilities
- Task 5: Conduct a Risk Assessment
- Task 6: Develop a Mitigation Strategy
- Task 7: Review and Adopt the Plan
- Task 8: Keep the Plan Current
- Task 9: Create a Safe and Resilient Community



MULTI-JURISDICTIONAL PLAN APPROACH

TASK 1: DETERMINE THE PLANNING AREA

- Marion County Commission
- Hannibal
- Palmyra
- Hannibal Public School District
- Palmyra Public School District
- Marion County R-II



HAZARD MITIGATION PLANNING COMMITTEE TASK 2: BUILD THE PLANNING TEAM

Jurisdictions <ul style="list-style-type: none"> • Emergency Responders • County Clerks • City Clerks • Elected Officials • Public Works Directors • Floodplain Managers • Stormwater Managers • County And City Planners • Economic Development Directors • GIS Staff • School Representatives 	Stakeholders <ul style="list-style-type: none"> • Business Partners • Private-non-profits • State Agencies <ul style="list-style-type: none"> – SEMA – Missouri Department of Natural Resources – Missouri Department of Transportation • Federal Agencies <ul style="list-style-type: none"> – Federal Emergency Management Agency • Academia • Local/Regional Agencies
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STAKEHOLDERS PURPOSE:

- Review plan and make recommendations
- Review mitigation actions and make sure actions are included to meet your needs

4/19/2021




BENEFITS OF PARTICIPATING IN A MULTI-JURISDICTIONAL PLAN

- Enables comprehensive approach to mitigate hazards that affect multiple jurisdictions;
- Shares costs and resources;
- Avoids duplication of efforts;
- Improves coordination/communication among local jurisdictions; and
- Imposes external framework/schedule on process.




REQUIREMENTS FOR EACH PARTICIPATING JURISDICTION

- Designate a representative to serve on the Hazard Mitigation Planning Committee;
- Provide data for and assist in the development of the updated risk assessment that describes how various hazards impact your jurisdiction;
- Provide data to describe current capabilities;
- Develop/update mitigation actions (at least one) specific to your jurisdiction;
- Provide comments on plan drafts as requested;
- Inform the public, local officials, and other interested parties about the planning process and provide opportunities for them to comment on the plan; and
- Formally adopt the mitigation plan.




WHAT HAPPENS IF MY JURISDICTION CHOOSES NOT TO PARTICIPATE IN THE PLAN?

Jurisdictions (including public school districts) that have not participated in a FEMA-approved mitigation plan **will not be eligible** applicants for FEMA Hazard Mitigation Assistance grants.



PUBLIC INVOLVEMENT REQUIREMENTS TASK 3: CREATING AN OUTREACH STRATEGY


- 1. During Drafting Stage
Ideas to inform the public
 - Public Survey
 - Hard Copies—City Halls/Libraries/Post Offices?
 - Link on County Website/Other Websites?
 - Article in the newspaper
- 2. Prior to approval
Draft Available via County Website
Hard Copies—at least two public locations
- Other Ideas/Events to Inform the Public?



DATA COLLECTION QUESTIONNAIRES


TASK 4 REVIEWING COMMUNITY CAPABILITIES
TASK 5 CONDUCT RISK ASSESSMENT

- Separate forms for local govts. and schools
- Look through Data Collection Guide
 - Capability Assessment Section
 - Existing Plans/Policies/Ordinances
 - Administrative/Technical Capabilities
 - Fiscal Resources
 - Additional Questions
 - Historic Hazard Events



DATA COLLECTION QUESTIONNAIRES


- Complete what you can
- 30 Minutes to complete questionnaire



HAZARD IDENTIFICATION AND RISK ASSESSMENT


- Hazard Profile
 - Hazard Description
 - Geographic Location
 - Severity/Magnitude/Extent
 - Previous Occurrences
 - Probability of Future Occurrence
- Vulnerability Assessment
 - Vulnerability Overview
 - Potential Losses to Existing Development
 - Future Development
 - Hazard Summary by Jurisdiction
- Problem Statement

Based on existing plan, additional information from planning committee, additional research/analysis



NATURAL HAZARDS FOR CONSIDERATION

- Natural Flood-Related Hazards
 - Flooding
 - Levee Failure
 - Dam Failure
- Natural Geologic Hazards
 - Earthquake
 - Land Subsidence / Sinkholes
- Natural Meteorological Hazards
 - Drought
 - Extreme Temperature
 - Severe Thunderstorms
 - Severe Winter Weather
 - Tornadoes
- Natural Other Hazard
 - Wildfire
 - Pandemic




FLOODING (MAJOR AND FLASH)

- Primary Flooding Sources
- Previous Events from NCDC (National Climatic Data Center)
- USDA Risk Management Agency Crop Insurance Payments
- Presidential Declarations
- FEMA Average Annual Loss Study




LEVEE FAILURE

- Locations of Levees in Planning Area
 - Accredited levees
 - Non-accredited levees protecting populations
 - Agricultural Levees
- Previous Events



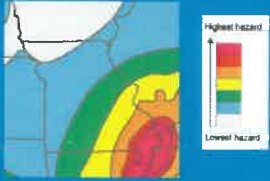
DAM FAILURE

- Dams
 - State Regulated by Class
 - Federal by Class
 - Unregulated by Class
- Previous Events?



EARTHQUAKE

- EQ Risk\ USGS Maps, etc.
- Previous Events in planning area



LAND SUBSIDENCE/SINKHOLES

- Known Sinkhole Areas
 - Mines
 - Karst
- Previous Events




DROUGHT

- Typical Impacts
- National Drought Mitigation Center Drought Impact Reporter Impacts
- Previous Events from USDA Risk Management Agency's insured crop damages from drought




EXTREME TEMPERATURES

- Previous Events
 - NWS Advisories/Watches/Warnings for Heat/Excessive Heat or Cold/Wind Chill
 - NCEI (National Centers for Environmental Information)
 - Any injuries/fatalities?
 - USDA Risk Management Agency Crop Losses



SEVERE THUNDERSTORMS


- Presidential Declarations including severe storms
- Previous Events
 - NCEI NWS Watches/Warnings
 - USDA Risk Management Agency Crop Insurance Payments





SEVERE WINTER WEATHER

- Presidential Declarations including winter weather
- Previous Events
 - NCEI
 - NWS Watches/Warnings




TORNADO

- Presidential Declarations including tornadoes
- Previous Events
 - NCEI
 - NWS Watches/Warnings



WILDFIRE


- Previous Events from National Fire Incident Reporting System (if available)
- Wildland Urban Interface/Intermix from SILVIS maps

PANDEMIC


- Center for Disease Control
 - Previous and ongoing events
 - History of pandemics
- Vulnerability Rating map of the United States (ArcGIS)

4/19/2021



CRITICAL FACILITIES

- Critical Facility—essential in providing utility or direction either during the response to an emergency or during the recovery operation.
 - Essential Facility—if damaged would have devastating impacts on disaster response and/or recovery.
 - High Potential Loss Facility—if damaged would have a high loss or impact on the community.
 - Transportation/Lifeline Facility—assets critical for transport and provision of necessary utilities



CRITICAL FACILITY EXAMPLES

Essential Facilities	High Potential Loss Facilities	Transportation and Lifeline
<ul style="list-style-type: none"> • Hospitals and other medical facilities • Police stations • Fire station • Emergency Operations Centers 	<ul style="list-style-type: none"> • Power plants • Dams/levees • Military installations • Hazardous material sites • Schools • Shelters • Day care centers • Nursing homes • Main government buildings 	<ul style="list-style-type: none"> • Highways, bridges, and tunnels • Railroads and facilities • Bus facilities • Airports • Water treatment facilities • Natural gas facilities and pipelines • Oil facilities and pipelines • Communications facilities

LEVEE FAILURE

16 Levee Systems 56 Miles of Levees 167 Levee Structures 89 Years Average Levee Age

Source: <https://www.missouri.gov/arcgis/>

DAM FAILURE

Due to the number of high hazard dams (17 in Marion County) dam failure and its associated impacts is a possibility for disaster. Sixteen of the 17 dams are located in rural areas and would not have a major effect. The McKay Dam located within the limits of Hannibal could have a significant impact on the businesses and residents in the inundation area.

Changing Future Conditions Considerations

Source: US Climate Resilience Toolkit | <https://climate.resilience.gov/what-are-climate-impacts/>

EARTHQUAKES

Seismicity Information for Marion County, Missouri

Seismicity Level: Very Low

Total Number of Earthquake in Marion County since 1921: 0

Probability of a 5.0 Earthquake in 50 Years: 0.25%

Source: <https://www.missouri.gov/arcgis/>

LAND SUBSIDENCE / SINKHOLES

Sinkholes in Marion County

Mines in Marion County

Vulnerability Overview

Sinkholes in the planning area are not common occurrence due to composition of the land. While some sinkholes may be considered a slow changing nuisance, other more sudden, catastrophic collapses can destroy property, delay construction projects and contaminate ground water resources. The Missouri Department of Natural Resources shows no sinkholes for the planning area.

DROUGHT

Previous Occurrences

Drought occurs periodically in Missouri with the most severe and costly one occurring in 2018. Although droughts are not the spectacular weather events that floods, blizzards or tornadoes can be, historically, they produce more economic damage to the State than all other weather events combined. According to NCEM's storm database, 6 drought events have occurred in Marion County between 2000 to 2020.

Table 3.30. Missouri Insurance Payments Due to Drought from 2016 to 2020

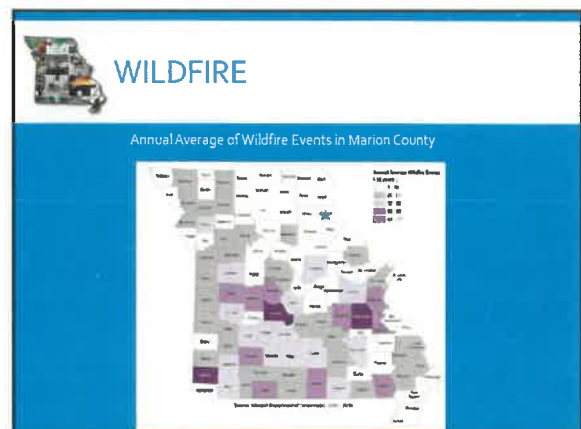
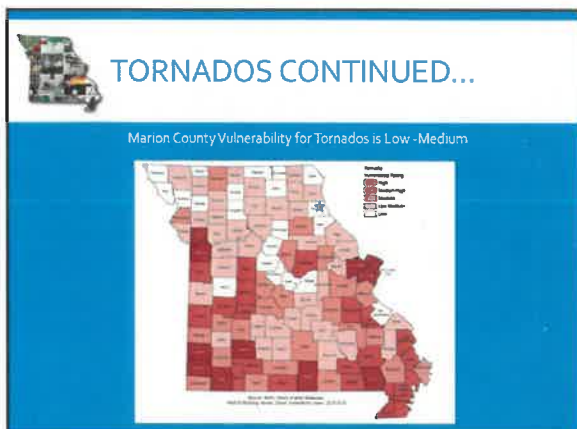
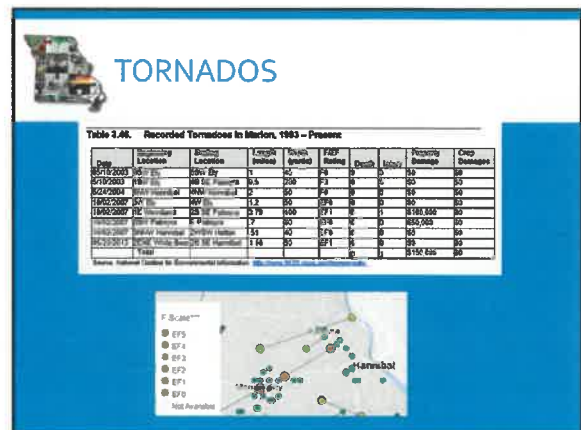
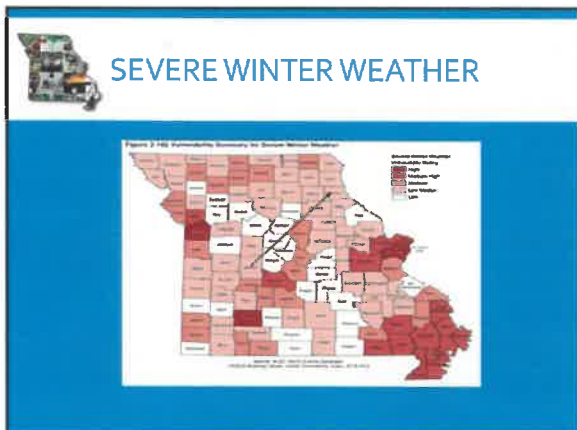
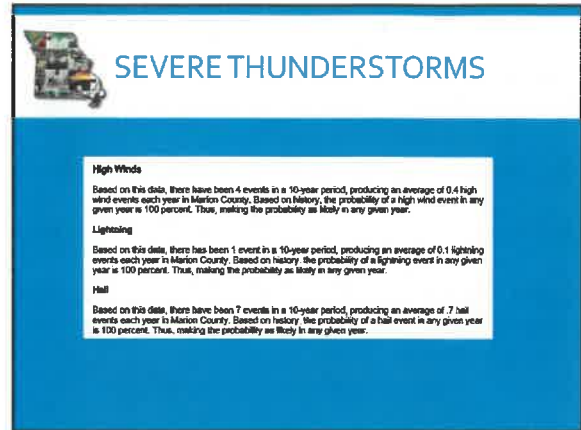
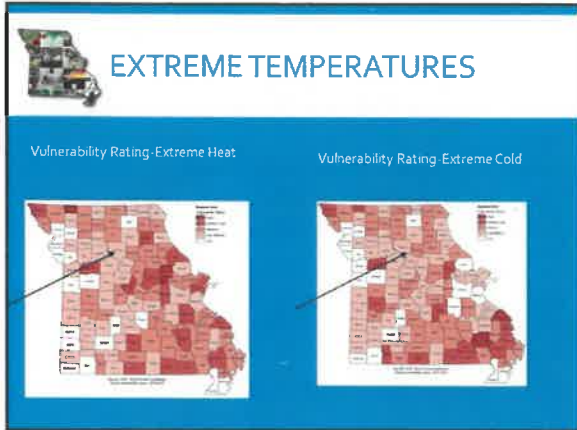
Drought Year	Insurance Payment
2016	\$11,177.50
2017	\$665,046.02
2018	\$105,293.46
2019	\$43,754.00
2020	\$43,781.40
Total	\$870,058.41

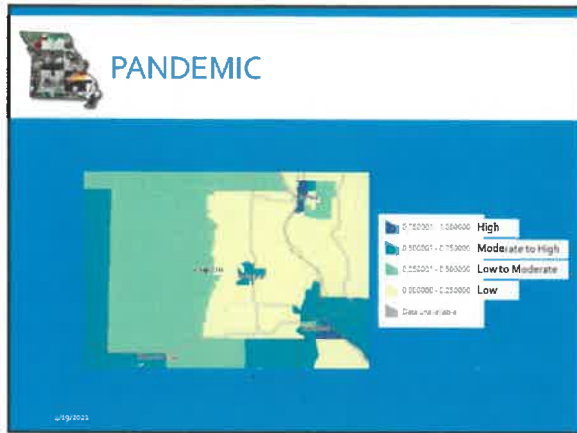
Source: <https://www.missouri.gov/arcgis/>

DROUGHT CONTINUED...

Marion County Vulnerability Ranked High for Drought

4/19/2021





Employer Name	Main Location	Product or Service	Employees

Source: Data Collection Questionnaire, local Economic Development Committee



-
- ### MITIGATION STRATEGY: GOALS AND ACTIONS
- **Goals:** Describe the overall direction of the plan
 - **Actions:** Describe specific activities or projects designed to achieve goals




-
- ### COMMON CATEGORIES OF MITIGATION GOALS
- Public Education
 - Policies/Planning/Training/Communication
 - Reduce Risk to Life and Property
 - Protection of Critical/Essential Facilities



STATE GOALS 2018 MISSOURI STATE HAZARD MITIGATION PLAN

- Goal 1: Implement mitigation actions that improve the protection of human life, health, and safety from the adverse effects of disasters
- Goal 2: Implement mitigation actions that improve the continuity of government and essential services from the adverse effects of disasters
- Goal 3: Implement mitigation actions that improve the protection of public and private property from the adverse effects of disasters
- Goal 4: Implement mitigation actions that improve the protection of community tranquility from the adverse effects of disasters



MARION COUNTY 2016 PLAN GOALS (REVIEW/REVISE)

- Goal 1: Protect the lives and livelihoods of all the citizens
- Goal 2: Decrease the impact of natural hazards
- Goal 3: Ensure continued operation of government and emergency function in a disaster



GROUP DISCUSSIONS

- Review goal statements (handout)
- Remember
 - Goals should be broad
 - Mitigation vs. Preparedness/Response
- Report to group with suggested revisions
 - Combine
 - Remove
 - Re-word
 - Add new



UPDATE MITIGATION ACTIONS




MITIGATION ACTIONS

S
pecific
M
easurable
A
chievable
R
elevant
T
ime bound

- See Handout
- Update actions that apply to your jurisdiction
 - Completed – provide date completed and funding amount if applicable
 - KEEP Not Started – provide details on any plans made to initiate action
 - KEEP In-Progress – provide details on progress made to-date
 - KEEP Modify – provide details on changes/updates to the action
 - Delete – provide reason for deleting
- Discuss with other representatives from your jurisdiction.
- Be careful to distinguish between response actions (actions after event) and mitigation actions (actions before an event that reduce or eliminate need for response)
- Actions should be SMART: specific, measurable, achievable, relevant, time bound




UPDATING THE MITIGATION STRATEGY



MITIGATION ACTIONS


- Losses from hazards can be reduced if communities take action before the next disaster
- Actions have long term and cumulative benefits
- Some may be low-cost initiatives readily adopted
- Others may be dependent on available funding or best implemented following a disaster
- Relevant to your Jurisdiction
- Focus on Mitigation- Not a response plan
- Not all actions identified through this planning process will be eligible for FEMA grants



UPDATING/DEVELOPING MITIGATION ACTIONS


- Previous Actions—status updates required for ALL actions from previous plan (FEMA will not approve without this)
- New Actions—add new actions, as appropriate
 - FEMA’s Mitigation Ideas Booklet
 - Review Problem Statements from Risk Assessment
 - State Priorities for Hazard Mitigation Assistance Grants
 - Public Opinion from Surveys

Specific
Measurable
Achievable
Relevant
Time-bound




MITIGATION ACTIONS

- Each jurisdiction must have AT LEAST one action.
- Communities that participate in NFIP must have an ADDITIONAL action that relates to continued compliance.
- Complete action worksheets



MITIGATION ACTIONS


- Each jurisdiction is required to have at least one mitigation action
- Any Questions?



MITIGATION ACTION PLANS


- Complete for Continuing and New actions
- Provides details for each action

Action Description	
Name/Location	Other Information
Priority/Category	Other Information
Responsible Agency	Other Information
Estimated Cost	Other Information
Start/End Dates	Other Information
Project Status	Other Information
Notes	Other Information
Project Manager	Other Information
Contact Information	Other Information
Project Status	Other Information
Other Notes	Other Information



PROBLEM STATEMENTS FROM RISK ASSESSMENT / PREVIOUS ACTIONS

- Plan Problems
- Dam Failure
- Drought
- Earthquakes
- Extreme Heat
- Fire
- Flooding
- Land Subsidence
- Levee Failure
- Thunderstorm/High Winds/Lightning/Fall
- Tornado
- Winter Weather/Snow/Ice/Severe Cold



Any gaps between problem statements and risk assessment actions addressed for your jurisdiction?



DAM FAILURE PROBLEM STATEMENTS

Problem Statement

- A lack of regular inspection/maintenance of un-regulated high hazard dams was noted by the Mitigation Planning Committee. Possible solutions include the development of a regular maintenance schedule, identification of qualified staff and/or consultant to assist, and maintenance report submittal requirements.



DROUGHT PROBLEM STATEMENTS

Problem Statement

- Marion County is at a medium-high risk for a severe drought which is an extra strain placed on the water supply system. Possible solutions include the development of agreements with neighboring communities for a secondary water source and review of local ordinances/regulation for inclusion of water-use restrictions during periods of drought.



EARTHQUAKES PROBLEM STATEMENTS

- Although Marion County is not located in an area that will likely see catastrophic damage from an earthquake, the County will be impacted by the loss of communications, transportation, the disruption of roads, rail and pipelines, water transportation, and the area will see a significant amount of refugees fleeing from Southern Missouri if a quake hits that area. Education is minimal for earthquakes due to the low likelihood of impact. There is one Emergency Management Director for the County that knows where all the generators and emergency buildings are. Not all citizens utilize social media and texting.
- An emergency plan for earthquakes needs to be made available to all residents and stated what would happen in the event of an earthquake with details for communications and transportation. Downtown building owners need to know plan in case damage is done to their building. Residents need to be made aware of where the generators and emergency buildings are located. Utilization of social media and texting needs to be encouraged.



EXTREME TEMPERATURE'S PROBLEM STATEMENTS

Problem Statement

- Marion County has a growing population of residents over 65 years, who are at a greater risk for extreme-temperature related illnesses, injuries, and death. Possible solutions include organizing outreach to the vulnerable elderly populations, including establishing and promoting accessible heating or cooling centers in the community and creating a database in coordination with the Health Department to track those individuals at high risk.



WILDFIRE PROBLEM STATEMENTS

Problem Statement

- Residents do not comply with burn bans, education is not available for the levels of burn bans, many residents lack education in fire safety and not all residents utilize social media and texting. Education needs to occur on the dangers associated with not complying with the burn bans, more education for fire safety and encourage utilization of social media and texting. Due to Marion County's high drought rating, they may be more susceptible to fires.



LAND SUBSIDENCE/SINKHOLES PROBLEM STATEMENTS


Problem Statement

- Sinkholes can occur at any time and without warning and vary by size. There can be a disruption of transportation services and not residents in the dangerous areas are not educated on what to do if a sinkhole occurs. Education needs to occur on the danger areas of a sinkhole occurring and what to do if a sinkhole does occur.




LEVEE FAILURE PROBLEM STATEMENTS

- Problem Statement
- Low-head agricultural levees are not regulated or inspected on a regular basis.
- Residents need to be informed on how to perform inspections on low-head agricultural levees.




THUNDERSTORM/HIGH WINDS/ LIGHTNING/HAIL PROBLEM STATEMENTS

- Problem Statement
- Thunderstorms can damage power lines with the high winds or fallen debris such as tree limbs. Not everyone in the county utilizes social media, texting or have access to a weather radio, communities would benefit from updated sirens. Possible solutions include review of local ordinance and building codes to address high winds and/or construction techniques to include structural bracing, straps and clips, or anchor bolts.




TORNADO PROBLEM STATEMENTS

- Problem Statement
- Marion County has inadequate tornado shelters throughout the county, not everyone utilizes social media and/or texting, the rural areas do not have warning sirens, lack of awareness for available shelters and more education needs to occur.
- Possible solutions include promoting the use of NOAA weather radios and conducting public education and outreach activities to increase awareness of tornado risk.



WINTER WEATHER/SNOW/ICE/ SEVERE COLD PROBLEM STATEMENTS


- Problem Statement
- Marion County is expected to experience at least one severe winter weather events annually, the county has a low-medium vulnerability rating. Jurisdictions should enhance their weather monitoring to be better prepared for severe weather hazards. If jurisdictions monitor winter weather, they can dispatch road crews to prepare for the hazard. County and city crews can also trim trees along power lines to minimize the potential for outages due to snow and ice. Citizens should also be educated about the benefits of being proactive to alleviate property damage as well as preparing for power outages. Education needs to occur to ensure all residents are aware of the shelters in the County, residents are educated on emergency supplies to have and the utilization of social media and texting increases.



PANDEMIC PROBLEM STATEMENTS


- Problem Statement
- In order to keep transmission rates low during a pandemic outbreak, residents need to safely distance themselves as best as possible and follow the numerous Center for Disease Control guidelines. Due to the lack of accessibility to ongoing public health information and broadband connectivity, it is especially challenging to inform residents about current and upcoming pandemic updates. It is an issue in rural America to convey the severity of pandemic outbreaks and provide preparedness instruction because social media, website posts, podcasts, etc. are not an option for every resident in the planning area.

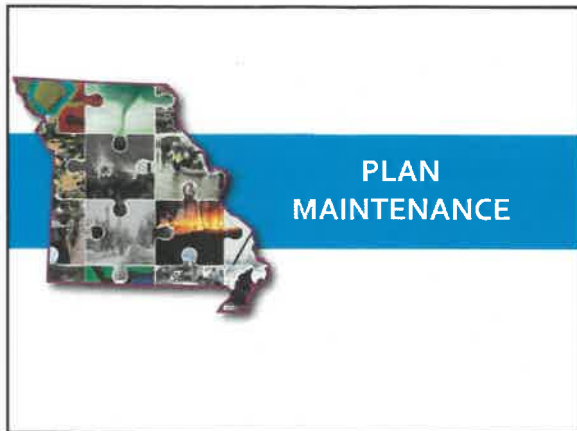

4/19/2021



ADDITIONAL RESOURCES


- FEMA's Mitigation Ideas Booklet
- Can be downloaded at:
<https://www.fema.gov/media-library/assets/documents/30627?id=6938>




PLAN MAINTENANCE

- FEMA Regulations require complete plan update every 5 years.
- FEMA requires a formal plan maintenance process to ensure that the mitigation plan remains an active and relevant document
- Who, how, and when will plan be monitored, evaluated, and updated?
- How will public be involved in plan maintenance process?
- How will mitigation strategy be incorporated into other planning mechanisms?



PLAN IMPLEMENTATION AND MAINTENANCE-HMPC CONSENSUS NEEDED

- Who, how, and when will plan be monitored, evaluated, and updated?
 - Annual Review?, After hazard events?
 - Who will organize?, Who will participate?
 - Update Status of Mitigation Actions?
- How will public be involved in plan maintenance process?
 - Press Release on annual reviews?
 - Other ideas?



PLAN IMPLEMENTATION AND MAINTENANCE-HMPC CONSENSUS NEEDED


- How will mitigation strategy be incorporated into other planning mechanisms?
 - Review Mitigation Plan during planning process to update other plans?
 - Comprehensive Plans
 - Capital Improvement Plans
 - School Infrastructure Plans
 - School Emergency Plans
 - After review of Mitigation Plan, forward strategy with updates for consideration in other planning mechanisms?



HAZARD MITIGATION ASSISTANCE (HMA) GRANTS: MISSOURI STATE EMERGENCY MANAGEMENT AGENCY


- Hazard Mitigation Grant Program-HMGP
- Building Resilient Infrastructure & Communities-BRIC
- Flood Mitigation Assistance Grants-FMA

Contact
 Heidi Carver
 State Hazard Mitigation Officer
 573-526-9116



OTHER FUNDING SOURCES

- USDA
 - Rural Development Grants
 - Emergency Watershed Protection Program
- U.S. Dept of Commerce
 - Public Works and Economic Dev. Facilities Assistance
- U.S. Dept of Housing and Urban Development
 - Community Development Block Grants
- U.S. Army Corps of Engineers
 - Studies
 - Projects




PUBLIC COMMENT PERIOD



COMMENT PERIODS-FULL PLAN DRAFT

- April 12 – 26, 2021 Committee and Public Comment Period
 - 2 week period
 - www.marktwaincog.com
 - Marion County Courthouse
 - Palmyra Spectator
 - Hannibal Courier-Post



NEXT STEPS

- May 3, 2021-Submit Plan to SEMA
- After receiving SEMA Approval-Submit Plan to FEMA

Major Non-Government Employers

Please list the non-government employers (10 or more employees) located in your jurisdiction.

Employer Name	Locations	Product or Service	# Employees
DOYCO	N OF PALMYRA	FARM EQUIPMENT	
RIVERVIEW	E OF PALMYRA	"	
BASF	" "	CHEMICALS	
CF INDUSTRIES	" "	"	
FARM SERVICE	TAYLOR	FARM SUPPLIES	
NE POWER	PALMYRA	POWER	
R1 SCHOOL	PALMYRA	SCHOOL	
R2 SCHOOL	PHIL	"	
HANNIBAL GOSD	HANNIBAL	"	
HRH COMPLEX	"	MEDICAL	
RACK BUILDERS	PALMYRA	INDUSTRY	
PORT INDUSTRIES	"	"	
NFI/CONCRETE/ACE	"	FOOD & HOME	
SYDNEY TRACTOR	"	FARM EQUIPMENT	
HANNIBAL TRACTOR	"	" "	
KLOCKE INC	"	HAULING & CONSTRUCTION	
BLEIGH CONST	"	CONSTRUCTION	
BROWN'S FURNITURE	"	HOUSEHOLD FURNITURE	
FARMER'S COOP	"	FARM SUPPLIES	
HEMME CONST	TAYLOR	CONSTRUCTION	

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Marion

School District /
Educational Institution Name: Palmyra R-1

Return by: Completed during planning meeting

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: Kirt Malone + Jared Pontius

Phone: 573-769-2066

Email: malonekc@palmyra.k12.mo.us

Date: 3/31/2021

Please return questionnaires by mail, email, or fax to:

Name: _____

Address: _____

Email: _____

Fax: _____

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	X	2016	
Capital Improvement Plan	X	2020	
<u>School Emergency Plan</u>			
Shelter in place protocols	X	2019	District Safety P6L
Evacuation protocols	X	2021	Board policy
Weapons Policy	X		

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	X	All Building Principals	
Emergency Manager	X	Superintendent	
Grant Writer	NO		
Public Information Officer	X	Superintendent	

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	Y	
General obligation bonds	Y	Possibly
Special tax bonds	N	
Private activities/donations	N	
State and federal funds	N	

Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system?
Please describe. *yes. All schools have PA system.*

2. Does your school buildings' have NOAA Weather Radios? *Yes*

3. List any past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect facilities or provide education regarding hazards that could occur.

None specifically

4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.

None currently

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

Not all buildings

6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? Please list the buildings and the improvement. *Yes.*

PEs - New office area

MS - updated windows in south wing

PHS - New wrestling room, Conelli stand, renovated Ag building

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

1) Possibly

2) The elementary building sits directly next to, and below, the railroad tracks.

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

increase slightly

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

We employ a full-time SRO during the school year.

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
Palmyra Elementary Building	600 South Ashland, Palmyra, MO					ST, T, SWWW
Palmyra Middle School	600 West Line, Palmyra, MO					ST, T, SWWW
Palmyra High School	1703 S. Main, Palmyra, MO					ST, T, SWWW
Ag Building	1703 S. Main, Palmyra, MO					LI
Bus Barn	1703 S. Main, Palmyra, MO					4
Weightroom/Weighting Room	1703 S. Main, Palmyra, MO					4

HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

Multi-Jurisdictional Hazard Mitigation Plan
Data Collection Questionnaire
For Local Governments

County: Marion

Jurisdiction: City of Palmyra

Return by: Completed during planning meeting

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: _____

Phone: _____

Email: _____

Date: _____

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
<u>Comprehensive Plan</u>	Date:	
Builder's Plan	Date: <i>No</i>	
Capital Improvement Plan	Date: <i>Yes</i>	
City Emergency Operations Plan	Date: <i>2004</i> <i>Yes</i>	
County Emergency Operations Plan	Date: <i>N/A</i>	
Local Recovery Plan	Date: <i>N/A</i>	
County Recovery Plan	Date: <i>N/A</i>	
City Mitigation Plan	Date:	
County Mitigation Plan	Date:	
Debris Management Plan	Date: <i>Yes</i>	
<u>Economic Development Plan</u>	Date:	
Transportation Plan	Date: <i>N/A</i>	
Land-use Plan	Date: <i>Yes</i>	
Flood Mitigation Assistance (FMA) Plan	Date: <i>N/A</i>	
<u>Watershed Plan</u>	Date:	
Firewise or other fire mitigation plan	Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date:	

Element	Yes, No, N/A	Comments and/or Weblink
Policies/Ordinance		
Zoning Ordinance	Yes	
Building Code	Version: Yes	
Floodplain Ordinance	Date: Yes	
Subdivision Ordinance	Yes	
Tree Trimming Ordinance <i>Policy</i>	No	
Nuisance Ordinance	Yes	
Stormwater Ordinance	Yes	
Drainage Ordinance	Yes	
Site Plan Review Requirements	Yes	
Historic Preservation Ordinance	No	
Landscape Ordinance	No	
Program		
Zoning/Land Use Restrictions	Yes	
Codes Building Site/Design	Yes	
Hazard Awareness Program	No	
National Flood Insurance Program (NFIP)	Yes	
NFIP Community Rating System (CRS) program	?	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	Yes	
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	No	
ISO Fire Rating	Rating: 5	
Economic Development Program	Yes	
Land Use Program	No Yes	
Public Education/Awareness	No	
Property Acquisition	No	
Planning/Zoning Boards	Yes	
Stream Maintenance Program	No	
Tree Trimming Program	Yes	
Engineering Studies for Streams (Local/County/Regional)		

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements	Yes	
Studies/Reports/Maps		
<u>Hazard Analysis/Risk Assessment (City)</u>	No	
<u>Hazard Analysis/Risk Assessment (County)</u>	N/A	
Evacuation Route Map	No	
<u>Critical Facilities Inventory</u>	No	
<u>Vulnerable Population Inventory</u>	No	
<u>Land Use Map</u>	No	
Staff/Department		Full Time or Part Time?
Building Code Official	Yes	FT
Building Inspector	Yes	FT
Mapping Specialist (GIS)	Yes	FT
Engineer	No	
Development Planner	No	
Public Works Official	Yes	FT
Emergency Management Coordinator	Yes	PT
NFIP Floodplain Administrator	Yes	FT
Emergency Response Team	No	
Hazardous Materials Expert	No	
Local Emergency Planning Committee	No	
County Emergency Management Commission	N/A	
Sanitation Department	Yes	FT
Transportation Department	Yes No	
Economic Development Department	Yes	PT
Housing Department	No	
Historic Preservation	No	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	No	
Salvation Army	No	
Veterans Groups	Yes	

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization	No	
Homeowner Associations	Yes	
Neighborhood Associations	No	
Chamber of Commerce	Yes	
Community Organizations (Lions, Kiwanis, etc.)	Yes	
Financial Resources		Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants		Yes
Fund projects thru Capital Improvements funding		Yes
Authority to levy taxes for specific purposes		Yes
Fees for water, sewer, gas, or electric services		Yes
Impact fees for new development		?
Incur debt through general obligation bonds		Yes
Incur debt through special tax bonds		Yes
Incur debt through private activities		No
Withhold spending in hazard prone areas		Yes

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	
Builder's Plan	
Capital Improvement Plan	
Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	
Land-use Plan	
Watershed Plan	
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

Mayor/City Council 7 Elected Officials

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

Updating wells (water source) to higher flood plain

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers. Our tornado sirens are on a hard wired system that is very vulnerable to damages outdoor.

5. How many outdoor warning sirens are in your community? 6

How are they activated (indicate responsible department/personnel)? 911 or Personnel for testing.

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe. Code Red Alerts

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? No

Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

Can Provide

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

Can Provide

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

Possible - Warren Head Business Park

11. Please list major employers in your jurisdiction with an estimated number of employees.

Niemann Food

Port Industries -

Palmyra Industrial Authority 3050

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

Did not participate

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

Palmyra does participate but

compliance unknown

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Hospitals and other medical facilities
 Police stations
 Fire station
 Emergency Operations Centers

High Potential Loss Facilities

Power plants
 Dams/levees
 Military installations
 Hazardous material sites
 Schools
 Shelters
 Day care centers
 Nursing homes
 Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels
 Railroads and facilities
 Bus facilities
 Airports
 Water treatment facilities
 Natural gas facilities and pipelines
 Oil facilities and pipelines
 Communications facilities

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: Chariton County

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
1	Encourage local ordinances to require community storm shelters within sizable mobile home parks and subdivisions.					
2	Encourage the construction of freestanding public safe rooms in vulnerable locations					
3	Continue to train local floodplain managers through programs offered by the State and FEMA					

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
4	Continue to maintain a library of technical materials to support local floodplain management					
5	Build a committee composed of county and community officials, flood plain managers, and representatives from the drainage and levee districts located in the area, in order to foster communication between the parties involved and improve their collective ability to maintain natural and manmade drainage systems and mitigate damaging impacts associated with flood.					
7	Uphold the previously instituted annual severe weather awareness day, which has presently associated with the annual statewide tornado drill.					
8	Distribute hazard mitigation information to area schools for distribution to the students.					
9	Publicize the availability of flood maps to real estate, agents builders, developers and home owners.					
10	Obtain free publications from FEMA, USGS and other Federal and State agencies and deposited these materials in public places for distribution.					

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Marion _____

Jurisdiction: _____

Return by: Completed during planning meeting _____

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Teya Stice _____

Phone: 573-762-5545 _____

Email: tstice@marioncounty-mo.gov _____

Date: 3.30.21 _____

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
<u>Comprehensive Plan</u>	Date: No	
Builder's Plan	Date: Yes No	Land Use Order
Capital Improvement Plan	Date: No	
City Emergency Operations Plan	Date: NA	
County Emergency Operations Plan	Date: Yes	
Local Recovery Plan	Date: No	
County Recovery Plan	Date: No	
City Mitigation Plan	Date: NA	
County Mitigation Plan	Date: Yes	
Debris Management Plan	Date: No	
<u>Economic Development Plan</u>	Date: ?	
Transportation Plan	Date: No	
Land-use Plan	Date: Yes	Land Use Order
Flood Mitigation Assistance (FMA) Plan	Date: No	
<u>Watershed Plan</u>	Date: No	
Firewise or other fire mitigation plan	Date: No	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date: No Yes	LEPD ?

Element	Yes, No, N/A	Comments and/or Weblink
Policies/Ordinance		
Zoning Ordinance	Yes	
Building Code	Version: No	
Floodplain Ordinance	Date: Yes	
Subdivision Ordinance	No	
Tree Trimming Ordinance	No	
Nuisance Ordinance	No	
Stormwater Ordinance	No	
Drainage Ordinance	No	
Site Plan Review Requirements	No	
Historic Preservation Ordinance	No	
Landscape Ordinance	No	
Program		
Zoning/Land Use Restrictions	Planning & Zoning	
Codes Building Site/Design	No	
Hazard Awareness Program	Emergency Management	
National Flood Insurance Program (NFIP)	County Coordinator	
NFIP Community Rating System (CRS) program	No	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	No ? Ask John Clark	
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	No	
ISO Fire Rating	Rating: No	
Economic Development Program	MEMO Economic Dev-	
Land Use Program	No	
Public Education/Awareness	No	
Property Acquisition	No	
Planning/Zoning Boards	Planning & Zoning	
Stream Maintenance Program	No	
Tree Trimming Program	No	
Engineering Studies for Streams (Local/County/Regional)	No	

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements	No	
Studies/Reports/Maps		
<u>Hazard Analysis/Risk Assessment (City)</u>	NA	
<u>Hazard Analysis/Risk Assessment (County)</u>	Yes	LEPD
Evacuation Route Map	NO	
<u>Critical Facilities Inventory</u>	Yes	Tier II's
<u>Vulnerable Population Inventory</u>	No	
<u>Land Use Map</u>	No	
Staff/Department		Full Time or Part Time?
Building Code Official	No	
Building Inspector	No	
Mapping Specialist (GIS)	No	
Engineer	No	
Development Planner	No	
Public Works Official	No	
Emergency Management Coordinator	Yes	John Hank
NFIP Floodplain Administrator	Yes	Teya Stone
Emergency Response Team	Yes	
Hazardous Materials Expert	No	
Local Emergency Planning Committee	Yes	
County Emergency Management Commission	No	
Sanitation Department	No	
Transportation Department	No Yes	Mike Schaefer
Economic Development Department	Yes	Coney McHaffey
Housing Department	No	
Historic Preservation	No	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	Yes	
Salvation Army	Yes	
Veterans Groups	Yes	

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization	No	
Homeowner Associations	Yes	
Neighborhood Associations	No	
Chamber of Commerce	Yes	
Community Organizations (Lions, Kiwanis, etc.)	Yes	
Financial Resources		Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants		Yes
Fund projects thru Capital Improvements funding		Yes
Authority to levy taxes for specific purposes		No
Fees for water, sewer, gas, or electric services		No
Impact fees for new development		Yes
Incur debt through general obligation bonds		Yes
Incur debt through special tax bonds		Yes
Incur debt through private activities		No
Withhold spending in hazard prone areas		No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	NA
Builder's Plan	NA
Capital Improvement Plan	NA
Local Recovery Plan	NA
County Recovery Plan	NA
Debris Management Plan	NA
Economic Development Plan	NA
Transportation Plan	NA
Land-use Plan	Updated Land Use Order in 2020
Watershed Plan	NA
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	NA

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

Commission - 3

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

None

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

None

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

None

5. How many outdoor warning sirens are in your community? ?

How are they activated (indicate responsible department/personnel)? 911

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

Code Red Emergency Notification System

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?

No

Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

South River

Krapp Subdivision

Calvert Estates

Walnut ~~Co~~ Subdivision

Kuntzmayr Subdivision

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

No No

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

?

11. Please list major employers in your jurisdiction with an estimated number of employees.

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

County Coordinator is Floodplain Manager. Questions should be directed to her.

Multi-Jurisdictional Hazard Mitigation Plan
Data Collection Questionnaire
For Small Local Governments

County: Marion _____

Jurisdiction: City of Hannibal _____

Return by: Completed during planning meeting _____

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Lisa Peck _____

Phone: 573-221-0111 _____

Email: lpeck@hannibal-mo.org _____

Date: _____

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Comprehensive or Land-Use Plan	Y	Date:
Capital Improvement Plan	Y	Date:
Transportation Plan / Highway Department		Date:
Emergency Operations Plan	Y	Date: updated yearly
Local Recovery Plan		Date: event driven
Debris Management Plan		Date: event driven
Firewise or other fire mitigation plan	Y	Date:
Economic Development Plan		Date:
Policies/Ordinance		
Zoning Ordinance	Y	
Building Code	Y	Version: 2012
Floodplain Ordinance	Y	Date:
Drainage/Stormwater Ordinance	Y	
Site Plan Review Requirements	Y	
Historic Preservation Ordinance	Y	

Element	Yes, No, N/A	Comments and/or Weblink
Program		
National Flood Insurance Program (NFIP)	Y	
NFIP Community Rating System (CRS) program	Y	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	Y	
Firewise Community Certification		
Building Code Effectiveness Grading (BCEGs)		
ISO Fire Rating	Rating: 2	
Public Education or information programs (i.e., responsible water use, fire safety, household preparedness, or environmental education)	Y	
Mutual Aid Agreements	Y	
Studies/Reports/Maps		
Critical Facilities Inventory	Y	
Vulnerable Population Inventory		
Staff/Department		Full Time or Part Time?
Building Code Official / Building Inspector	Y	
Engineer	Y	CONTRACT
Development Planner		
NFIP Floodplain Administrator	Y	
Mapping Specialist (GIS)		
Public Works Official	Y	
Emergency Management Coordinator	Y	
Local Emergency Planning Committee		
Sanitation Department		
Highway/Transportation Department	Y	
Economic Development Department		
Housing Department		
Historic Preservation	Y	

Element	Yes, No, N/A	Comments and/or Weblink
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross		
Salvation Army	Y	
Veterans Groups	Y	
Local Environmental Organization		
Homeowner Associations		
Neighborhood Associations		
Chamber of Commerce	Y	
Community Organizations (Lions, Kiwanis, etc.)	Y	
Financial Resources	Is your jurisdiction able to? Yes or No	
Apply for Community Development Block Grants	Yes	
Fund projects thru Capital Improvements funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Incur debt through private activities		
Withhold spending in hazard prone areas		

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive or Land-Use Plan	Yes
Capital Improvement Plan	Yes
Transportation Plan / Highway Department	Yes
Emergency Operations Plan	yes
Local Recovery Plan	Yes
Debris Management Plan	Yes
Firewise or other fire mitigation plan	
Economic Development Plan	

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members) Home Rule Charter, City Manager form of government with 6 Councilmen plus the Mayor.
2. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.
3. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.
4. How many outdoor warning sirens are in your community? 17

How are they activated (indicate responsible department/personnel)?

5. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.
Yes, cable override, Code Red Emergency Alert Notification System, IPAWS.
6. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?

4 churches with basements designated for people during severe storms/ not certified tornado shelters

Please provide address locations:

1: 6400 CR 445, 2: 3324 St. Charles, 3: 1720 Prince Avenue, 4: 2335 Palmyra Road.

7. Identify residential, commercial and industrial development in your jurisdiction since last plan update.

8. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

9. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

10. Please list major employers in your jurisdiction with an estimated number of employees.

11. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

12. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Hospitals and other medical facilities
Police stations
Fire station
Emergency Operations Centers

High Potential Loss Facilities

Power plants
Dams/levees
Military installations
Hazardous material sites
Schools
Shelters
Day care centers
Nursing homes
Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and pipelines
Oil facilities and pipelines
Communications facilities

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A". In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
Emergency Management	3300 Arapaho Street					
Hannibal Regional Hospital	6000 Hospital Drive					
Hannibal Clinic	100 Medical Drive					
Hannibal Police Department	777 Broadway					
Fire Station # 1	South Fourth					
Fire Station # 2	3300 Arapaho Street					
Fire Station # 3	Huckleberry Park					
Hannibal Regional Airport	6079 CR 425					
Hannibal Convention/Tourism	925 Grand Ave.					
Sewer Treatment Plant						
Board of Public Works	3 Industrial Loop					
Water Treatment Plant	1 Riverview Park Road					

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards
General Mills	1 Red Devil Road				
Watlow	6 Industrial Loop				
Hannibal Regional Hospital	6000 Hospital Drive				

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	City of Hannibal
Type of event	Flooding
Nature and magnitude of event	Major flood 2013
Location	Hannibal
Date of event	
Injuries	0
Deaths	0
Property damage	
Infrastructure damage	Street, storm sewer
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: City of Hannibal

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
6	Investigate funding opportunities for the Keytesville school district to build a secondary access point at their facility to provide an egress route should a natural hazard event causes damage to the nearby pipeline, which is dangerously close to the only existing access.					

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Marion

School District /

Educational Institution Name: Hannibal School District #60

Return by: Completed during planning meeting

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: Susan Johnson, Superintendent of Schools

Phone: (573)221-1258

Email: sjohnson@hannibal60.com

Date: 3/31/2021

Please return questionnaires by mail, email, or fax to:

Name: Susan Johnson, Superintendent

Address: 4650 McMasters Avenue Hannibal, MO 63401

Email: sjohnson@hannibal60.com

Fax: (573)221-2994

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	Annually Reviewed	
Capital Improvement Plan	Yes	3/24/2021	
<u>School Emergency Plan</u> Shelter in place protocols Evacuation protocols	Yes	Annually Reviewed	
Weapons Policy	Yes	Board Policy	

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Principal at each school building	
Emergency Manager	Yes	Business Manager	
Grant Writer	No	N/A	
Public Information Officer	Yes	Superintendent	

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Yes	
Local funds	Yes	
General obligation bonds	Yes	
Special tax bonds	Yes	
Private activities/donations	Yes	

State and federal funds	Yes	
-------------------------	-----	--

Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.
 - Yes, each building has a functional PA system as well as telephones in classrooms in most of our buildings. All buses are also equipped with a functional radio system that is tied to Transportation Building and the Board of Education office.
2. Does your school buildings' have NOAA Weather Radios?
 - Yes.
3. List any past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect facilities or provide education regarding hazards that could occur.
 - Locked entry system at all buildings
 - Numerous cameras located indoors and outdoors throughout the district.
 - All buses are equipped with camera systems.
 - In the process of purchasing an ID system for students boarding buses for proper identification and accounting of their location at all times.
 - For the past 4 years we have added Active Intruder Drills (ALICE) among all of our other safety drills(tornado, fire, earthquake).
 - We have 2 SRO's who are on our campus at all times.
 - We have safety wands that we use at Hannibal Middle School and Hannibal High School for any students who arrive to school tardy.
 - We are piloting an identification system at our Hannibal Career and Technical System and Mark Twain Elementary which requires visitors to enter their driver's license which identifies if this is someone who should be in our buildings and if there are any restrictions on them.
4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.
 - We communicate and collaborate with neighboring organizations in the event that we need to evacuate our schools for some reason. We reciprocate the offer to them as well. EX. Eugene Field Elementary – St. John's Lutheran, etc.
 - A generator is located at the Board of Education office to allow as a backup for loss of electricity and preserve our district's technology system.
5. Do any of your buildings have designated tornado shelters or "safe rooms"? If so, are they constructed in accordance with FEMA standards?
 - No but we are interested in a project like this if grant monies were available to assist with costs.
6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? Please list the buildings and the improvement.
 - We replaced all windows at Hannibal Middle School and Hannibal High School.
 - We built a new Mark Twain Elementary, Early Childhood Center.
 - We added new HVAC at Hannibal Middle School and Hannibal High School.

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?
 - I do not anticipate any new buildings in the next 5 years but I do anticipate many new improvements of current facilities and grounds.
8. What percentage is your projected enrollment expected to increase or decrease in the next five years?
 - Minimal growth
9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.
 - As mentioned above, we have 2 SRO's who are housed on campus for our district. We have excellent collaboration and support from HPD, Marion Co. Sheriff's Office, Missouri Highway Patrol, etc.

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Area (sq. ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
Document listing this information is attached.						EQ, T for all district buildings

HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	Straight Line Winds
Location	Hannibal, MO (Entire school district)
Date of event	5/2013
Injuries	N/A
Deaths	N/A
Property damage	See Attached
Infrastructure damage	N/A
Crop damage	N/A
Business/economic impacts	N/A
Road/school/other closures	The 2012-2013 school year had to end early on 5/24/2013 due to the impact of this hazard.
Other damage	N/A
Insured losses	N/A
Federal/state disaster relief funding	N/A
Source of information	HPS Records
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

Multi-Jurisdictional Hazard Mitigation Plan
Data Collection Questionnaire
For Special Districts

County: Marion _____

Special District Name: Marion County Emergency Services (911) Board _____

Return by: Completed during planning meeting

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Michael D. Hall _____

Phone: 573-221-1121 _____

Email: mhall@marion911.com _____

Date: 03/31/2021 _____

Please return questionnaires by mail, email, or fax to:

Name: Michael D. Hall _____

Address: 3246 Highway 61, Hannibal MO 63401 _____

Email: mhall@marion911.com _____

Fax: 573-221-0964 _____

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Capital Improvement Plan	Date: N/A	
Emergency Operations Plan	Date:	County of Marion, City of Hannibal, City of Palmyra, City of Monroe City
Continuity of Operations Plan	Date: N/A	
Community Wildfire Protection Plan	Date: N/A	
Other:		
Policies		
-		
Programs		
Cross-Connection Program	N/A	
Hydrant Flushing Program	N/A	
Public Education/Awareness	N/A	
Tree Trimming Program	N/A	
Mutual Aid Agreements	N/A	
Other:		

Element	Yes, No, N/A	Comments and/or Weblink
Studies/Reports/Maps		
Evacuation Route Map		County of Marion
Critical Facilities Inventory		County of Marion, LEPA, City of Hannibal, City of Palmyra, City of Monroe City
Staff/Department		Full Time or Part Time?
Financial Resources		Is your jurisdiction able to? Yes or No
Fund projects thru Capital Improvements funding		Yes
Fees for water, sewer, gas, or electric services		No
Incur debt through general obligation bonds		Yes
Incur debt through special tax bonds		Yes
Incur debt through private activities		Yes
Withhold spending in hazard prone areas		N/A

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Capital Improvement Plan	No CIP exists for our jurisdiction
Emergency Operations Plan	No jurisdiction specific EOP exists at the present time.
Continuity of Operations Plan	COP is in the planning stages, after COVID-19 pandemic impacts.
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	N/A

Additional Questions

1. How is your Special District structure organized? (Board of Directors, Commission, how many members)

Elected board of directors. 7 members.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

911 education at public events, safety fairs, schools. Support other public and private industry safety fairs.

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

N/A

4. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

Previous members: Michael D. Hall.

I cannot say for certain that we participated in the last plan. I do not recall any follow up meetings or invitations to meetings. I do not recall receiving a copy of the completed plan. After reviewing the plan on the internet, it appears most things that may have had a 911 component were determined to not be mitigation or planning type of projects or issues.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Fire station
Emergency Operations
Centers

High Potential Loss Facilities

Power plants
Dams/levees
Hazardous material sites
Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and
pipelines
Oil facilities and pipelines
Communications facilities

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	Marion County Emergency Services
Type of event	Severe weather damage
Nature and magnitude of event	Lightning strike damaged to electronics
Location	Hannibal 911 Center
Date of event	2018
Injuries	N/A
Deaths	N/A
Property damage	Electronic and radio equipment
Infrastructure damage	N/A
Crop damage	N/A
Business/economic impacts	N/A
Road/school/other closures	N/A
Other damage	N/A
Insured losses	\$50,000
Federal/state disaster relief funding	N/A
Source of information	Mike Hall
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	Marion County Emergency Services
Type of event	Global Pandemic (COVID-19)
Nature and magnitude of event	On going
Location	World wide
Date of event	March 2020 through Present
Injuries	N/A
Deaths	N/A
Property damage	N/A
Infrastructure damage	N/A
Crop damage	N/A
Business/economic impacts	Mitigation, response personnel expenses
Road/school/other closures	N/A
Other damage	N/A
Insured losses	N/A
Federal/state disaster relief funding	County CARES reimbursements
Source of information	Mike Hall
Comments	Complete scope and impacts unknown at this time.

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: _____

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

- The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:
- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
 - Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
 - If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For Special Districts

County: Marion

Special District Name: Marion Co. Drainage Dist.

Return by: Completed during planning meeting

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process will not be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Randall E. Kloche

Phone: 573.406.2461

Email: klocheinc@klocheinc.com

Date: 3/31/2021

Please return questionnaires by mail, email, or fax to:

Name: Devyn Campbell

Address: 42494 Delaware Lane Perry, MO 63462

Email: dcampbell@marionwaincog.com

Fax: _____

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Capital Improvement Plan	Date: N/A	
Emergency Operations Plan	Date: N/A	
Continuity of Operations Plan	Date: N/A	
Community Wildfire Protection Plan	Date: N/A	
Other: Operations and Maintenance Manual	May, 1996	
Policies		
Programs		
Cross-Connection Program	N/A	
Hydrant Flushing Program	N/A	
Public Education/Awareness	N/A	
Tree Trimming Program	N/A	
Mutual Aid Agreements	N/A	
Other:		

Element	Yes, No, N/A	Comments and/or Weblink
Studies/Reports/Maps		
Evacuation Route Map	N/A	
Critical Facilities Inventory	N/A	
Staff/Department		Full Time or Part Time?
Catie Doyle	Secretary	Part Time
Ernest Boulware	Treasurer	Part Time
Ralph B.	Pump Operator	Part Time
Financial Resources		Is your jurisdiction able to? Yes or No
Fund projects thru Capital Improvements funding		No
Fees for water, sewer, gas, or electric services		No
Incur debt through general obligation bonds		Yes
Incur debt through special tax bonds		Yes
Incur debt through private activities		No
Withhold spending in hazard prone areas		No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Capital Improvement Plan	N/A
Emergency Operations Plan	N/A
Continuity of Operations Plan	N/A
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	N/A

Additional Questions

1. How is your Special District structure organized? (Board of Directors, Commission, how many members)

The District is organized pursuant to Chapter 244 RSMo. The District has a Board of Supervisors with five (5) members who serve five (5) years. Each year one supervisor is selected in an Annual Meeting by landowner vote. The officers of the District are the President who is selected from the Board via a board vote and a Secretary Treasurer.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

The District holds monthly board meetings and an annual landowner meeting where the status of the Districts flood protection infrastructure and the potential flood risk are discussed.

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

Since the 2019 Flood Event Several Flood Damage repair/ Flood Mitigation projects have been completed/ are ongoing. These include levee debris removal, levee breach area repairs, pump station repairs, and ditch cleanout work. Future projects include replacement of Districts five (5) relief wells, and a 1,410 foot long levee improvement on the Districts NW end.

4. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

N/A

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Fire station
Emergency Operations
Centers

High Potential Loss Facilities

Power plants
Dams/levees
Hazardous material sites
Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and
pipelines
Oil facilities and pipelines
Communications facilities

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, hazardous materials sites, main government buildings (Do not include schools—they will be reported by the school districts)						
District Levee System		N/A	N/A	N/A	N/A	N/A
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
Burlington Northern Railroad		N/A	N/A	N/A	N/A	N/A
Ameren Transmission Lines		N/A	N/A	N/A	N/A	N/A

*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	Marion County/ Marion County Drainage District
Type of event	Flood
Nature and magnitude of event	Major Flooding, Second Highest on Record
Location	39.8590, -91.4535
Date of event	4/29/2019 - 7/5/2019
Injuries	None
Deaths	None
Property damage	Yes
Infrastructure damage	Yes
Crop damage	Yes
Business/economic impacts	Yes
Road/school/other closures	Yes
Other damage	N/A
Insured losses	N/A
Federal/state disaster relief funding	The District received FEMA PA funding
Source of information	N/A
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: Marion County Drainage District (Special District)

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep - ✓ Delete - X Modify - M
		Complete	Ongoing	No Progress		
	No Previous Actions					

Multi-Jurisdictional Hazard Mitigation Plan
Data Collection Questionnaire
For Special Districts

County: Marion

Special District Name: Eabius River Drainage District

Return by: Completed during planning meeting

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: David Human, Jr., District Attorney

Phone: 314-458-8384

Email: david.humanJR@huschblackwell.com

Date: 4-6-2021

Please return questionnaires by mail, email, or fax to:

Name: Devyn Campbell

Address: 4249A Delaware Lane Perry, MO 63102

Email: dcampbell@mariontwpaincog.com

Fax:

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Capital Improvement Plan	Date:	NA
Emergency Operations Plan	Date:	NA
Continuity of Operations Plan	Date:	NA
Community Wildfire Protection Plan	Date:	NA
Other:		
Policies		
Programs		
Cross-Connection Program		NA
Hydrant Flushing Program		NA
Public Education/Awareness		NA
Tree Trimming Program		NA
Mutual Aid Agreements		NA
Other:		NA

Element	Yes, No, N/A	Comments and/or Weblink
Studies/Reports/Maps		
Evacuation Route Map		NA
Critical Facilities Inventory		NA
Staff/Department	Full Time or Part Time?	
Roger Sutter		President
Financial Resources		Is your jurisdiction able to? Yes or No
Fund projects thru Capital Improvements funding		No.
Fees for water, sewer, gas, or electric services		The District levies special assessments for flood protection services.
Incur debt through general obligation bonds		Yes
Incur debt through special tax bonds		Yes. The District may issue tax warrants.
Incur debt through private activities		No
Withhold spending in hazard prone areas		No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Capital Improvement Plan	The District will pursue incorporating a Capital Improvement Plan.
Emergency Operations Plan	The District will pursue incorporating a Emergency Operations Plan.
Continuity of Operations Plan	The District will pursue incorporating a Continuity of Operations Plan.
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	To the extent applicable, he District will pursue incorporating such a plan

Additional Questions

1. How is your Special District structure organized? (Board of Directors, Commission, how many members)

The District is organized pursuant to Chapter 244 RSMo. The District has a Board of Supervisors with five members who serve five year terms. Each year one supervisor is selected in an Annual Meeting by Landowner Vote. The officers of the District are a President who selected from the Board via a Board vote and a Secretary Treasurer.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

The District holds bi-monthly Board meetings and an annual landowner meeting where the status of the District's flood protection and potential flood risks are discussed.

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

4. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

Not Applicable.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Fire station
Emergency Operations
Centers

High Potential Loss Facilities

Power plants
Dams/levees
Hazardous material sites
Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and
pipelines
Oil facilities and pipelines
Communications facilities

Name of Asset	Address	Area (sq. ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss: Facilities such as power plants, dams/levees, hazardous materials sites, main government buildings (Do not include schools—they will be reported by the school districts)						
Fabius River Drainage District Levee	NA	17 Miles				LF
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
US Route 24, US Route 61						
Burlington Norther Railroad						

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	Fabius River Drainage District
Type of event	Flood
Nature and magnitude of event	
Location	Severe scouring along Durgan's Creek
Date of event	4/29/2019 through 7/5/2019
Injuries	
Deaths	
Property damage	
Infrastructure damage	Significant Scouring of Levee
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	The District received FEMA PA funding.
Source of information	
Comments	In June of 2019 a breach of the levee of an adjacent District caused severe scouring which was mitigated with \$225,333.65 of emergency flood fighting expenses to construct emergency rip rap stabilization. During the flood event the District Pumps operated for more than 2,600 hours.

Multi-Jurisdictional Hazard Mitigation Plan
Data Collection Questionnaire
For Special Districts

County: Marion

Special District Name: SOUTH RIVER DRAINAGE DISTRICT

Return by: Completed during planning meeting

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: TODD REICHERT

Phone: 573-221-2247 EXT 239

Email: treichert@bleigh.com

Date: _____

Please return questionnaires by mail, email, or fax to:

Name: DEVYN CAMPBELL

Address: 42494 DELEWARE LANE, PERRY MO 63462

Email: Campbell,devyn@outlook.com

Fax: _____

CAPABILITY ASSESSMENT & INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Capital Improvement Plan	Date: <i>NA</i>	
Emergency Operations Plan	Date: <i>YES 2015</i>	
Continuity of Operations Plan	Date: <i>NA</i>	
Community Wildfire Protection Plan	Date: <i>NA</i>	
Other:		
Policies		
Programs		
Cross-Connection Program	<i>NA</i>	
Hydrant Flushing Program	<i>NA</i>	
Public Education/Awareness	<i>NA</i>	
Tree Trimming Program	<i>NA</i>	
Mutual Aid Agreements	<i>NA</i>	
Other:		

Element	Yes, No, N/A	Comments and/or Weblink
Studies/Reports/Maps		
Evacuation Route Map	NA	
Critical Facilities Inventory	YES	
Staff/Department		Full Time or Part Time?
Financial Resources		Is your jurisdiction able to? Yes or No
Fund projects thru Capital Improvements funding		NO
Fees for water, sewer, gas, or electric services		NO
Incur debt through general obligation bonds		NO
Incur debt through special tax bonds		NO
Incur debt through private activities		YES
Withhold spending in hazard prone areas		NO

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Capital Improvement Plan	NA
Emergency Operations Plan	ADOPT CHANGES AS REQUIRED
Continuity of Operations Plan	NA
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	NA

Additional Questions

1. How is your Special District structure organized? (Board of Directors, Commission, how many members)

BOARD OF DIRECTORS
6 MEMBERS
5 ELECTED WITH VOTING RIGHTS
1 APPOINTED WITH NO VOTING RIGHTS

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

NA

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

EMERGENCY FLOOD PROTECTION PLAN

4. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

BOARD OF DIRECTORS DEVELOPED. MET AS NEEDED.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - RF	Drought - D
Levee Failure - LF	Extreme Temperature - ET
Dam Failure - DF	Severe Thunderstorm (incl. winds, hail, lightning) - ST
Earthquake - EQ	Severe Winter Weather (incl. snow, ice, severe cold) - SWW
Land Subsidence / Sinkholes - LSS	Tornadoes - T
Drought - D	Wildfire - WF

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Fire station
Emergency Operations
Centers

High Potential Loss Facilities

Power plants
Dams/levees
Hazardous material sites
Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and pipelines
Oil facilities and pipelines
Communications facilities

Name of Asset	Address	Area (sq. ft.)	Replacement Value (Insured) (\$)	Contents Value (\$)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, hazardous materials sites, main government buildings (Do not include schools—they will be reported by the school districts)						
STDD LEVEES			20,000,000			RFLF, EB, ST, T
BAS Water Plant			1,600,000			"
BAS Pump Plant			1,500,000			"
BAS Building			900,000,000			"
BAS Agricultural Products			100,000,000			"
BAS Chemicals			100,000,000			"
MFA Plant Food			75,000,000			"
C.F. Industries			50,000,000			"
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
BNSF RAIL LINE			9,000,000	9,000,000		RFLF, EB, ST, T
HWY 168			5,000,000			"
County Road 413			2,000,000	2,000,000		"
County Road 408			600,000	600,000		"
County Road 411			500,000	500,000		"
County Road B			400,000	400,000		"
HWY JJ			600,000	600,000		"

*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. **Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	SOUTH RIVER DRAINAGE DIST
Type of event	FLOOD
Nature and magnitude of event	MAJOR FLOODING BY MISSISSIPPI RIVER
Location	MARION Co MO
Date of event	2013
Injuries	
Deaths	
Property damage	UNKNOWN
Infrastructure damage	"
Crop damage	"
Business/economic impacts	"
Road/school/other closures	"
Other damage	"
Insured losses	"
Federal/state disaster relief funding	NA
Source of information	HISTORICAL DOCUMENTS
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected Your Jurisdiction. Make as many copies as necessary to record all events and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	SOUTH RIVER DRAINAGE DISTRICT
Type of event	FLOOD
Nature and magnitude of event	MAJOR FLOODING BY MISSISSIPPI RIVER
Location	MARION CO MO
Date of event	2015
Injuries	NONE
Deaths	NONE
Property damage	UNKNOWN
Infrastructure damage	120,022
Crop damage	UNKNOWN
Business/economic impacts	UNKNOWN
Road/school/other closures	UNKNOWN
Other damage	UNKNOWN
Insured losses	
Federal/state disaster relief funding	102,019.04
Source of information	HISTORICAL DOCUMENTS
Comments	



FEMA

Subgrantee Closure Worksheet

Due to limitations imposed by rules protecting Personally Identifiable Information (PII), some data may be restricted and show as "#ERROR" or "#SYNTAX." Please contact your Data Steward for rights clarification.

For Official Use Only *

* WARNING: The data in this document is "For Official Use Only" (FOUO). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO information and it is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior written approval of an authorized DHS Official.

Missouri

PA ID#: 127-UA4U9-00

Disaster: 4238

Subgrantee Name: SOUTH RIVER DRAINAGE DISTRICT

Subgrantee Status: Closed 03/26/2019

Subgrantee Information

Applicant Eligibility	ELIGIBLE
RPA Entry Date	08/26/2015
Federal Share Requested	\$90,016.80
Total Eligible	\$120,022.40
Total Non-Federal Share	\$30,005.60

Project Worksheet Information

Number Of PWs Entered	2
Number Of PWs Obligated	1
Number Of Large PWs	0
Number Of Large PWs Closed	0
Number Of Small PWs	2
Number Of Small PWs Closed	2

Project Worksheet Details

Project Size	PW Number	Version Number	Version Project Size	Final Inspection Date	Project Amount	Damage Category Code	Project Status
Small	78	0	Small		\$0.00	A - Debris Removal	Closed
	113	0	Small		\$120,022.40	B - Protective Measures	Closed

Received
MAY 01 2019
SEMA-PA

HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction**. Make as many copies as necessary to record all events and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	SOUTH RIVER DRAINAGE DISTRICT
Type of event	FLOOD
Nature and magnitude of event	MAJOR FLOODING BY MISSISSIPPI RIVER
Location	MARION CO MO
Date of event	2019
Injuries	NONE
Deaths	NONE
Property damage	UNKNOWN
Infrastructure damage	317,000
Crop damage	181,000
Business/economic impacts	UNKNOWN
Road/school/other closures	UNKNOWN
Other damage	915,473
Insured losses	NA
Federal/state disaster relief funding	84728
Source of information	HISTORICAL DOCUMENTS
Comments	OTHER COSTS ARE THE EXPENSE TO PREVENT FLOODING BY WORKING ON LEVEE TO KEEP IT FROM FAILING

9. Are there any other environmental or controversial issues associated with the damaged facility and/or item of work? No

Attachments

Mitigation section is not applicable for your project category.

Cost Estimate

Is this Project Worksheet for

(Preferred) Repair									
Sequence	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Type	Cost Estimate	Action
*** Version 0 ***									
Work Completed									
1	9001	Contract	1	LS	\$ 112,970.40	CONTRACTUAL	Work Completed	\$ 112,970.40	
2	9008	Equipment	1	LS	\$ 766,976.84	EQUIPMENT	Work Completed	\$ 766,976.84	
3	9009	Material	1	LS	\$ 35,525.92	SUPPLIES	Work Completed	\$ 35,525.92	
4	9001	Contract	1	LS	-\$ 766,976.84	CONTRACTUAL	Work Completed	-\$ 766,976.84	
5	9009	Material	1	LS	-\$ 35,525.92	SUPPLIES	Work Completed	-\$ 35,525.92	
Total Cost :								\$ 112,970.40	

Insurance Adjustments (Deductibles, Proceeds and Settlements) - 5900/5901									
Sequence	Code	Material and/or Description	Unit Quantity	Unit of Measure	Unit Price	Subgrant Budget Class	Type	Cost Estimate	Action
Total Cost :								\$ 0.00	

Total Cost Estimate: (Preferred Estimate Type + Insurance Adjustments) **\$ 112,970.40**

Comments

Attachments

Existing Insurance Information

Insurance Type	Policy No.	Bldg/Property Amount	Content Amount	Insurance Amount	Deductible Amount	Years Required	Facility (Site) No.
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Comments

**PROJECT INFORMATION REPORT
PL 84-99 REHABILITATION OF DAMAGED
FLOOD CONTROL WORKS**

**SOUTH RIVER DRAINAGE DISTRICT
FLOOD RISK MANAGEMENT PROJECT
MARION COUNTY, MISSOURI**

MISSISSIPPI RIVER

November 2019



**US Army Corps
of Engineers** ®
Rock Island District

*Project Information Report
PL 84-99 Rehabilitation of Damaged
Flood Control Works
South River Drainage District
Marion County, Missouri
Mississippi River*

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PART III. APPENDICES

Appendix A	Project Sponsor's Request for Rehabilitation Assistance
Appendix B	Project Location and Design Data, Maps, and Related Information
Appendix C	Disaster Incident
Appendix D	Damages
Appendix E	Repair Alternatives and Design Calculations
Appendix F	Economics
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Appendix Z	Project Information Report Review Checklist

**PROJECT INFORMATION REPORT
PL 84-99 REHABILITATION OF DAMAGED
FLOOD CONTROL WORKS**

**SOUTH RIVER DRAINAGE DISTRICT
FLOOD RISK MANAGEMENT PROJECT
MARION COUNTY, MISSOURI
MISSISSIPPI RIVER**

November 2019

PART I. EXECUTIVE SUMMARY

The South River Drainage District sustained damage as a result of the March 2019 flood event. The river was above flood stage at the Mississippi River at Lock and Dam 22 gage at River Mile (RM) 301.2 from 16 March to 14 July and initially crested on 1 April 2019 at 24.77 feet (elevation 470.87 feet MSL1912), then again on 3 May 2019 at 26.80 feet (elevation 472.90 feet MSL1912) and finally on 2 June 2019 at 28.47 feet (elevation 474.57 feet MSL1912). Flood stage is 16.0 feet (elevation 462.10 feet MSL1912).

The South River Drainage District Flood Risk Management Project (Project) is located in Marion County, Missouri, along the right descending banks of the Mississippi and South Rivers and is bordered on the south by Clear Creek, between approximate RM 312 and 321. The Project is in a rural and agricultural setting.

High water and high velocities resulted in damages on the riverside slope from Station (Sta.) 571+68 to 575+82. Design slope is 4H:1V, but the riverside slope was observed at about 2H:1V or steeper in the damaged area. The scour is 422ft long, 23.3ft wide on average, and 3.6ft deep on average. An estimated 1442 CY of sand was eroded from the levee slope and deposited at about Sta. 576+40. The scour is compromising the level of protection and integrity of the levee. If corrective action is not taken, high flows will continue to impact land owners and agricultural land. See Appendix D for photographs of the damage.

Repairs to the Project would consist of replacing the lost levee section with the material that eroded and is currently onsite, requiring pushing that sand back onto the levee. All repair work will maintain the original alignment of the levee and will not exceed the design levee template, avoiding floodplain impacts.

The Sponsor requested rehabilitation assistance on 2 August 2019. The South River Drainage District levees are eligible for Federal assistance to repair damages under PL 84-99. The total Project cost using the proposed repair is approximately \$317,000. The benefit-to-cost ratio for the repair is 15.5:1.

The repair classification for this Project is Class 3, Priority.

*Project Information Report
South River Drainage District
Marion County, Missouri*

PART II. BASIC REPORT

1. Project Identification

- a. Project Name: South River Drainage District
- b. Funding Classification: 310
- c. CWIS: 072466

2. Project Authority

- a. Classification: Federal
- b. Authority: Flood Control Act of 1954, substantially in accordance with the recommendations of the Chief of Engineers in House document No. 281, Eighty-third Congress, 2nd session.
- c. Estimated Original Cost of Project: Unknown
- d. Construction Completion Date of Original Project: 1960

History of Modifications/Improvements/Betterments: In the 1960's, the levee system was improved under the Flood Control Act of 1954. Stage I included the raising of the mainstem and lower flank levees, installation of one new discharge pipe, and installation of three new flap gates at the existing locally constructed pump station. Stage II consisted of raising the South River flank levee. Construction was initiated in 1963 and was completed in 1966. The Missouri Department of Conservation added an access point for Fabius Island that required a levee crossing. This is the roadway crossing at station 59+07.

In 2008, the Project sustained damages between Sta. 656+00 and 659+00 from substantial sloughing on its landward slope due to seepage during the flooding event. The U.S. Army Corps of Engineers (USACE) repaired the Project under the PL84-99 authority, which consisted of removing the top five feet of the landward slope, discarding the material, and using clean sand to rebuild the levee cross-section.

3. Public Sponsor

- a. Sponsor Identification

South River Drainage District
Mr. David Bleigh
President
PO Box 957
Hannibal, MO 63401

- b. Application for Assistance

1) Date of Issuance of District's Public Notice: 20 June 2019

*Project Information Report
South River Drainage District
Marion County, Missouri*

2) Date of Public Sponsor's Written Request: 2 August 2019

4. Project Location and Description

a. Location: The Project is located in and around the South River Drainage District, along the right descending banks of the Mississippi and South Rivers and bordered on the south by Clear Creek, in Marion County, Missouri between RM 312 and 321. See Appendix B, Tab 1 for project location maps.

b. General Description: The Project consists of a Mississippi River mainstem levee, an upstream flank levee adjacent to the South River, a downstream flank levee, drainage structures, and a pump station.

5. Project Design

The Project is an agricultural system consisting of levees, drainage structures, and a pump station. The Project was designed to provide protection to 10,300 acres of agricultural land against high water levels on the Mississippi and South Rivers. The project was designed to protect against a 2% annual chance exceedance flood event, at the time of construction, with 2 feet of freeboard. The average crown width of the main stem levee is 10 feet and the riverside slopes are 4H:1V and landside slopes are 5H:1V.

6. Disaster Incident

The Project sustained damage as a result of the Spring 2019 flood event. The river was above flood stage at the Mississippi River at Lock and Dam 22 gage at River Mile (RM) 301.2 from 16 March to 14 July and initially crested on 1 April 2019 at 24.77 feet (elevation 470.87 feet MSL1912), then again on 3 May 2019 at 26.80 feet (elevation 472.90 feet MSL1912) and finally on 2 June 2019 at 28.47 feet (elevation 474.57 feet MSL1912). Flood stage is 16.0 feet (elevation 462.10 feet MSL1912). Public notice to levee owners to inspect for flood damages was issued 20 June 2019. The levee district observed damages during the flood event and submitted their formal request for assistance on August 2, 2019. The Emergency Operations Center was activated for this event on 13 March 2019. More information, including River Gage data can be found in Appendix C.

7. Project Damages

At the Project site with the current damages, the system now protects against a 10% annual chance exceedance flood event with no freeboard based on the 2004 Upper Mississippi River System Flow Frequency Study (UMRSFFS).

During the flood event, high water and high velocities resulted in damages on the riverside slope from Sta. 571+68 to 575+82. Design slope is 4H:1V, but the riverside slope was observed at about 2H:1V or steeper in the damaged area. The scour is 422ft long, 23.3ft wide on average, and 3.6ft deep on average. An estimated 1442CY of sand was eroded from the levee slope and deposited at about Sta. 576+40.. The scour is compromising the level of protection and integrity of the levee. If corrective action is not taken, high flows will continue to impact land owners and 10,300 acres of agricultural land. See Appendix D for photographs of the damage.

*Project Information Report
South River Drainage District
Marion County, Missouri*

8. Project Performance Data

a. Inspection Results:

- 1) Date of last inspection: 9 November 2017
- 2) Type of last inspection: Continued Eligibility Inspection
- 3) Project Condition Code of last inspection: M – Minimally Acceptable
- 4) Sponsor's Annual O&M Cost: Unknown

b. Estimated cost to repair maintenance deficiencies: None addressed with this proposed rehabilitation.

9. Project Repair Alternatives Considered

a. No Action: This alternative consists of no federal assistance being provided for emergency repairs under PL84-99 authority or funding sources. In the absence of federal assistance, it is assumed that the Sponsor would likely initiate repairs as local funding allows. However, implemented repairs may not be to USACE standards or be completed in a timely manner. The No Action alternative is not acceptable to the Sponsor. In its current condition, the District may sustain further damages beginning at a 10% annual chance exceedance flood event. Damages could include flooding which would prevent land use and severe economic hardship would result to the owners of these lands and agricultural activities.

b. Non-Structural Alternatives: This alternative consists of non-structural strategies generally involving change in land use offered by other federal and state programs. Such strategies would include: (a) Acquisition, relocation, elevation, and flood proofing existing structures; (b) rural land easements and acquisitions; and (c) restoration of wetland. The sponsor has been informed of their options to pursue a Non-Structural Alternative Project and they have considered this option. The Non-structural Flood Recovery/Floodplain Management alternative is not acceptable to the Sponsor as the design protection to agricultural areas protected by the levee is desired.

c. Structural Alternatives: This alternative consists of structural plans to protect the South River Drainage District and its levee system from further damage. This generally consists of repairs to levee system.

Levee Re-Establishment: At the scoured locations between Sta. 571+68 and Sta. 575+82, sand fill would be used to re-establish the levee profile to pre-flood conditions. Displaced sand on-site will be used (if determined suitable) for the repair. An appropriate borrow site will be identified if the material is determined to be unsuitable. The borrow site will be either an adjacent DMMP site or hydraulically dredged material from a historic dredge cut. All repair work will maintain the original alignment of the levee and will not exceed the design levee template.

10. Recommended Alternative

The structural repair of the damaged levee consisting of sand fill is the recommended alternative. The proposed repair work will include repairs necessary to protect the levee system from further damage by restoring it to pre-flood conditions by placing sand in the scour location. Further design information of the recommended alternative can be found in Appendix E.

*Project Information Report
South River Drainage District
Marion County, Missouri*

It is recommended that this Project be repaired under PL84-99 as described in this document.

Funds in the amount of \$317,000 should be provided for the total Project cost. The final design will be completed with contract award scheduled to ensure repairs are completed by the end of 2020 construction season.

11. Economic Justification

- a. **Economic Analysis Scope.** The South River Drainage District levee system, located in Marion County in Missouri along the Mississippi River, was damaged by the 2019 high water event. Action is needed to repair the levee damage to prevent future flooding of the 8,886 productive acres of cropland protected by the levee. If the levee is not repaired, the cropland could be flooded at an approximate 10 percent annual chance exceedance (ACE) event. The repair project will provide a 2 percent ACE event protection. The current Federal discount rate of 2-3/4 percent was used to amortize costs. As required under EP 500-1-1, the period of analysis is 50 years (Federal levee). Annual damages, benefits, and costs are summarized in Table 1.

Table 1: Annual Damages, Costs, and Benefit-to-Cost Action

Annual Damages Without Project	\$250,000
Annual Damages With Project	\$69,000
Total Annual Damages Prevented (Benefits)	\$181,000
Crop Damage Reduction	\$181,000
Structural Damage Reduction	(-)
Total Project Cost Estimate	\$317,000
Annualized at 2-3/4%. 50-Year Period	\$12,000
Benefit-to-Cost Ratio	15.5

- b. **Benefits.** Benefits for repairing the levee were derived by comparing the average annual damages with and without the repair project. The levee protects 8,886 acres of agricultural production land. The cropland is planted approximately 51 percent corn and 49 percent soybeans.
 - 1) **Methodology.** The undamaged levee provides a 2 percent frequency design level of protection. The damaged levee provides a 10 percent ACE event level of protection. The floodplain is primarily flat. Damage reduction benefits accrue to cash crops (corn and soybeans). Detailed farm budget analysis and elevation-acreage data were employed for this critical benefit category. Table 2 displays project elevation, flood-frequency, acres inundated, categorical damages, and average annual damage calculations for the without-project and the with-project conditions. Table 3 displays the monthly crop budget analysis for corn and soybeans. This analysis (yielding an annual per acre flood-induced change in income) includes estimates for variable production expenditures, flood-stage exceedance probability, and metrics for replanting and reduced yield assumptions.
 - 2) **Distribution of Benefits.** There are many beneficiaries of this protection system repair project. No one beneficiary receives more than 25 percent of the project benefits.

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- 3) **Total Value of Property.** In accordance with EP 500-1-1 and to ensure the applicability and reasonableness of the project (land value exceeds repair costs), the total value of the property protected was determined:

Total Acreage	(8,886 acres x \$4,476*)	\$39,772,032
Total Project Cost Estimate		\$317,000

*Reference: Crop land value based on UM Extension 2018 Land Value Survey (assumes average class crop land in northeastern Missouri)

- 4) **Benefits Less Than 5 percent of Cropland Value.** As shown, the benefit per acre is less than the 5 percent maximum allowed.

Crop	Land Value	x 5%	Benefit/Acre
Corn	\$4,476	\$224	\$23
Soybeans	\$4,476	\$224	\$18

- 5) **Net Cash Income.** As shown, the net cash income per acre exceeds the benefit per acre for both crops.

Crop	Net Cash Income/Acre *	Benefit/Acre
Corn	\$154	\$23
Soybeans	\$176	\$18

*Estimated based on typical production costs and current cash prices for the specific crop and region.

- c. **Cost Data.** First cost of the project is computed as follows:

Total Project Cost	\$317,000
---------------------------	-----------

The annual charge for interest and amortization shown below is based on the estimated first cost of the repair project, a 50-year evaluation period, and a discount rate of 2-3/4 percent.

Annual Costs (2-3/4 Percent Discount Rate)	
Total Annual Costs	\$12,000

- d. **Analysis Summary.** Annual maintenance cost for this portion of the levee is accounted for under the annual maintenance costs for the entire levee system (project). Total annual benefits, total annual costs and the benefit-to-cost ratio are shown below.

Average Annual Benefits	\$ 181,000
Average Annual Costs	\$ 12,000
Benefit-to-Cost Ratio	15.5: 1.0

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**Table 2
Stage-Frequency-Damage and Average Annual Damage Data**

Project: South River Drainage District
 Conditions: Without Project Full Detail Method
 Price Levels: 2019

Probability of Exceedence	Elev.	Crop					Damages		Total Damages	TOTAL AVG ANN DAMAGE
		Acreage	Corn	Soybeans	Detour	Infrastructure				
0.500	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.200	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.100	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.100	457.2	6	\$1,352.03	\$1,053.93	\$0.00	\$0.00	\$0.00	\$2,405.96	\$108,521.44	
0.040	477.0	8,853	\$2,082,793.62	\$1,538,214.59	\$0.00	\$0.00	\$0.00	\$3,621,008.21	\$72,436.47	
0.020	477.9	8,857	\$2,083,709.94	\$1,538,928.87	\$0.00	\$0.00	\$0.00	\$3,622,638.81	\$36,240.91	
0.010	479.4	8,864	\$2,085,542.58	\$1,540,000.30	\$0.00	\$0.00	\$0.00	\$3,625,542.88	\$18,134.97	
0.005	480.8	8,871	\$2,087,375.21	\$1,541,071.73	\$0.00	\$0.00	\$0.00	\$3,628,446.95	\$10,895.04	
0.002	482.6	8,886	\$2,092,414.97	\$1,542,500.30	\$0.00	\$0.00	\$0.00	\$3,634,915.27	\$3,634.92	
AVERAGE ANNUAL DAMAGES =			\$143,832.42	\$106,031.33					\$249,864	

Conditions: With Project Full Detail Method
 Price Levels: 2019

Probability of Exceedence	Elev.	Crop					Damages		Total Damages	TOTAL AVG ANN DAMAGE
		Acreage	Corn	Soybeans	Detour	Infrastructure				
0.500	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.200	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.100	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.040	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.020	457.1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
0.020	477.9	8,857	\$2,083,709.94	\$1,538,928.87	\$0.00	\$0.00	\$0.00	\$3,622,638.81	\$36,226.41	
0.010	479.4	8,864	\$2,085,542.58	\$1,540,000.30	\$0.00	\$0.00	\$0.00	\$3,625,542.88	\$18,134.97	
0.005	480.8	8,871	\$2,087,375.21	\$1,541,071.73	\$0.00	\$0.00	\$0.00	\$3,628,446.95	\$10,890.13	
0.002	482.6	8,878	\$2,090,531.18	\$1,541,111.60	\$0.00	\$0.00	\$0.00	\$3,631,642.79	\$3,631.64	
AVERAGE ANNUAL DAMAGES =			\$39,652.14	\$29,231.03					\$68,883	
AVERAGE ANNUAL BENEFITS =			\$104,180	\$76,800					\$180,981	
BENEFITS PER ACRE =			\$22.81	\$17.78						

Notes:
 Flood frequency, elevation, crop acreage data provided by H&H

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Table 3
Typical Crop Production Budgets
Analysis of Monthly Flood Risks and Production Assumptions

<u>Com Crop</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Variable Costs %	0%	0%	2%	18%	57%	9%	5%	3%	6%	2%	0%	0%	100%
Variable Costs \$	0	0	8	56	199	31	16	11	21	8	0	0	\$350
Expended	0	0	8	64	263	294	311	321	342	350	350	350	
Unexpended	350	350	342	286	87	55	39	28	7	0	0	0	
Gross Cash Yield (1)	-	-	-	526	526	526	526	526	394.8	105	-	-	
Crop Loss:				(3)	(4)	(5)							
Expended for replanting				19	156	271							
Expected reduced yield				0	79	237							
Total replant/reduction				19	235	508							
Total Crop Loss	0	0	0	19	235	508	487	498	387	106	0	0	
Flood Stage Probability (2)	5%	5%	25%	46%	43%	34%	23%	4%	10%	5%	3%	3%	
Monthly Damage p/acre	\$0	\$0	\$0	\$9	\$101	\$173	\$112	\$20	\$39	\$5	\$0	\$0	
Annual Damage Per Acre													\$458
<u>Soybean Crop</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Total</u>
Variable Costs %	0%	0%	2%	12%	60%	10%	5%	3%	6%	2%	0%	0%	100%
Variable Costs \$	0	0	5	25	126	21	10	7	13	5	0	0	\$211
Expended	0	0	5	30	156	177	187	194	206	211	211	211	
Unexpended	211	211	206	181	54	33	24	17	4	0	0	0	
Gross Cash Yield (1)	-	-	-	466	466	466	466	466	349.3125	93	-	-	
Crop Loss:				(3)	(4)	(5)							
Expended for replanting				8	88	162							
Expected reduced yield				0	70	210							
Total replant/reduction				8	158	372							
Total Crop Loss	0	0	0	8	158	372	442	449	345	93	0	0	
Flood Stage Probability (2)	5%	5%	25%	46%	43%	34%	23%	4%	10%	5%	3%	3%	
Monthly Damage p/acre	\$0	\$0	\$0	\$4	\$68	\$126	\$102	\$18	\$34	\$5	\$0	\$0	
Annual Damage Per Acre													\$357

Notes:

- (1) Gross cash yield = normalized prices X yield
- (2) Flood Stage Probability is the monthly probability of stage equating or exceeding the 2-yr flood stage.
- (3) 1/3 April variable costs.
- (4) 1/2 May + April variable costs; yield reduced by 15%.
- (5) 1/2 June + May + April variable costs; yield reduced by 45%.
- (6) Variable production costs taken from "UM Extension Crop Planning Budgets for 2019"

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12. Environmental Considerations

- a. No significant impacts to the quality of the human environment are expected from the proposed repair activities. No change in existing (pre-flood) land use would result from the repairs. The project would not adversely affect the floodplain or floodplain values.
- b. Coordination with the appropriate Federal and State resource agencies will be initiated prior to construction to ensure that the proposed work will be in compliance with the provisions of applicable environmental statutes, such as the Endangered Species Act and the Fish and Wildlife Coordination Act. Coordination with these agencies has not yet been completed. Coordination will be accomplished prior to initiation of construction activity, and may result in modifications to proposed actions as outlined in this initial report. Following completion of coordination, a determination will be made if an Environmental Assessment (EA) is required to address the repairs. If an EA is required, it will be completed and signed by the District Engineer prior to implementation of final repairs. Biological surveys and mitigation, if required, will be accomplished prior to project construction; however, total project costs shown in this report do not include estimates for these activities, some of which could be substantial.
- c. It is anticipated that these actions will not affect any federally-listed endangered or threatened species. This determination will be coordinated with the U.S. Fish and Wildlife Service.
- d. In order to ensure compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations 36 CFR 800, all Public Law 84-99 Program projects (PL 84-99s) will be coordinated with the appropriate State Historic Preservation Office (SHPO) of either Illinois, Iowa, or Missouri. Coordination regarding the implementation of PL 84-99s will be in full accordance with the associated Programmatic Agreement (PA) between Rock Island District, the SHPOs of those three states, and the Advisory Council on Historic Preservation. Coordination with, and concurrence from, the appropriate SHPO must be initiated and obtained prior to project implementation. Additional coordination and archaeological work may be necessary if project features change during the design phase in accordance with the PA.
- e. An Environmental Site Assessment (ESA) Transaction Screening Process will be completed during Plans and Specifications for the proposed levee repair area in accordance with ASTM Practices E 1528-06 and ER 1165-2-132.
- f. The proposed repair to re-establish the design levee cross section may be covered under Nationwide Permit 3, which authorizes the repair of those structures or fills destroyed or damaged by flood events, provided the repair is under contract to commence within two years of the date of the destruction or damage. This would authorize work under both Sections 10 and 404. However, final design requirements may change this initial determination. Clean Water Act Section 404 review and other necessary permit requirements will be determined during the preparation of Plans and Specifications. All necessary permits/waivers will be obtained prior to construction.

13. Interagency Levee Task Force

An ILTF was not activated during the high water event that caused damage to the Project.

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14. Project Management

a. Funding Authority

1) Program and Appropriation: FCCE

2) Class: 310

3) CWIS Number: 072466

b. Project Funds

Cost of Field Investigation/PIR Preparation: \$35,000

The total estimated project cost for the recommended alternative to include engineering and design (E&D), construction management (S&A) and engineering during construction (EDC) is shown in Table 3.

Table 3: Total Project Cost

Description	Quantity	UOM	Unit Price	Cost
Mob/Demob	1	LS	\$70,000.00	\$70,000
Construction Surveys (Initial, Final)	3	EA	\$10,000.00	\$30,000
Sand Fill (Excavation/Placement/Compaction)	1442	CCY	\$25.00	\$36,050
Subtotal				\$136,050
Contingency (10%)				\$13,605
Total Construction Cost				\$149,655
Engineering and Design (E&D) and Engineering During Construction (EDC)				\$82,310
% Construction Cost				55.00%
Construction Management (S&A)				\$44,897
% Construction Cost				30.00%
Environmental Assessment				\$25,000
Real Estate				\$5,000
Contracting				\$10,000
Total Project Cost				\$317,000

The project team recognizes that the E&D cost exceeds the 6% construction cost limit for construction costs greater than \$100,000 set forth in *ER 500-1-1 Civil Emergency Management Program*, Chapter 5. The minimal construction cost of the recommended alternative merits higher amounts for E&D. This higher amount is directly related to 1) adherence to *EC 1165-2-217 Civil Works Review* which requires several reviews during the design process, 2) Government responsibilities, including reviews and providing on-site personnel, as outlined in *ER 1180-1-6 Construction Quality Management*, 3) travel expenses, estimated at \$6,500, for engineering and construction personnel during design and construction due to the location of the project in proximity to USACE offices and 4) cost of design surveys, estimated at \$6,600, which will require field days and travel expenses to conduct and associated data processing. Design surveys are necessary for project success as they allow for accurate quantity estimations, reduce design to construction risk, and reduces the potential for modifications to the contract.

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Project Repair Schedule. Stages of construction may be combined or renamed during plans and specifications, see Table 4.

Table 4. Project Schedule

Activity	Start	Days to Complete	Finish
Submit PIR to MVD for Approval	11/15/2019	0	11/15/2019
Approve PIR	11/15/2019	30	12/15/2019
Receive Design & Construction Funds	12/15/2019	14	12/29/2019
Plans and Specifications			
Execute Emergency CA	12/29/2019	60	2/27/2020
Complete RE Acquisition for Emergency Work	12/29/2019	120	4/27/2020
Cultural Clearance ¹	12/29/2019	60	2/27/2020
Environmental Clearance	12/29/2019	120	4/27/2020
Permits	12/29/2019	60	2/27/2020
Design	12/29/2019	90	3/28/2020
Reviews (DQCR & BCOES)	1/28/2020	45	3/13/2020
Route P&S for Signatures	3/13/2020	7	3/20/2020
Prepare Contract for Advertisement	3/20/2020	7	3/27/2020
Contract Advertisement	3/27/2020	30	4/26/2020
Contract Bid Opening	4/26/2020	1	4/27/2020
Award Contract	4/27/2020	10	5/7/2020
Notice to Proceed	5/7/2020	14	5/21/2020
Winter Exclusion	5/21/2020	0	5/21/2020
Contract Substantial Completion/Final Inspection	5/21/2020	60	7/20/2020
Contract Closeout/Project Completion	7/20/2020	120	11/17/2020
Total Number of Days			368

¹Assuming no cultural or environmental surveys are required.

c. Real Estate Requirements

A Cooperation Agreement (CA) will be entered into between the Federal Government and the Sponsor, South River Drainage District, after Project PIR approval and before construction initiation.

Pursuant to the CA, the Sponsor will:

- 1) Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform all relocations determined by the Government to be necessary for construction, operation, and maintenance of the Project. The Sponsor shall provide legal certification that all necessary rights-of-way have been obtained and will grant the United States the right to enter upon these lands for project repair purposes.

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2) Hold and save the Government free from all damages arising from the construction, operation, and maintenance of the Project and any Project-related betterments, except for damages due to the fault or negligence of the Government or the Government's contractors.

3) Participate in and comply with the policies and procedures of the USACE Rehabilitation and Inspection Program.

4) Provide legal certification that all necessary rights-of-way have been obtained and will grant the United States the right to enter upon these lands for Project repair purposes. Additional rights-of-way may be needed for the repairs outlined in this PIR and for the Sponsor's continued operation and maintenance of the system for protection purposes.

d. Review Plan/ Levee Safety

Rehabilitation projects under PL84-99 may require the following types of reviews, according to the level of complexity of the repair work. These reviews are:

1) District Quality Control Review (DQCR). A DQCR will be performed following the guidance provided in ER 1110-1-12 and supplemented by EC 1165-2-217. Review will be conducted at the 95% product completion. Review comments and resolutions will be entered into DrChecks in accordance with ER 1110-1-8159. The review will be documented by a completed (signed) statement of technical review and certification, to which all review comments and resolutions will be attached. DQCR team members will be established in the approved programmatic Quality Control Plan.

2) Bidability, Constructability, Operability, Environmental and Sustainability (BCOES) Reviews. In accordance with ER 415-1-11, the Project Engineer will conduct a BCOES review at the final design level, after all DQCR comments have been resolved and incorporated. The review documents will include a complete drawing set, complete specifications (with special clauses), and Engineering Considerations. Review comments and resolutions will be entered into DrChecks. The BCOES review will be documented by a completed (signed) BCOES certification, to which all review comments and resolutions will be attached. BCOES review team members will be assigned via a written and properly signed memorandum. Team members will be established in the approved programmatic Quality Control Plan.

3) Agency Technical Review (ATR). When appropriate, an ATR is undertaken to ensure the quality and credibility of the government's scientific information in accordance with EC 1165-2-217. Projects covered by the PL84-99 Programmatic Review Plan will not require an ATR unless PM Council determines that an ATR is necessary based on the complexity, policy changes, and/or economic consequences. PM Council is made up of district leadership that meets to discuss the execution of district projects. It has been determined that no ATR is required for this project.

4) Independent External Peer Review (IEPR). In accordance with EC 1165-2-217, an IEPR is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. Due to the nature of damages and subsequent repairs, it is recommended that an IEPR not be required for this project. Confirmation of IEPR exclusion will be validated through the IEPR exclusion memo process.

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e. Implementation Views

1) Sponsor. The Sponsor supports the selected alternative of damage repair using PL84-99 authorities.

2) Federal. USACE: The proposed alternative meets the USACE technical and policy criteria under PL84-99. See Appendix Z for completed policy and compliance checklist. The subject report complies with the Corps' Project Management Business Processes and Quality Management Program.

Project Information Report
South River Drainage District
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PROJECT AUTHENTICATION

Prepared By:



Digitally signed by
HEDDESTEN.ANTHONY.D.1364711510
Date: 2019.11.12 15:05:08 -06'00'

Tara Gambon
Project Engineer

Reviewed By:

FELLMAN.RACHEL.C.123121
9320

Digitally signed by
FELLMAN.RACHEL.C.1231219320
Date: 2019.11.12 14:27:44 -06'00'

Rachel Fellman, P.E.
Technical Manager

Engineering and Construction Approval By:



Digitally signed by ANDERSON.HEATHERL 1231214808
Date: 2019.11.14 10:49:57 -06'00'

Roger A. Perk, P.E.
Chief, Engineering and Construction Division

Emergency Management Approval By:

JONES.SARAH.B.1230349378

Digitally signed by JONES.SARAH.B.1230349378
Date: 2019.11.15 09:26:12 -06'00'

Sarah B. Jones
Chief, Emergency Management Division

Rock Island District Approval By:

Steven M. Sattinger
Colonel, US Army
Commander & District Engineer

Division Emergency Management Approval By:

Jared C. Gartman, CEMVD
Chief, Emergency Management Division

Division Approval By:

Mark R. Toy
Major General, US Army
Commander

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TECHNICAL POINTS OF CONTACT

Emergency Management:

Technical Support	Beth Crutcher	CEMVR-EM	309-794-5595
Emergency Mgmt. Approval	Sarah Jones	CEMVR-EM	309-794-5206

Economics:

Economic Analysis	Jordan Lucas	CEMVN-PDE-R	309-794-5006
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Environmental:

Biologist	Wendy Frohlich	CEMVP-PD-C	309-794-5573
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Engineering and Design:

Flood Area Engineer	Bryan Snook	CEMVR-EC-HH	309-794-5410
Technical Manager	Rachel Fellman	CEMVR-EC-DN	309-794-5475
Geotechnical Engineer	Derek Clark	CEMVR-EC-G	309-794-5717
Hydraulic Engineer	Kaileigh Scott	CEMVR-EC-HH	309-794-5318
HTRW Support	Steve Gustafson	CEMVR-EC-DN	309-794-5202

Project/Program Management:

Project Manager	Benjamin Ferrell	CEMVR-DE	309-794-5154
Program Manager	Jim Homann	CEMVR-PM-M	309-794-5704
Plan Formulation	Rachel Perrine	CEMVP-PDF	309-794-5403

Real Estate:

Real Estate Analysis	Micki Meier	CEMVR-RE-A	309-794-5882
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Office of Counsel:

Attorney	Patrick Flynn	CEMVR-OC	309-794-5215
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Executive:

DDPM Chief	Dennis Hamilton	CEMVR-DP	309-794-5260
District Engineer	Col Steven Sattinger	CEMVR-DE	309-794-5224

SPONSOR POINTS OF CONTACT

South River Drainage District

South River Drainage District
Mr. David Bleigh, President
PO Box 957
Hannibal, MO 63401

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APPENDIX A

Project Sponsor's Request for Rehabilitation Assistance

Project Information Report
South River Drainage District
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US Army Corps
of Engineers -
Rock Island District

Application for Rehabilitation Assistance for Flood
Damage Reduction Projects Following a Flood Event

1. Legal name of Flood Damage Reduction Project:

Flood 2019

2. Name, address and telephone number of Public Sponsor:

South River Drainage District
PO Box 957
Hannibal, MO 63401 573-221-2247

3. Location of Flood Damage Reduction Project (city, county and state):

Marion County, MO 63401

4. Date of last inspection by the Corps of Engineers:

November 15, 2018

5. Inspection rating received (*Acceptable, Minimally Acceptable or Unacceptable*):

Minimally acceptable

6. Name of waterway(s) experiencing high water event (above flood stage):

South River/Mississippi River

7. Please use Page 2 of this form to describe, in detail, the location(s)* of damaged section(s), extent of damage at each location and dates damages were observed. Include photograph(s) and map(s) if possible. A sample description is provided for your information. *A description must be included in order to process the rehabilitation assistance request. Incomplete applications will be returned to the applicant.*

Example 1: At ~STA 34+00, the levee was breached. Length of breach is 500-1000 feet long. See attached photo 1. Observed on 17 May 2011

Example 2: At 93.91N 41.60W, widespread erosion of the Riverside slope, approximately 1000' long. Observed on 17 May 2011

Example 3: Loss of riprap, about 4000 feet upriver from Gobblers Crossing. Observed on 17 May 2011

Signature, Title & Date

David M. Bluff P.O. ~~Box~~ S.R.D.D.
Public Sponsor or Responsible Official

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8. Please provide a description of the location of damages, extent of damage at each location and dates damages were observed. *The location should be described by stationing, latitude/longitude, distance to known landmark(s), or similar description(s) (see examples on Page 1, paragraph 7). Attach photograph(s) and/or map(s) if possible.

Sand levee undercut on river side at 580 + 10 to 580 - 90.
Will require bringing in dozer and redoing that section of levee.
Will take about 24 hours of work.

We have logs and trash on the levee and base from station 0 + 00 to station 680 + 00. We need to remove and dispose of the debris to be able to mow the levee and the base of the levee to bring it back into Corps specifications.

All this was caused by high water. To clean levee would take three (3) weeks, with five (5) men and some equipment.

\$ 32,556⁰⁰ est cost
DMB

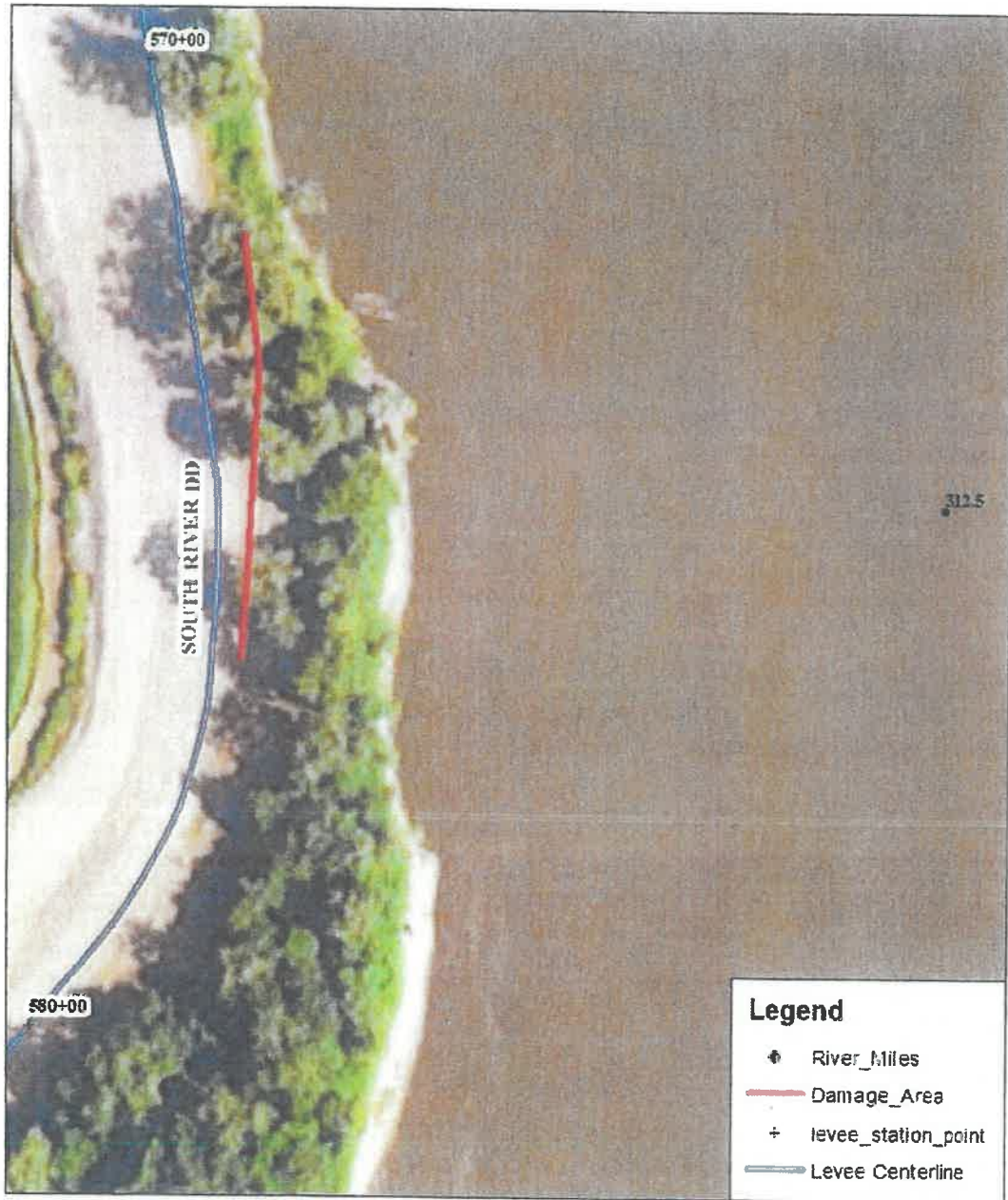
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APPENDIX B

Project Location and Design Data, Maps, and Related Information

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South River Drainage District



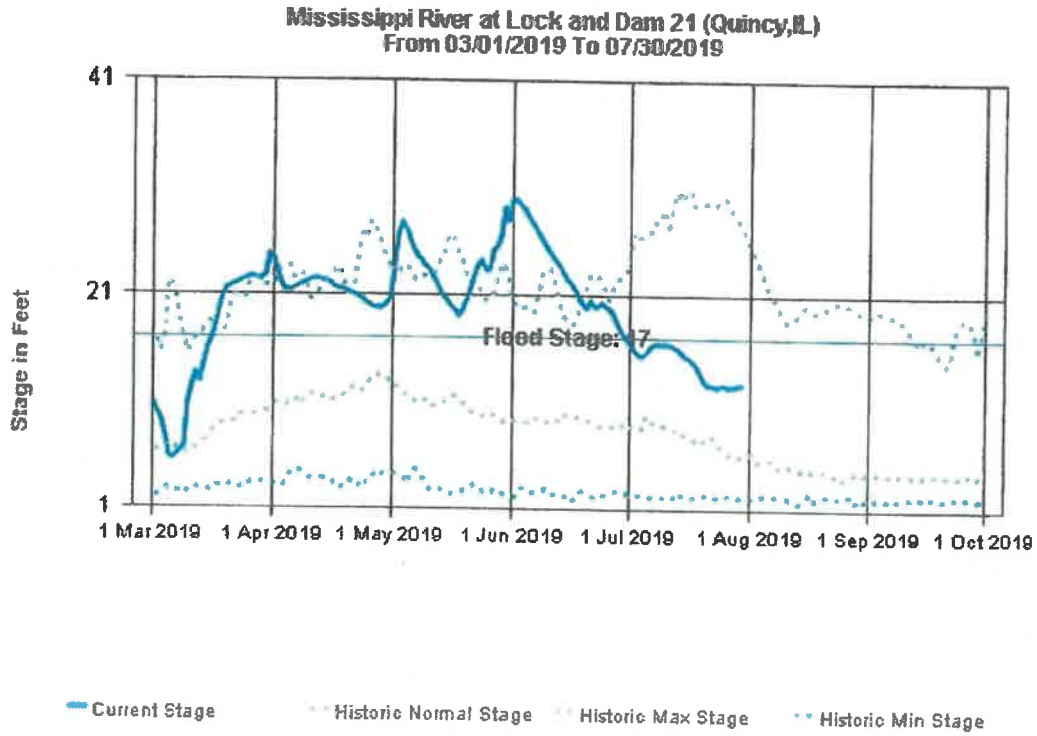
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APPENDIX C

Disaster Incident

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South River Drainage District
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Data from RiverGages.com



River Elevation (stage in feet) near South River Drainage District
March 1 2019 through 30 July 2019
Showing the March 2019 Flood Event

APPENDIX D

Damages

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Link to Damage Survey Report: [310001-RPT-2019-08-19-DSR.pdf](#)



Photo 1: Typical scour damage facing downstream



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Photo 2: Sand deposited at downstream end.



Photo 3: Steepened levee slope due to scour

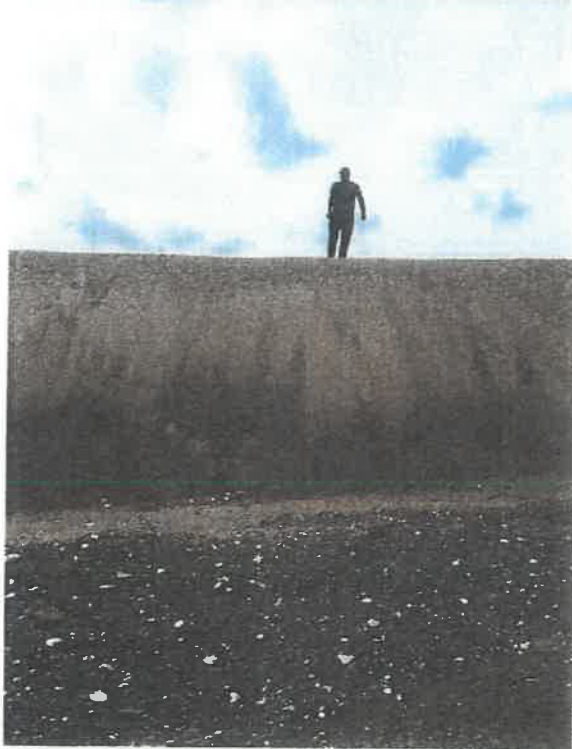


Photo 4: Steepened levee slope due to scour

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Photo 5. Sand deposited at downstream end



Photo 6. 13 foot tall sand pile deposited at downstream end

APPENDIX E

Repair Alternatives and Design Calculations

*Project Information Report
South River Drainage District
Marion County, Missouri*

Quantity Calculations: [BSSRIVER201901-COMP QTY-2019-09-09-South River 2019 Damages.xlsx](#)

*Project Information Report
South River Drainage District
Marion County, Missouri*

APPENDIX F

Economics

*Appendix Not Used.
See Section 11*

*Project Information Report
South River Drainage District
Marion County, Missouri*

APPENDIX G

Environmental

*Appendix Not Used.
See Section 12*

APPENDIX H

Interagency Levee Task Force

*Appendix Not Used
(An ILTF was not activated for the March 2019 high water event.)*

APPENDIX Z

**Project Information Report
Review Checklist**

	Yes	No	N/A
1.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The Project is active in the RIP. [ER 5-2.a.]		
2.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The Project was damaged by flood(s) or coastal storm(s). [ER 5-2.]		
3.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The Public Sponsor has requested Rehabilitation Assistance in writing. [EP 5-10.b.]		
4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The Public Sponsor has agreed to sign the Cooperation Agreement (CA), which will occur before USACE begins rehabilitation work. [ER 5-10.]		
5.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The estimated construction cost of the rehabilitation is greater than \$15,000, and is not considered Sponsor maintenance. [ER 5-2.q.]		
6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The repair option selected is the option that is the least cost to the Federal government, or, the Sponsor's preferred alternative is selected.		
7.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The Public Sponsor is aware of the opportunity to seek a non-structural alternative project, and has decided to proceed with a structural rehabilitation. [ER 5-16]		
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	The cost estimate in the PIR itemized the work to identify the Public Sponsor's cost share. [ER 5-11]		
9.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The rehabilitation Project has a favorable benefit cost ratio of greater than 1.0:1. [ER 5-2.r.]		
10.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The proposed work will not modify the FCW to increase the degree of protection or capacity, or to provide protection to a larger area. [ER 5-2.n.]		
11.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Betterments are paid 100 percent by the Public Sponsor. [ER 5-2.o.]		
12.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	The CA contains a provision for 80% Federal and 20% local costs share for non-Federal projects. [ER 5-11.a.]		

- 13. Cost for any betterments are identified separately in the cost estimate. [ER 5-2.o.]
- 14. Repair of deliberate levee cuts is the responsibility of the Public Sponsor, except as provided for in ER 500-1-1, paragraphs 5-2.j. and 4-3.h. [ER 5-2.j. and 43.h.]
- 15. All deficient and deferred maintenance will be paid for or accomplished by the Public Sponsor, without receiving credit toward any Sponsor's cost share. [ER 5-2.g.]
- 16. Any relocation of levees is adequately justified. [ER 5-2.h.]
- 17. USACE assistance does not correct design or construction deficiencies. [ER 5-12.a.]
- 18. An assessment of environmental requirements was completed. [ER 5-13 and EP Figure 5-3, paragraph 12.]
- 19. The Project complies with NEPA, and required documentation was completed and placed in Appendix G or the PIR. [ER. 2-3k.; ER 5-13.; and EP Figure 5-3., paragraph 12.]
To be completed prior to construction.
- 20. The Endangered Species Act was appropriately considered. [ER 5-13.g., and EP, Figure 5-3., paragraph 12.]
To be completed prior to construction.
- 21. EO 11988 requirements were considered in the process of evaluating the proposed Project for rehabilitation. [ER 5-13.f., and EP, Figure 5-3, paragraph 12.]
- 22. The completed PIR has been reviewed and the PIR Checklist has been reviewed and signed by the Emergency Management Office. [EP 5-11.a(3)(a)]
- 23. The completed PIR meets all policy, procedural, content, and formatting requirements of ER 500-1-1. [ER 2-3.b.]

EM REVIEWING OFFICIAL'S SIGNATURE _____

Name: Sarah B. Jones Title: Emergency Management Division Phone: (309) 794-5206

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: SOUTH RIVER DEWARAGE DISTRICT

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

- The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:
- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
 - Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
 - If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		

Marion County, Missouri
PRESS RELEASE

For Immediate Release

Contact: Devyn Campbell
573-565-2203

Marion County Planning Committee Seeks Public Input

Marion County, MO — The public is encouraged to review and comment on the Marion County Multi-Jurisdictional Hazard Mitigation Plan Update before it is finalized. The plan includes an updated strategy to reduce damage and losses caused by hazard events. The final draft of the plan will be available online and in hard-copy at select public locations in Marion County from April 21-30, 2021. The purpose is to provide information to the public on the Multi-Jurisdictional Hazard Mitigation Plan Update as well as gain public input.

Each year, thousands of American families are affected by disasters, and billions of dollars are spent on disaster recovery. Some disasters are predictable, and often, losses and damages can be reduced or eliminated. For these reasons, the Federal Disaster Mitigation Act of 2000 requires communities to develop an approved local hazard mitigation plan. Without such a plan, communities are not eligible for certain federal funding.

Representatives from county departments, the incorporated cities, public school districts, and other mitigation planning stakeholders worked together to develop this plan update. The planning committee addressed hazards ranging from extreme heat and severe winter storms to tornadoes and flooding—and considered the impacts of these events on local communities. Based on the results of an updated risk assessment of the hazards, committee members updated the strategies for their jurisdictions to reduce damages caused by the various hazards.

The planning committee would like input from the public on the updated strategy for Marion County. Public comments will be considered by the Hazard Mitigation Planning Committee and incorporated into the plan, as appropriate.

From April 21, 2021 – April 30, 2021 the final draft plan will be available for your review at the following locations:

Online at: marktwaincog.com

In hard-copy during normal operating hours at: Marion County Courthouse
100 S. Main, Palmyra, MO

The final plan must be approved by the governing body of each participating jurisdiction, the Missouri State Emergency Management Agency, and FEMA before becoming official. The Mark Twain Regional Planning Commission has taken the lead in developing this plan. The point of contact is Devyn Campbell, Fiscal Officer/Community Planner. For more information on this project, contact Devyn Campbell at 573-565-2203.