

HAZARD SPECIFIC ANNEX #HA1
FLOODING

I. GENERAL PROVISIONS

- A. Designation: This annex focuses on the City of Pacific’s vulnerability for flooding and addresses the Emergency Management details to plan, respond, manage, and recover from such a hazard.
- B. Purpose: To maximize human survival and preservation of property within the City of Pacific, in the event of a flooding emergency by effective utilization of manpower and resources available.
- C. Organization: See Disaster Command Structure
- D. To facilitate the most efficient and effective use for resources and standardized response and management of incidents in the city of Pacific. All departments within the City shall use the National Incident Management System (NIMS). NIMS will provide a consistent approach for governmental agencies to work together, more effectively to respond and recover from an incident regardless of cause size or complexity.

II. SITUATION AND ASSUMPTIONS

- A. Situation: The City of Pacific is vulnerable to the effect of both seasonal and flash flooding disasters. Portions of the City are located in Zone AE (100-year flood plains) and Zone X (500-year flood plains) according to FEMA. The City does, however, have capabilities, which if used promptly properly, could maximize the preservation of both life and property. These capabilities include a warning system, a fire fighting force, a police force, and a public works department. The community also has resources in the health and medical professions, and in other parts of the non-governmental sector. A primary objective of the Pacific Emergency Preparedness program is to ensure prompt and effective use of all capabilities should Pacific be struck by a flooding disaster.
- B. Assumptions
 - 1. That a flooding disaster can and will strike Pacific, and may cause the City, or parts thereof, to be isolated from outside assistance and forced to be self-sustaining.
 - 2. During a flooding disaster, two possible Evacuation Centers (the Tri-County Senior Community Center, and the Eagles club) may be impacted, and therefore unavailable.
 - 3. Large-scale evacuations would not likely be necessary. However, it is possible that specific sections of the City would require evacuation and all related tasks which are inherent with such a mandate. (See ESF#13-2 Evacuation and Re-Entry)

- C. City of Pacific's most likely flooding hazards are from the following sources:
 - 1. Meramec River
 - 2. Brush Creek

III. EXECUTION

- A. Concept of Operations
 - 1. Refer to the City of Pacific's Emergency Operation Plan in Basic Plan Section I, paragraph V.
- B. Task Assignments
 - 1. Refer to the City of Pacific's Emergency Operation Plan ESF#5 Appendix 3.

IV. ADMINISTRATION IN LOGISTICAL SUPPORT

- A. Supply
 - 1. Each department head shall be responsible for procurement of its own essential supplies needed for emergency operations, through normal procurement channels.
 - 2. That the City has basic equipment and flood related materials, e.g. sand and bags, to commence response operations until such time that additional resources arrive.
 - 3. All city-owned transportation is to be utilized, as required. School buses from Meramec Valley R-III School District, if available, should be engaged in the event of a major evacuation. Other possibilities include First Student, Inc. of Eureka, MO and Bi-State Development Agency of St. Louis, MO. The direct cost is to be billed to the City of Pacific.
- B. Manpower
 - 1. The City of Pacific work force may be assisted by work forces from adjacent jurisdictions.
 - 2. City of Pacific work force may be directed to assist adjacent jurisdictions, under existing mutual aid agreements.
 - 3. The area Police Code 1000 plan and Fire and EMS mutual aid could conceivably be implemented.

V. DIRECTION, CONTROL, COMMUNICATION & WARNING

- A. Pacific is within Missouri State Emergency Management Agency's Region C-UASI.
- B. Upon becoming aware of an emergency situation, the Mayor, after conferring with the City Administrator, Chief of Police and EM Director, shall designate if an official Emergency will be declared. If true, all applicable sections of this EOP shall be activated.

VI. INITIAL EVACUATION RESPONSE

A. Receive Warning

The National Weather Service, through a monitoring and warning system, is able to give advanced notice of gradual flooding hours, and even days, before it results in serious loss of life and property.

The National Weather Service may issue a flash flood watch, which means: Heavy rains may result in flash flooding in a specified area. Resident should be alert and prepared for the possibility of a flood emergency which may require immediate action.

The National Weather Service may issue a flash flood warning which means: Flash flooding is occurring or is imminent in a specified area. Residents should move to say ground immediately.

B. Notify Public

It is the joint responsibility of the National Weather Service and/or the local governmental entity to issue a warning via sirens, radio, television, social media, etc. Early warning, if possible, would enable those in flash flood hazard areas to move or safeguard their property, thus, simplifying evacuation should it become eminent.

VII. EVACUATION

- A. Designate the flood hazard area and areas to be evacuated. See ESF#13-2 for specifics regarding Evacuation Orders and related processes.
- B. Establish perimeter security. The purpose is to limit access to looters and sightseers, but to allow the managed egress by victims.
- C. Establish shelter/relief services for victims and pets/animals when possible. It must be decided when to open such facilities and where they should be located. Location of shelter areas and assistance in the form of food and clothing could be supplied by the local Red Cross, Salvation Army, and other relief agencies.
- D. Notify affected persons. If early warning is not effective, all remaining persons within the designated flood area must be contacted. This is best accomplished on a door-to-door basis, area sirens, loudspeakers or patrol cars, or government-manned telephones. A method to record location of visits, times, dates, and results of attempted visits should be devised. (See Appendix 2 to this Annex.)

8. APPENDIXES

1. Flood Evacuation
2. Record of Evacuation
3. Disaster Sequence of Event - Flood
4. City of Pacific Emergency Action Plan – Flood
5. Step 3 – Notification and Communications – Flood
6. Step 4 – Sample Expected Actions - Flood
7. Resource Ordering
8. Resource Request Form
9. Pacific Flood Impact Levels and Descriptions

Appendix 1 to HA1
FLOOD EVACUATION

I. GENERAL PROVISIONS

A. Situation

1. The City of Pacific is vulnerable to a wide range of atmospheric conditions that produce weather which is variable and subject to rapid change.
2. The City of Pacific is most prone to be impacted from flooding primarily from the Meramec River, and secondarily from Brush Creek. In general, the City of Pacific flooding zones from these sources are shown at <https://www.pacificmissouri.com/DocumentCenter/View/408/Flood-Map-panels-effective-June-5-2020?bidId=>.
3. The typical, broad area when the Meramec River rises to above the Moderate threshold level (23 ft) includes the area east of South 1st Street (Hwy. F) from Orleans St. south to Jefferson St. AND the area south of East Osage St. (Old Route 66) from Columbus St. east to the US Silica Plant. However, as the river reaches the Major threshold level (27 ft), this can expand to areas north of East Osage Street to Walnut, and to areas west of Hwy. F to South 6th Street.
4. When the Meramec River levels reach the Moderate threshold height it is generally true that the banks of Brush Creek encroach expanded areas and all residents on either side of the creek are potentially subject to property flooding as well. The creek runs more-or-less from the western portion of Pacific in a SE direction and flows into the Meramec River.

B. Assumptions

1. The City of Pacific is vulnerable to damage and loss of life resulting from flooding.
2. Floods are generally caused by rainstorms lasting several days and moving northeastward across the area and occur frequently from January to May.
3. Floods may occur as two distinct types of flooding or they may occur singularly or in combination. The types are commonly referred to as backwater and headwater flooding.
4. Local authorities will take immediate steps to warn and evacuate citizens (and their pets when practical), alleviate suffering, protect life and property, and commit available resources before requesting assistance from the next higher level of government.

- C. Return flood victims once the floodwaters recede and it is otherwise safe to do so. A public information program should so inform the evacuees when to return, what to expect upon return (i.e., how to turn the utilities back on, how to purify water, etc.), and of services being offered by local government, such as pumping basements and debris removal. Also, local government would warn of other related hazards so persons would be alert to changes in their environment.

II. GENERAL PROVISIONS

To provide for the orderly and coordinated evacuation of people from those areas which are vulnerable to flash flooding, slow-developing flooding, and levee failure.

III. ASSUMPTIONS

A. Assumptions

1. We shall be impacted by flooding and need to maintain both contact with the National Weather Service as well as our own observations.
2. That we shall have advanced indication and prediction of an impending flood thereby affording all Emergency Management planning, actions and personnel to address the situation.
3. That the impacted public shall, in general, cooperate with generally accepted practices and adhere to authorized personnel, alerts/warnings and real-time realities. However, we must be prepared to manage the exceptions which do occur.
4. That we shall be able to obtain personnel and resource reinforcements to manage the emergency and evacuation from other jurisdictions and calls for local volunteers. However, we might need to expand the request to additional agencies and/or higher-level mutual aid resources as the Meramec River flows through many neighboring municipalities which will also be flooding.

Appendix 3 to HA1

DISASTER SEQUENCE OF EVENT - FLOOD

Local response includes:

1. Acting as the primary “first provider” of emergency response services.
2. Activating the Emergency Operations Center (EOC) and Comprehensive Emergency Management Plan.
3. Coordinating the response with public and private organizations and agencies.
4. Notifying the State Emergency Management Agency of the situation by regularly submitting Situation Reports (SITREP) via WebEOC or alternative.
5. Activating necessary local governments and organizations that are signatory to mutual aid compacts.
6. Activating response agreements with State and Federal departments or agencies.
7. Proclaiming a local state of emergency to authorize: = Using local resources; = Expending local funds; and = Waiving the usual bidding process for goods and services.
8. Requesting the State Emergency Management Agency to provide State and/or Federal assistance.

Appendix 4 to HA1

City of Pacific Emergency Action Plan - Flood

**Step 1:
Event Detection**

National Weather Service and/or Franklin County EMA and/or St. Louis County OEM

Pacific Unified Command
Police - Fire – PW - Building Dept

**Step 2:
Emergency
Level**

Level 1
Local Monitoring of River Levels

Communicate with NWS and County EMA/OEM

Below 18 Feet

Level 2
Based on River Level projections 20 feet

Conference call or meet face to face with weather service and OEM for river prediction mapping of Meramec River

Level 3
Based on River Level projections exceeding 26 feet.

Unified Command is Implemented

Incident Action Plan created filling command and general staff positions

Crisis Action Team is established and conducts regular meetings to manage incident

**Step 3:
Notification and
Communication**

Notifications to Citizens
“City is monitoring river levels”

Briefings from NWS & OEM

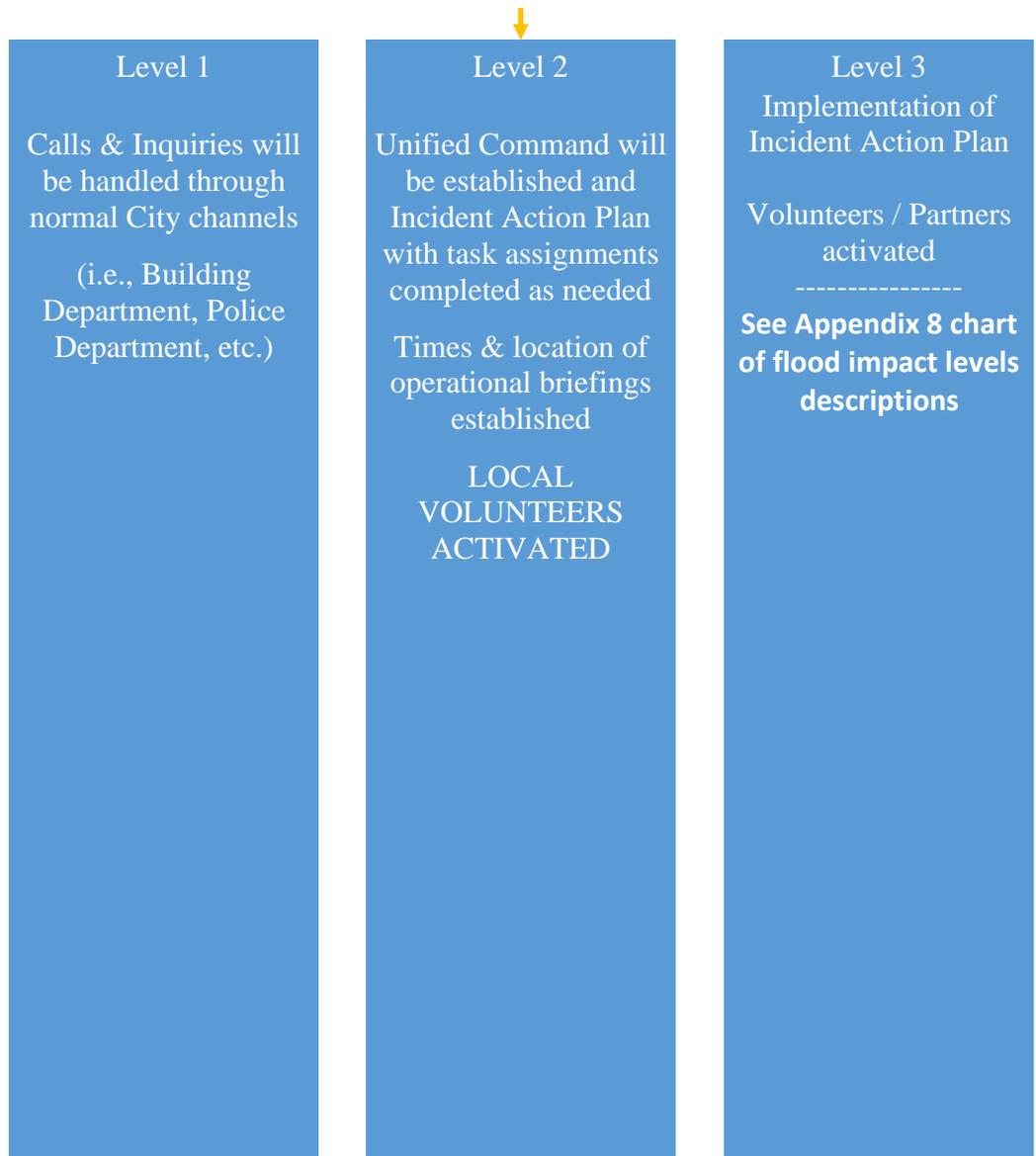
Action level above 20 feet
Notifications to NWS & OEM
Prediction Maps created
Notify Citizens of forecasts and preparation for flooding

Planning and Operation Sections Activated

Notification to Citizens
CAT,
PIO Assigned

See Community Partners List

**Step 4*:
Expected Actions**



Step 5:

Demobilization & Remediation

Consists of removal of debris and water-soaked sandbags. All are considered hazardous materials and permits from Franklin and/or St. Louis County Health Department, and Mo DNR are needed before any can be removed for storage or awaiting disposal.

***Step 4 Note: Sandbagging: #1 North 3rd Street between W St Louis ST. and the railroad tracks; #2 Pacific Commuter Parking Lot west of S 1st Street, south of the railroad; #3 Other locations as deemed necessary. Availability of sandbags is possible from MECC with prior arrangements and authorizations.**

Appendix 5 to HA1
Step 3 – Notification and Communication - Flood

Notification:

After the emergency level has been determined, the people on the following notification charts for the appropriate emergency level shall be notified immediately.

Communications:

Flood Level 1 – Non-emergency, usual event; slowly developing: No urgent notifications.

Staff will monitor levels and report any unusual incidents or activity to the proper department and City Administrator.

Flood Level 2 – Emergency event, River Level hits 18 feet and projected to rise up to 26 feet, this is rapidly developing: Department Heads and City Administrator meet with Fire and other agencies. Development of Incident **Action Plan** Starts as soon as possible for expanding incident.

Police and Fire monitor calls from public concerning flood and provide information that is developed and approved by the EOC Staff. All lines at the PD and City Hall are answered live during this activation.

Flood Level 3 – Activated staffing at the PD and City Hall shall be increased to manage phone volume, office activities and additional emergency demands.

1. The City Public Information Officer prepares information releases and provides those to Police and Fire Department, EMD and relevant staff. This may include instructions, forecasts or resource information for the public.
2. Public Information is disseminated and hand flyers distributed to the areas projected to be impacted indicating the situation, probable road closures and detours, and other real-time, relevant information. Voluntary evacuation or shelter in place are two options. Police and Fire will have personnel in critical locations 24 hours a day until demobilization is implemented, e.g. control points and shelters.
3. City Sirens are also available as a viable communications tool via the “live voice” feature.
4. Community Partners are contacted and notified of river levels and resources needed from them.
5. Sandbag help messages are prepared and sent via the media and public via ReGroup, partner contacts, volunteer lists, social media and City website.
6. The designated EOC Director shall conduct regular operational meetings with all department heads, responder officials and community partners, et. Al.

7. The City Public Information Officer shall respond to special situations within the incident.

Prepare a fact sheet and/or news release that describes the nature of the incident and addresses who, what, where, when and why.

- o Size

- Location (proximity to well-known locations).
- Time and date of origin.
- Cause (if cleared).
- What is threatened?
- Resources to be protected.
- Costs to date if known.
- Damages (property and resources).
- Current and expected weather conditions.
- Predicted containment/control.
- Cooperating agencies.
- Equipment and resources committed and responding as approved by the Incident Commander or Emergency Committee.

Emergency Level 3 – Urgent: flooding is imminent or in progress:

All Steps from Level 2 that have not been completed, shall be done so immediately with any additions as determined by the EOC.

The following SAMPLE, pre-scripted message may be used as a guide for the Local Emergency Manager/Coordinator or other emergency service personnel to communicate the status of the emergency with the public:

Sample Message 1:

This is an emergency message from the City of Pacific. The Missouri Department of Transportation has determined that E Osage Street will close from the US Silica Plant to First Street, and Highway F from the railroad tracks to Palisades Drive on the south side of the City. Closure will occur sometime after 12 noon today. Please be prepared as you will not be able to drive out of your subdivision for an extended period due to water over the roadway. We will update you as soon new information is available.

Sample Message 2:

This is the City of Pacific. A section of E Osage Street from First Street to the US Silica Plant will close sometime early this evening according to the Missouri Department of Transportation. Please be prepared to shelter in place for up to 36 hours if you do. Pacific Police and Fire will have officers in your neighborhood during this high-water event. Call 9-1-1 for emergency or 636-527-2424 for non-emergencies. We will update this message as data changes from the National Weather Service.

Sample Safety Message

Never drive cars, trucks or sport utility vehicles through flooded areas. The water may be too deep to allow for safe passage. “Don’t Drown Turn Around.”

Sample Message 3:

Flooding is occurring at/on (road name, subdivision name). Avoid this area. If in the area, use another route or wait until flooding recedes. Follow all instructions from public safety officials or local emergency authorities. For updates, go to www.pacificmissouri.com.

Flood Emergency Level 1 Notifications

Pacific Public Works Director

Robert Brueggemann

636-271-0500 x285 or 314-486-1375

rb@pacificmissouri.com

Pacific Emergency Management Director

Hal Schulman

636-271-0500 x285 or 630-886-8641

hschulman@pacificmissouri.com

Pacific Chief of Police

Col. Scott Melies

636-271-0500 x101 or 314-347-5575

smelies@pacificmissouri.com

Pacific City Administrator

Steve Roth

636-271-0500 x213 or 573-301-5620

sroth@pacificmissouri.com

Flood Emergency Level 2 Notifications

Level 1 Notifications PLUS the following:

Mayor

Heather Filley

324-578-5143

hfilley@pacificmissouri.com

Pacific Fire Protection District Chief

Steve Sagehorn

636-257-3633

ssagehorn@pacificfire.org

Meramec Ambulance District Chief

Justin Duncan

636-451-0970

(on-duty Battalion Chief)

duncan.j@meramecems.org

Director of Community Development

Steve Myers

314-974-7446

smyers@pacificmissouri.com

Flood Emergency Notifications Level 3

Level 2 notifications PLUS these additional contacts as relevant/determined by the Emergency Management Director or Incident Commander.

Franklin County Emergency Management Agency

Abe Cook, Director

636-584-1011

acook@franklinmo.net

Notify county police dispatcher via radio that you need someone from EMA to call you ASAP

St. Louis County Office of Emergency Management

Michele Ryan, Director

(314) 615-9500

mryan@stlouiscountymo.gov

Notify county police dispatcher via radio that you need someone from OEM to call you ASAP

They can potentially provide the following example resources to supplement Pacific:

Sandbags, drinking water, shovels, gloves, pumps, sand, light towers

American Red Cross

800-733-2767 (for sheltering, food for victims, sheltering for victims and food for workers (3 hour minimum response time))

United Way of Greater St. Louis, Inc. (aka 2-1-1)

314-421-0700 (supports communities before and during disasters. That might be directing people to evacuation routes and shelters beforehand, or helping people get food, water and emergency supplies afterwards.)

Appendix 6 to HA1
Step 4 – Sample Expected Actions

Flood Level 1: Non-emergency, Unusual Event reported to PD; Slowly Developing:

Flood Level 2: Potential and Moderate Flooding Situations; rapidly developing:

Sand bagging set up begins triggered by river levels / Community Notifications and Updates
Volunteer Needed notifications made
Sandbags obtained from the Corps of Engineers / Sand Purchased / MECC
Franklin and/or St. Louis County EMA/OEM Notified as to Pacific's Situation
EOC and perhaps MAC Group formed for IAP creation, strategy and priority setting
Attend EOC briefings with St. Louis County and/or Franklin County if relevant
Attend NWS and FEMA briefings as applicable
GPS location of all sandbag placement needed

Flood Level 3: Urgent; Major Flooding Appears to be Imminent or is in Progress:

Sandbagging ongoing / Life Saving actions by Fire and Police / Security Provided by Police Department/National Guard. If I-44 is closed due to water, notify MSHP to patrol I-44 leaving Pacific Police Department free to focus on local flooding.

Sign in/out stations manned by volunteers (locations to be determined).
GPS location of all sandbag placement needed
Attend EOC, NWS and FEMA briefings

Step 5 – Termination of sandbagging Operations / Start of Recovery Process

Cleanup actions and debris removal begin. Document all expenses, continue to sign in and out volunteers who assist with cleanup for reimbursement by FEMA. Gather every 3 hours, sign in and out sheets for volunteers. Document City and donated equipment hours of operation, type of equipment (front end loader, bobcat, dump truck, etc.)

Gather Health Department permits from State and County before any sandbags are removed from any locations. *Make sure County and State officials know bags are being taken to the Community Center location and have given permission to do so. - Place in file for reimbursement.*

If permission is granted to remove bags, take bags to community center (as in past history). State, Federal, County and local authorities will need to plan how to **pay** for and remove the bags from the community center parking lot. *(In the past, all of the sandbags touched by water have been considered contaminated waste.)*

Obtain The Counties County's procurement Policy from Logistics Officer - **Place in file for reimbursement.**
Category A - Debris Removal FEMA alternate program documents - **Place in file for reimbursement.**
Obtain original document of Mayor's Disaster Declaration Date and Time - **Place in file for reimbursement.**

Appendix 7 to HA1
Resource Ordering

For Flood Levels 2 & 3 Services & Other Contacts

Pacific Public Works is the primary contact for flood related resources. The list of typical resource vendors is provided in EOP Restricted Annex #4. Appendix 7 of HA1 is a Resource Request Form for use when *ordering from outside vendors*. All paperwork shall be given to the EOC daily.

Appendix 8 to HA1 RESOURCE REQUEST

1. Incident Name:	2. Date/Time	3. Requested by:			
Requester	4. Order (Use additional forms when requesting different sources of supply.):				
	Qty	Detailed Item Description (Vital Characteristics, brand, specs, size, etc.)	Received by:	Date/Time:	Cost
5. Requested deliver location:					
6. Requested by Name / Position:		7. Priority: <input type="checkbox"/> Urgent <input type="checkbox"/> Routine <input type="checkbox"/> Low	8. Approval Police Chief / Fire Chief Initials		
Logistics	9. Name of Supplier and Order Taker Name		10. Supplier Phone / Fax / email:		
	11. Notes		12. Date and Time order placed:		
Finance	13. Reply/Comments from Finance:				
	14. Finance Section Signature:		15. Date/Time:		

Daily, all forms shall be turned in to the Police Department

Appendix 9 to HA1

NOAA IMPACT CHART FOR MERAMEC RIVER AT PACIFIC, MO

River Stage	Elevation	Date	Comments
0.00	432.53		@Gauge Hwy. F @River
13.00	445.53		Action Stage
15.00	447.53		Farm and pasture land begins to flood and lower elevations, e.g. south side of Bend Rd bridge.
15.40	447.93		Hunters Ford Road (Eureka) is closed near this height.
15.42	447.95	3/30/2018	
16.00	448.53		Route N begins to flood.
16.20	448.73		Opeechee Beach Road begins flooding.
16.50	449.03		Opeechee Beach Road is flooded and closed.
16.59	449.12	4/21/2013	
17.00	449.53		State Highway AK begins flooding near the intersection with State Highway O near this height.
17.50	450.03		Private road under the Highway F bridge begins flooding near this height.
18.00	450.53		The left bank begins to overflow.
18.60	451.13		Horneker Road begins to flood near this height.
18.82	451.35	2/27/2018	
19.39	451.92		Private road under the Highway F bridge becomes flooded at this height.
19.97	452.50	1/14/2020	
21.14	453.67	11/2/2009	
22.00	454.53		Jefferson Street extension is flooded and closed. Dogpound at the east end of East Congress Street begins to flood.
22.60	455.13		Four houses near the gage begin to flood at this stage.
23.00	455.53		The lift station property at East Congress and Elm Street begins flooding near this height.
23.50	456.03	11/22/1985	Water begins flooding the grounds at the St. Louis Skeet and Trap Club east of Pacific.
24.40	456.93		Highway F & O at Brush Creeks is flooded and closed.
25.00	457.53		East Congress between Columbus and Olive are flooded in City of Pacific.
25.50	458.03		Denton Road from the Industrial Park south is closed.
26.00	458.53		Highways F & O begin to flood, cutting off access to Pacific from the south.
27.00	459.53		20 to 30 residences become subject to flooding. Major flooding begins.
27.20	459.73		Missouri State Route O west of Robertsville State Park begins flooding near this level.
27.50	460.03		East Osage Street (Route 66) is closed.
28.80	461.33		Route 66 (Missouri Route O) is closed in both directions from just east of Pacific to Six Flags Road in Allenton.
28.91	461.44	4/14/1994	The Olympic Shooting Facility at the St. Louis Skeet and Trap Club is flooded.
29.50	462.03		Near this height, the Graphic Packaging International Company begins flooding at Denton Road and Jefferson Street.
29.60	462.13	3/22/2008	
29.70	462.23		The clubhouse at the St. Louis Skeet and Trap Club begins to flood.
31.00	463.53		Railroad tracks begin to flood. This did not happen in 2015 as water
32.70	465.23		Backwater from Calvey Creek will force the closure of Missouri State Route O east of Robertsville near this height.
32.71	465.24	12/6/1982	
32.80	465.33		Near this height, Interstate 44 may close in both directions east of mile marker 254.0. This occurred during the December 2015 flood.
33.05	465.58	5/2/2017	
33.42	465.95	12/30/2015	
33.50	466.03		The BNSF RR tracks act as a levee protecting the eastern two-thirds of Pacific. Near this height, these tracks may be overtopped.
33.80	466.33		Near this height, the Husky Corporation and the Pro Roller Company along Industrial Drive at Denton Road begin flooding.
	432.53		
LEGEND			
ACTION	MINOR		
MODERATE	MAJOR		