



# 2019 Southwest Iowa Flooding

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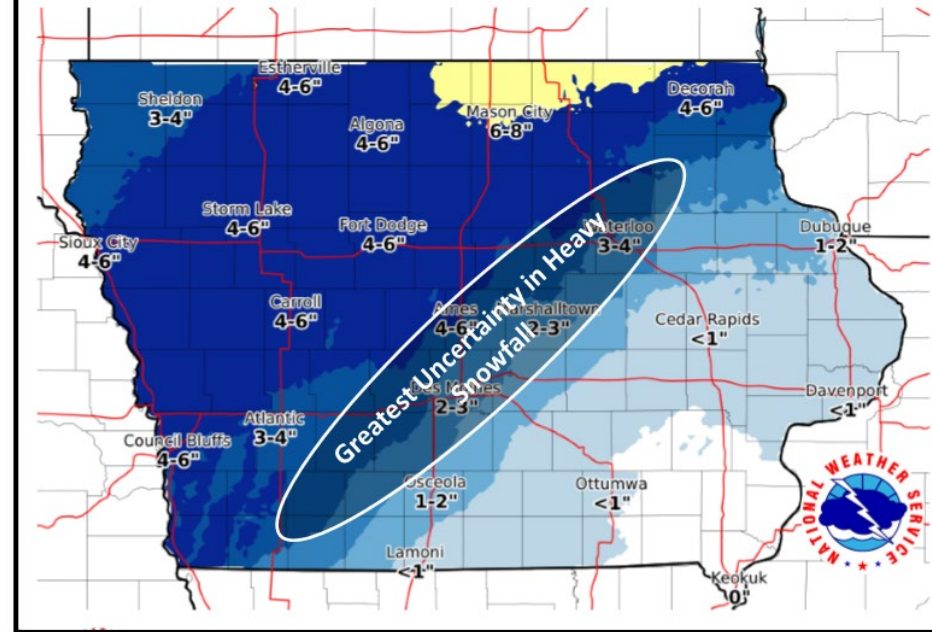


# How did it all start?

- ▶ **Weekend of February 22<sup>nd</sup>, 2019, large snow storm hits.**
- ▶ **Total snowfall ranges from 4” to 6”**
- ▶ **This is in addition to previous snow fall earlier in the month**
- ▶ **Temperatures remain around 20 – 30 degrees Fahrenheit**

## Winter Storm Watch – Late Saturday Afternoon through Sunday

Expected Snowfall - Official NWS Forecast  
Valid: 3 PM Saturday through 3 AM Sunday





# How did it all start?

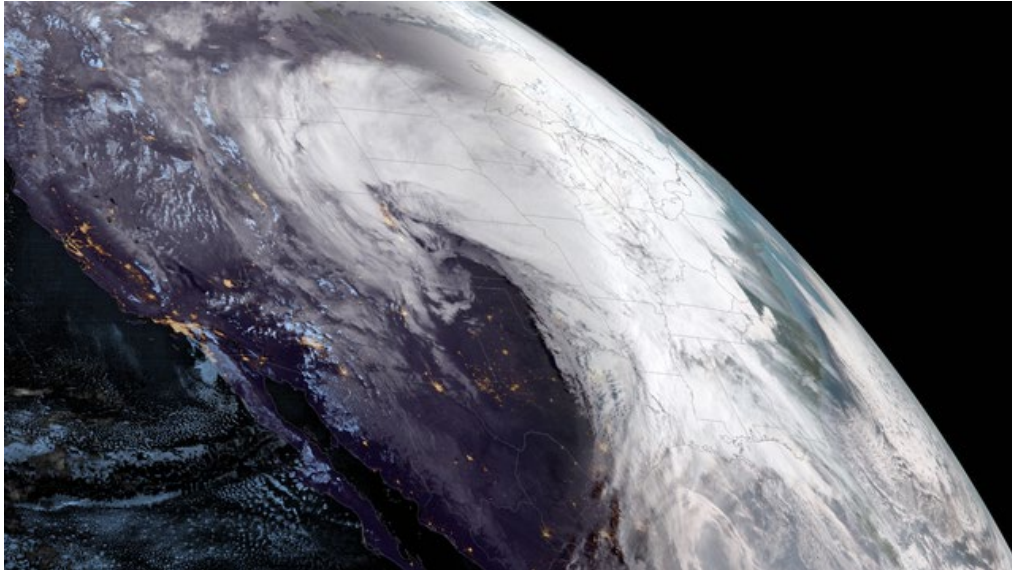
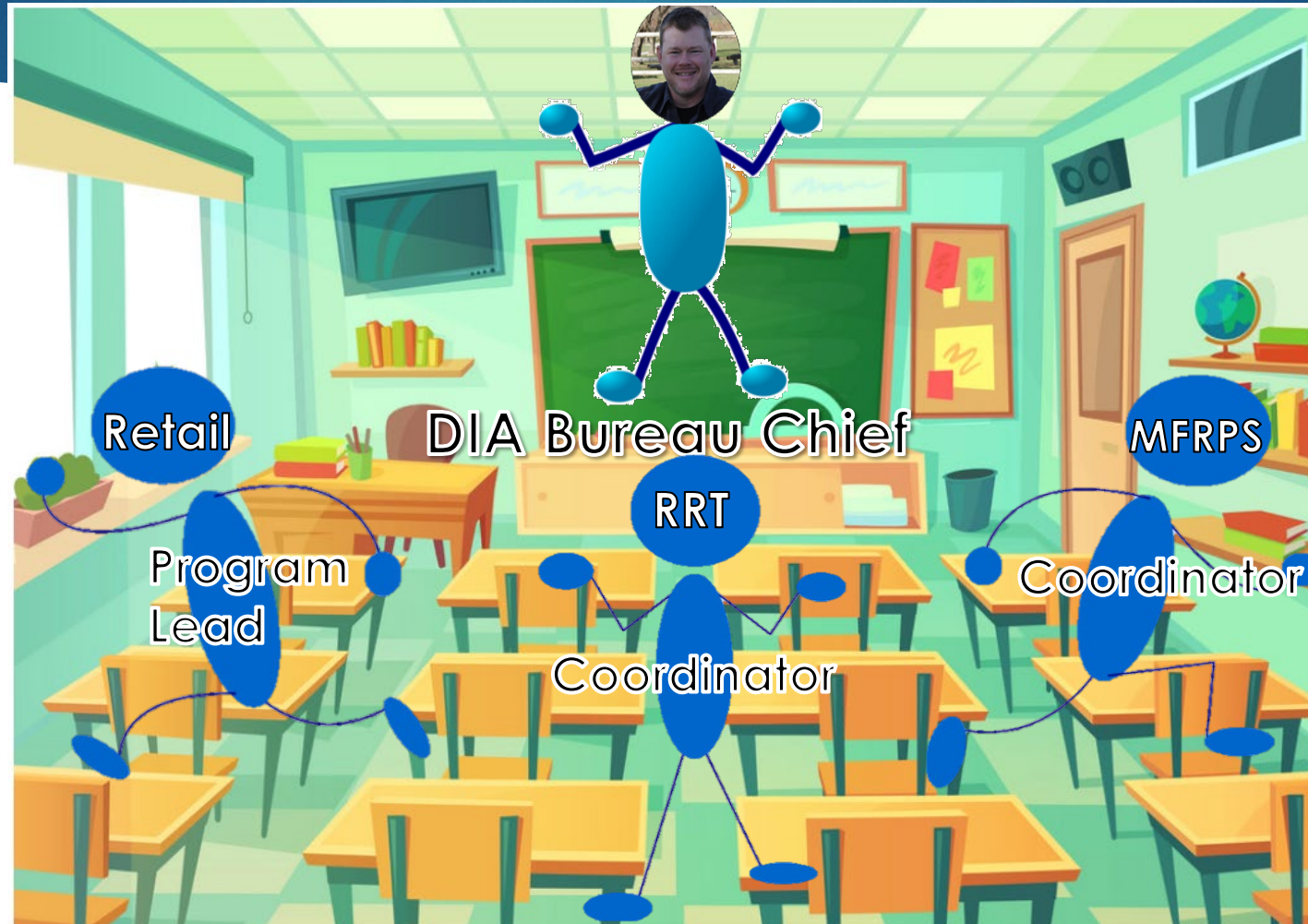


Photo courtesy of NOAA's GOES West satellite

- ▶ **March 2019 – North America Blizzard hits**
- ▶ **Also known as a “bomb cyclone”**
- ▶ **Large amount of snowfalls, followed by rapid snow melt due to rainfall and rise in temperature**
- ▶ **Ground was still frozen; water had nowhere to go, but out**

# Flooding is Forecast



**March 13<sup>th</sup> - 17<sup>th</sup> 2019**

## **DIA OFFICE STAFF**



**March 14<sup>th</sup> the SEOC went into full activation**  
**Monitored Web EOC communication traffic**  
**Notified RRT Core members**

## **DIA FIELD STAFF**



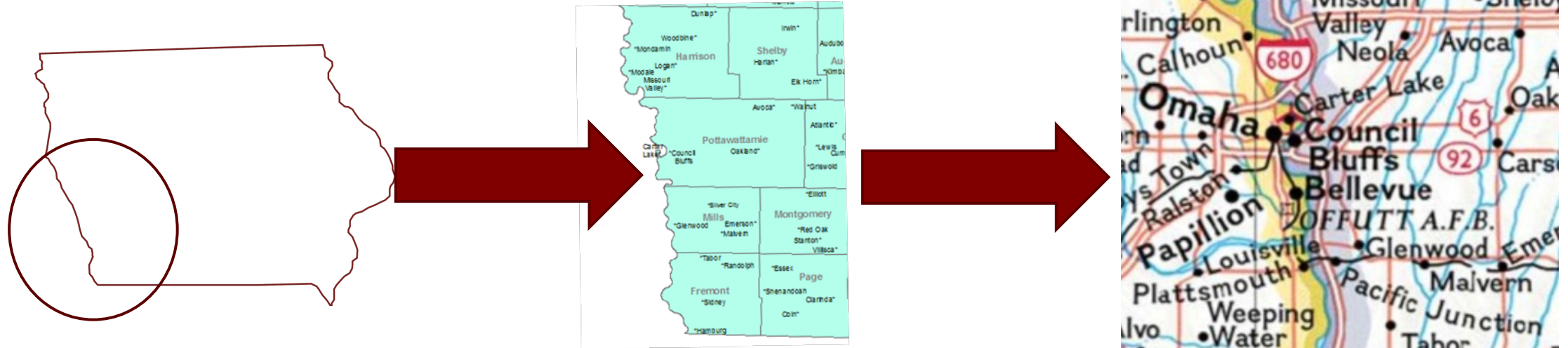
**Weekend of March 15<sup>th</sup> through 17<sup>th</sup> –**  
**monitored local media for any**  
**information regarding flooding**



# Flooding is Confirmed



# The levees are breached



Communities impacted:

Glenwood

Hamburg

Pacific Junction

Percival

# March 17<sup>th</sup> – 18<sup>th</sup> 2019

## DIA OFFICE STAFF



- Identified impacted facilities
- Alert messages
- Identified emergency shelter locations

## DIA FIELD STAFF



- Found photos of flooding on social media sites
- Began hearing from Glenwood operators on March 18<sup>th</sup>
- Emailed DNR late on March 18<sup>th</sup>



# March 18<sup>th</sup> – 19<sup>th</sup> 2019

## DIA OFFICE STAFF



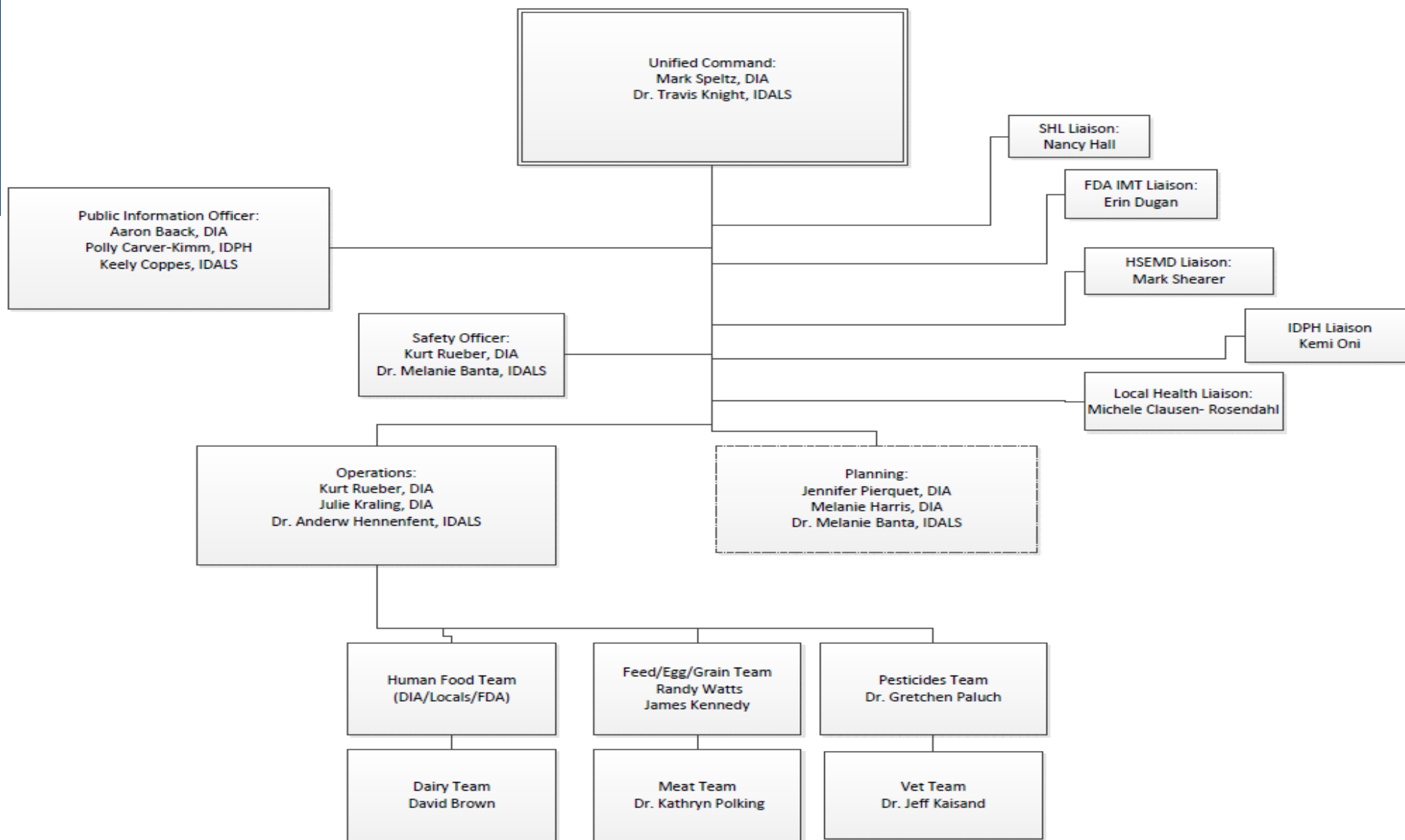
- **Call with RRT Core Members**
- **Core Members went to Executive Action Board members to gain activation approval**

## DIA FIELD STAFF



- **Emailed affected food establishments in Mills and Fremont counties directly.**
- **Reached out to Pottawattamie Co. Health, City of Council Bluffs, and food establishments located on Missouri river in Council Bluffs**

# Activation of Iowa RRT ICS





# Field Staff Response

## AFDO Food Emergency Regulator Pocket Guide 3rd Edition



ASSOCIATION OF FOOD AND DRUG OFFICIALS

www.AFDO.org

May 2018



### Guidance for Food Establishments during and after a Water Advisory

1. What is a boil water advisory?
  - a. A boil water advisory is issued by a public water system when there is concern that a problem with drinking water exists. All water used for drinking, preparing food, beverages, ice cubes, washing fruits and vegetables, should be brought to a rolling boil for at least one minute (or the length of time in the advisory) on a stovetop, in an electric kettle, or in a microwave (in a microwave-safe container).
2. What is bottled water advisory?
  - a. A bottled water advisory is issued by a public water system when boiling water from that system will concentrate the identified contaminant to a level that could cause a health concern. Only bottled water may be used for drinking, preparing food, beverages, ice cubes, washing fruits and vegetables.
3. What is a Do Not Use advisory?
  - a. A do not use advisory may be issued if public health is at risk from contact or inhalation of contaminants or toxins in the water. Do not use water from the contaminated water source.
4. Why is a water advisory issued?
  - a. A water advisory is issued to protect the public from infectious agents (such as bacteria or parasites) or other threats (such as chemicals) that could be or are known to be present in drinking water.
5. What procedure should be used for a boil water advisory?
  - a. Place water in a clean and sanitized, heat-resistant container.
  - b. Place container on a stove burner, electric kettle, or in a microwave and bring the water to a rapid, rolling boil for at least one minute.
  - c. If necessary, cool water by placing in another sanitized container and store the container in the refrigerator.
6. What should restaurant, supermarket and food service managers do?
 

A food facility manager (or the "Person-in-Charge") is responsible for conducting both the initial and ongoing assessments to ensure consistent compliance with food safety requirements.

  - a. Assess food, water and ice in your facility affected by the advisory start date.
  - b. Implement the appropriate emergency procedures outlined below or remain closed until disinfection of contaminated items occurs and boil water advisory is lifted.
  - c. Immediately discontinue operations if a safe operation cannot be maintained using alternative procedures.
  - d. Follow all requirements for flushing lines and thoroughly clean and sanitize all food contact surfaces prior to resuming normal operations.
7. What should food establishments do to address a current boil water order?
 

The following are temporary alternative procedures that can be taken to address specific impacted food operations during a biological contamination of the water supply (boil water advisory). Where "boiled" water is indicated, the water must remain at a rolling boil for at least one minute. Large volumes of water should be brought to a rolling boil for at least three to five minutes. Although chemicals (e.g. bleach) are sometimes used for disinfecting small amounts of household drinking water, chemical disinfection is not an option for food establishments because of the lack of on-site equipment for testing chemical residuals.

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### After the Flood: Cleaning & Re-opening Requirements for Food Establishments

After a flood, the water supply may be contaminated and this can affect the health of persons living or working in the affected areas. All flood water should be considered contaminated! Food establishments must not re-open until safe water service is restored and the local health department approves re-opening.

ALL PROCEDURES MUST BE COMPLETED WITH POTABLE WATER (water that is safe to drink). POTABLE WATER MUST ALSO BE USED FOR HAND HYGIENE.

Once floodwaters have receded and it is safe to enter your facility:

1. First CHECK:
  - Safety of structure (follow instructions on any warning sign placed by the building department).
  - Safety and availability of electrical, natural gas, and power supplies.
  - Potable water (water that is safe to drink) supply and sewer system.
  - For presence of rodents, snakes, or insects.
  - With insurance company and/or licensed food salvager for possible recovery of loss.
2. Then REMOVE and DISCARD:
  - Food exposed to flood water or debris.
  - Any food that has an unusual odor, color or texture.
  - Potentially hazardous foods at temperatures in the danger zone: between 41°F and 135°F.
  - Perishable foods (including meat, milk, poultry, fish, eggs and leftovers) that have been above 41°F for more than 4 hours due to an electrical outage.
  - Canned foods contaminated by flood or waste water. You cannot ensure that all contaminants can be removed by washing and sanitizing.
  - Food containers with screw caps, snap-lids, crimped caps (soda pop bottles), twist caps, caps that snap-open and home-canned foods that have been contaminated by the flood or waste water.
  - Water and ice in icemakers, coffee makers and soda pop dispensers.
  - Water filters, purifiers, and beverage cartridges attached to equipment — replace with new filters after the cleanup and before beginning operation (this includes coffee makers, ice machines, carbonated beverage machines, etc.).
  - Damaged building items that are contaminated or porous and cannot be cleaned.
  - Frozen food that contains ice crystals and is 42°F or below can be refrozen or cooked unless contaminated by flood or waste water.
3. Then FLUSH and CLEAR:
  - All water lines and equipment connected to the main water supply for at least 5 minutes (this includes all sink faucets — both hot and cold water, drink dispensers, ice makers, drinking fountains, hose bibs, etc.).
  - Any blockage of floor sinks and drains.
  - Equipment drain lines (flush from the interior of the equipment).

May 2013

# Emergency Response Report

## IOWA DEPARTMENT OF INSPECTIONS & APPEALS

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### Emergency Response Report

Iowa Department of Inspections and Appeals  
Iowa Department of Inspections and Appeals  
Food and Consumer Safety Bureau  
321 E 12th ST FL 9  
Des Moines, IA 50319-0083

Date: 7/28/2019  
Time In: 8:39 AM  
Time Out: 9:35 AM

License/Permit: 67482 - Food Service Establishment License, 77879 - Retail Food Establishment License	Inspection Reason: Initial Response	Est. Type: FastFood, RetailConvenienceStore	Risk Category: Risk Level 2 (Low), Risk Level 1 (Very Low)
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<b>Response</b>	
1 Is the facility safe to enter?	YES
2 Can you confirm if the facility was impacted by the event?	YES
3 Can you verify if the facility is operating?	YES
4 Is the facility operating at partial or full capacity?	PARTIALLY OPERATING
5 Can a full assessment of the facility be completed?	YES
6 What date was the facility impacted?	3/18/2019
7 Did the facility received an alert from DIA?	NO
8 Does an imminent health hazard exist?	NO
9 Has potentially contaminated food been separated or discarded?	YES
10 Has discarded food been disposed of in accordance with city, county, or state guidelines?	YES
<b>Recovery</b>	
11 Does the facility intend on reconditioning products (i.e. cans, pouches, etc)?	NO
12 Has reconditioned food(s) been appropriately salvaged?	NA
13 Does a follow-up inspection need to occur at the facility prior to operation?	YES
14 What date does the facility intend to reopen?	9/29/2019
<b>Preparedness</b>	
15 Does the facility have an emergency operating plan?	YES
16 Did the facility follow their emergency operating plan?	YES
17 Has the facility's emergency operating plan been submitted to DIA for review?	NO
<b>Flooding</b>	
1 Has food, food service, and equipment been removed from production or use?	YES
2 Has municipal water service been restored?	NO
3 Did the facility clean and test their well water?	NA
4 Did the facility clean and sanitize all equipment, food and non-food contact surfaces, and structural components of the building?	YES
5 Is there any evidence of pest activity?	NO
6 Does the facility's menu require adjustments?	YES
7 Is the facility using Reopening a Food Establishment after Flooding guidance found on DIA's website?	YES

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### Emergency Response Report

#### Inspection Published Comment:

Initial response/re-opening inspection conducted in reference to Southwest Iowa flooding event. Facility was initially impacted by flooding on March 18th, 2019, and impacted again Memorial Day weekend. Facility is working with the Iowa Department of Natural Resources on approving their public water supply; facility is utilizing a tank system, with potable water being transported in from Sidney, IA.

Establishment was impacted in the following ways:

Approximately 18 inches of water entered the building. Facility lost power and water; is on private septic. Facility was completely gutted and remodeled, all food was discarded, fixtures, equipment, was discarded.

Establishment is ok to re-open, with the following provisions:

1) Public water supply must be approved by the Iowa DNR. Facility has submitted test results to Iowa DNR, and is awaiting final approval. Any instructions given by DNR for the monitoring of water tanks, to include testing for bacteria and coliforms, as well as set up, backflow prevention, must be supplied to inspector via email, and followed.

2) Currently establishment is utilizing restroom trailers. Restrooms must be maintained in clean and sanitary conditions.

3) Establishment is approved to sell pre-packaged beverages and snack foods only. Establishment has stated that they will NOT be offering coffee. Any changes to scope of operation requires inspector approval prior to implementation. A second pre-opening inspection may be needed.

4) There is about 75% of establishment that is still under construction, which is blocked off from retail area. The facility will have a new floor plan, with new fixtures. A copy of the plans must be submitted to office in Des Moines. Subway will still be located in establishment, as well as Pilot food preparation area.

Once construction for entire facility has been completed, with water supply restored, prior to re-opening and resuming normal operations, facility shall contact inspector for a pre-opening inspection. Contractor estimates facility will be ready in two months.

The following guidance documents have been issued:

Person In Charge

Inspector  
TENESHA STUBBLEFIELD

*Tenesha Stubblefield*

# Emergency Response Report

## Flooding

x

1 Has food, food service, and equipment been removed from production or use?

☐ N/O ☒ Yes ☐ No

2 Has municipal water service been restored?

☒ Yes ☐ No ☐ NA

3 Did the facility clean and test their well water?

☐ Yes ☐ No ☒ NA

4 Did the facility clean and sanitize all equipment, food and non-food contact surfaces, and structural components of the building?

☒ Yes ☐ No

5 Is there any evidence of pest activity?

☐ Yes ☒ No

6 Does the facility's menu require adjustments?

☐ Yes ☐ No ☒ NA

7 Is the facility using Reopening a Food Establishment after Flooding guidance found on DIA's website?

☒ Yes ☐ No

## Boil Order

x

1 Was the facility notified about the boil order?

☒ Yes ☐ No

2 Did the facility refer to the DIA's Boil Order and Advisory guidelines during the event?

☐ Yes ☒ No

3 Did the facility clean and sanitize all equipment after the boil order was lifted?

☐ Yes ☐ No ☒ NA

4 Did the facility flush water lines?

☐ Yes ☐ No ☒ NA

5 Did the facility restore direct water source equipment (i.e. ice machine, coffee pot, soda fountain, produce misters, etc.) according to the manufacture's guidelines?

☐ Yes ☐ No ☒ NA





# Glenwood - Loss of Water Treatment Plant

(PHOTO: BRIAN POWERS, CHELSEY LEWIS/USA TODAY NETWORK)

# Glenwood

WORKED WITH DNR TO  
DEVELOP GUIDANCE ON USE OF  
DISHWASHERS DURING WATER  
ADVISORIES.

ALSO VISITED SHELTERS IN  
GLENWOOD, SIDNEY,  
SHENANDOAH, AND COUNCIL  
BLUFFS TO PROVIDE FOOD  
SAFETY EDUCATION

WATER WAS RESTORED ON APRIL  
13<sup>TH</sup>.







## HAMBURG, IA – MAIN STREET





## HAMBURG MAIN STREET – UNDER WATER

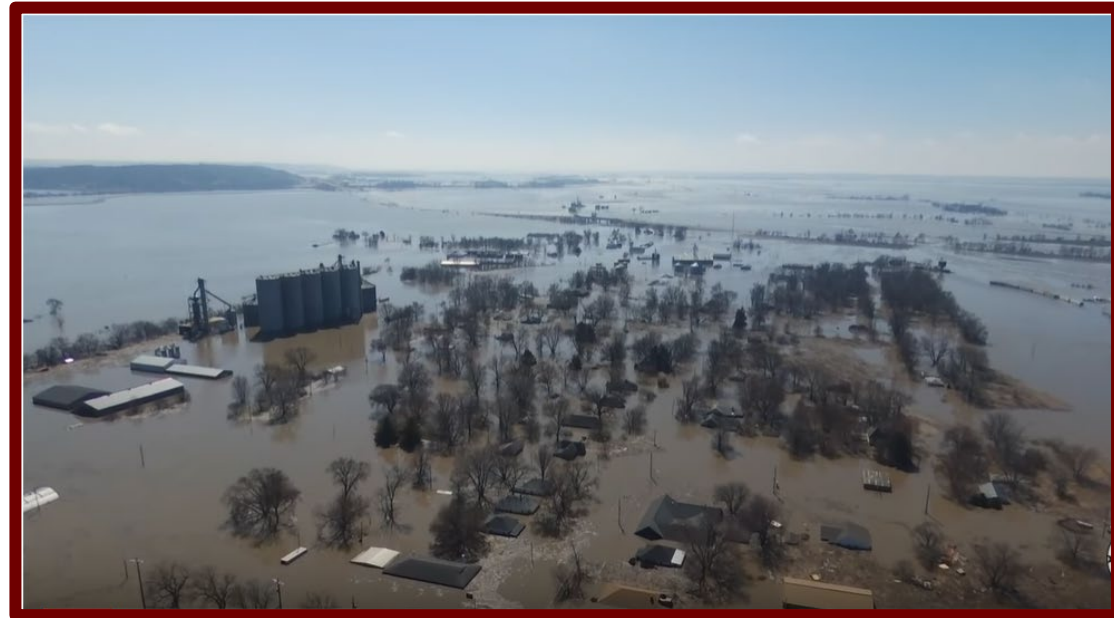


# Hamburg

**WATER WAS BROUGHT IN BY NATIONAL GUARD AND HOOKED UP TO HOSPITAL, SO HOSPITAL COULD REMAIN OPEN.**

**OTHER THAN THE SCHOOL AND A LARGE PROCESSING PLANT FURTHER NORTH ON MAIN STREET, MOST ESTABLISHMENTS IN HAMBURG WERE FLOODED.**

**MAY 23<sup>RD</sup>, WATER ADVISORY WAS LIFTED FOR HAMBURG.**







## PERCIVAL, IOWA – JULY 2018



# Percival – Flooded March 2019...



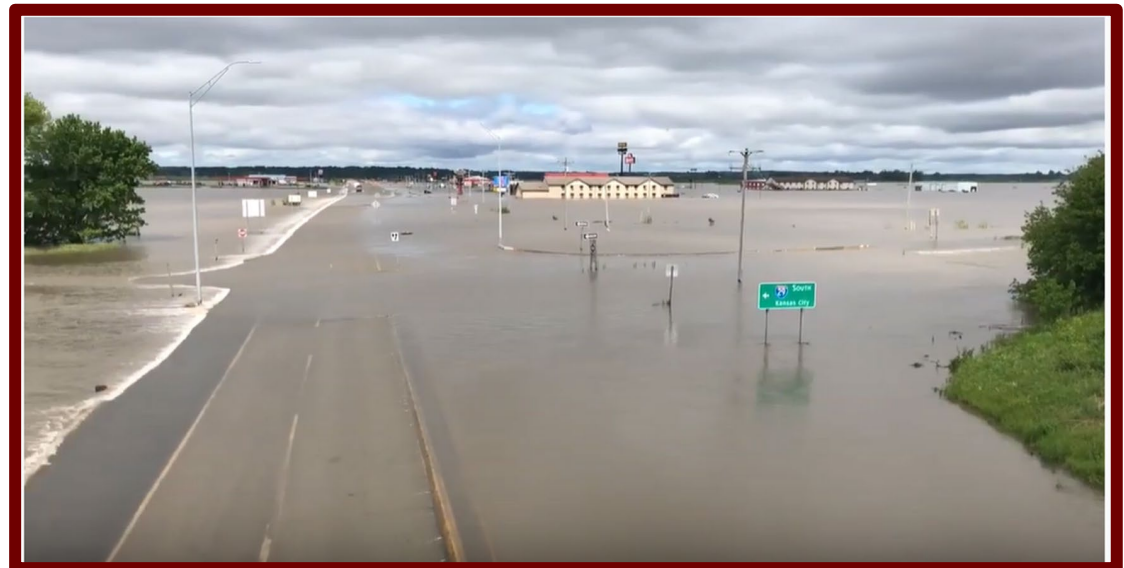


## ...and May 2019

**MAY 23<sup>RD</sup>, RAIN BRINGS WORRY  
OF NEW FLOODING**

**MEMORIAL DAY WEEKEND, MOST  
OF THE AREA RE-FLOODED.**

**END OF AUGUST, WATER SUPPLY  
WAS APPROVED FOR USE, MOST  
ESTABLISHMENTS WERE ABLE TO  
RE-OPEN IN EITHER LIMITED OR  
FULL CAPACITY BY MID  
SEPTEMBER**







## PACIFIC JUNCTION, IA



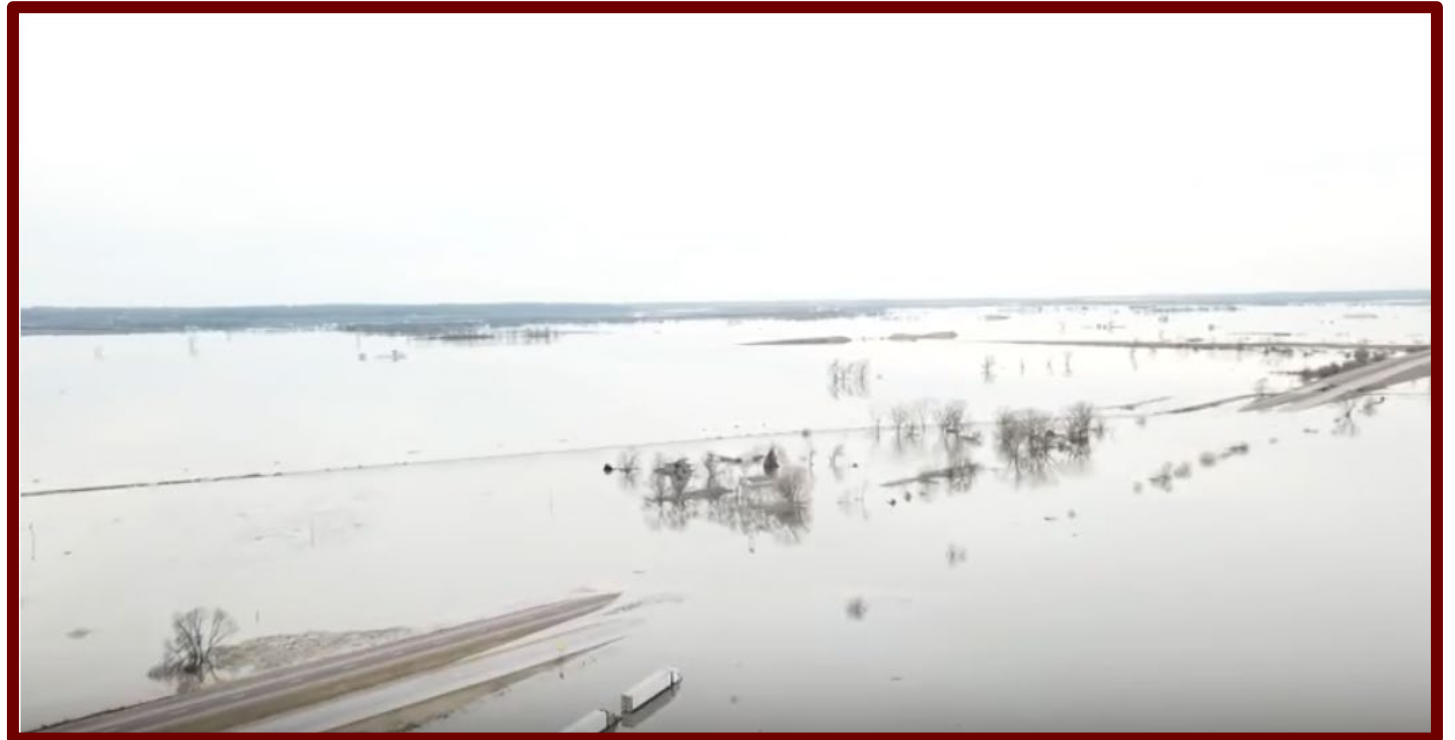
# Pacific Junction – Flooded March 2019...

TOWN OF PACIFIC JUNCTION  
WAS COMPLETELY FLOODED.

AREAS ALONG I-29 S  
CONSIDERED PACIFIC JUNCTION  
WERE FLOODED AS WELL.  
AREA LOST WATER, SEWER,  
POWER.

INSPECTOR WAS ABLE TO ENTER  
PACIFIC JUNCTION ON APRIL  
26<sup>TH</sup>.

MAY 8<sup>TH</sup>, WATER WAS RESTORED.





...and May  
2019

MEMORIAL DAY WEEKEND  
FLOODING AFFECTED  
ESTABLISHMENTS ALONG I-29 IN  
THE PACIFIC JUNCTION AREA.

MOST SEVERELY IMPACTED  
TOWN; TOWN MAY NEVER  
RECOVER.



# Current Status

## COMMUNITIES THAT HAVE RE-COVERED:

**PERCIVAL**

**HAMBURG (NORTH SIDE OF THE TOWN)**

**GLENWOOD (WATER TOWER IS NOW FUNCTIONAL)**

## COMMUNITIES THAT HAVE NOT RE-COVERED:

**HAMBURG (SOUTH SIDE OF TOWN)**

**PACIFIC JUNCTION (MOST OF THE TOWN)**



### ▶ Hamburg looks to lake development in flood comeback

Updated: May. 14, 2021 at 5:11 PM CDT | By Tara Campbell

A small town in Iowa is thinking big on its road to recovery from the 2019 historic flood, despite some setbacks.



### ▶ Flood-stricken Iowa town begins construction on long-awaited levee

Updated: May. 5, 2021 at 10:44 PM CDT | By Tara Campbell

A decade-long battle has come to end in Hamburg, Iowa, with the town set to get the levee they've been asking for in the aftermath of two major floods.



### Future of flood-stricken Iowa counties coming into focus

Updated: May. 12, 2021 at 11:32 PM CDT | By Tara Campbell

The future of two flood-stricken Iowa counties is coming into focus with state's economic development authority making stops in both this week.



# Current Status



## ▶ Demolition begins in Pacific Junction two years after historic flood

Updated: Mar. 18, 2021 at 10:20 PM CDT | By Tara Campbell

Demolition is underway in one Southwest Iowa town devastated by the historic flood that swept through parts of the Midwest in 2019.



## ▶ Heartland Flood: Pair of flood-stricken Iowa towns set to be wiped off map

Updated: Mar. 5, 2021 at 10:24 AM CST | By Tara Campbell

Nearly two years after historic floodwaters devastated the Midwest, a pair of small towns in southwest Iowa are on the brink of disappearing altogether.

# After Action Review

- ▶ **(+) Well organized and coordinated field response**
- ▶ **(+) Initial communication was efficient**
- ▶ **(+) Emergency contact list was helpful in accessing partners**
- ▶ **(+) Used SOP to identify point in the response when we stand up ICS or expanded ICS to include FDA**
- ▶ **(+) Daily activities were reported to provide to SEOC**



# After Action Review

- ▶ **(-) No formal procedure for providing information to other response sponsors**
- ▶ **(-) Impacted facilities list from FDA was not up to date or useful. Some impacted facilities were not identified on the list.**
- ▶ **(-) District partners participated in a call to discuss ICS stand up but did not realize that a unified command stood up until the first call**



# Improvement Plan and 2020 Flood Preparedness

- ▶ **Collaboration Meeting with DNR**
- ▶ **ICS stands up**
- ▶ **Develop Procedures providing information to response partners**
- ▶ **Impacted facilities list being more useful**
- ▶ **SEOC Preparedness Meetings**
- ▶ **Meeting with Local Contracts**
- ▶ **Updated SOPS and Guidance Documents**



# Acknowledgements

- ▶ **DIA staff – Mark Speltz, Julie Kraling, Kurt Rueber, Melanie Harris, Jennifer Pierquet, Scott Platt, Kim Miller, Thao Nguyen, Kayla Becker, Addison Boughton, Emily Wegner**
- ▶ **Iowa DNR – Keith Wilkens, Thad Nanfito, Ryan Young**
- ▶ **IA RRT Core Members: FDA, IDPH, SHL, IDALS**
- ▶ **Iowa National Guard**
- ▶ **Mills County/Fremont County Emergency Management**



# Thank you!

## Questions?

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