City of Austin and Travis County
After Action Report

Halloween Flood
October 30, 2015

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1.1.   Event Summary

The 2015 Halloween Flood was a Presidentially Declared Disaster affecting the City of Austin and Travis County that began during the pre-dawn hours of October 30, 2015. The resulting response led to a full activation of the Austin/Travis County Emergency Operations Center (EOC), Shelter, a Flood Assistance Center, and a Volunteer Resource Center.

Travis County Judge Sarah Eckhardt signed a Disaster Declaration at 5 p.m. Friday, October 30, 2015. President Barack Obama approved Federal flood assistance for Austin-area residents and businesses on November 25, 2015. The last day for individuals to register for FEMA flood disaster assistance was on January 25, 2016.

Severe weather of this magnitude was not forecast for this storm. As a result of torrential downpours and rapidly rising waters, three Travis County residents died.

However, lives were likely saved due to the lessons learned from the 2013 Halloween Flood, which allowed the City and County to identify 173 Corrective Action Plan items, of which more than 97 percent had been successfully completed before the 2015 Halloween Flood.

This flood caused damage to about 400 structures within the City limits, and at least 336 properties in Travis County. There were 440 low water crossings and other road closures recorded during the incident throughout the Capital Area Council of Governments (CAPCOG) region.
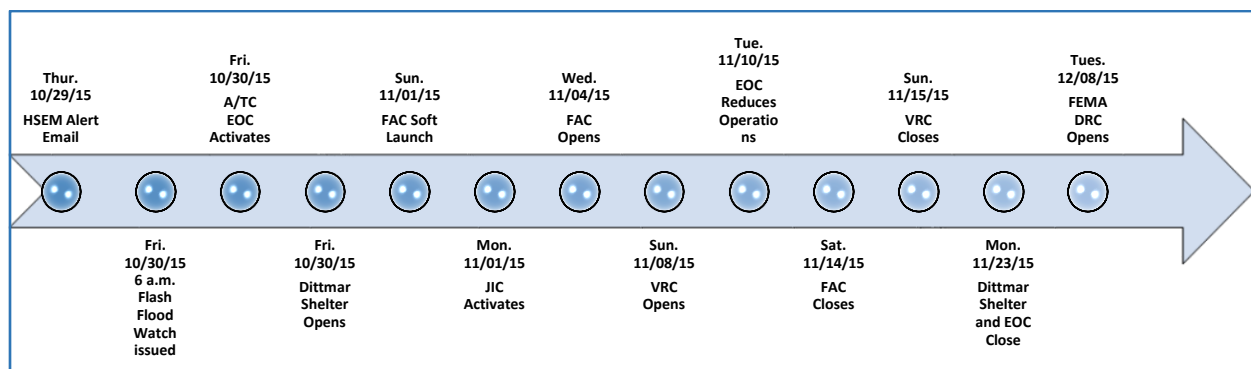
Timeline of key operations

1.2.   Overview of Disaster

On the afternoon of October 29, 2015, the National Weather Service indicated that rain severe storms were possible starting noon Friday, October 30, 2015 through 4 a.m. Saturday, October 31, 2015.

The forecast included widespread rain with 2 to 4 inches of rainfall totals expected over the timeframe, with 5 to 6 inches of isolated totals possible. The forecast included a minimal threat of severe thunderstorms, including a slight threat of tornadoes; however no severe weather watches were issued.

Beginning on the morning of Friday, October 30, 2015 – at 4:30 a.m. – the National Weather Service placed Travis County under a Flash Flood Watch until 10 a.m. The Watch was upgraded to a Flash Flood Warning at 6 a.m.

A National Weather Service Tornado Watch was issued at 6:07 a.m. By 10 a.m., Severe Thunderstorm, Tornado, and Flash Flood Warnings had been issued for Travis County.

At 10:14 a.m., a Flash Flood Emergency Warning was issued for Onion Creek, following 10 to 12 inches of rainfall. Various flood warnings and severe weather watches persisted through the next day.

River and rain gauges at multiple locations recorded historic or near-historic water levels.

Onion Creek at 183 subsequently climbed to a crest of 39.12 feet, which is more than 22 feet above flood stage and second only to its all-time crest of 40.2 feet set on Halloween in 2013. The two crests, almost exactly two years apart, are the only two that outrank the September 1921 flood at this gauge, dating to 146 years of record-keeping.

Unlike the 2013 Halloween Flood, which resulted from rain falling west of Austin and travelling down the watershed, the 2015 Halloween Flood resulted from rainfall that fell directly on Austin, creating spontaneous and unpredictably hazardous conditions. For example, the official daily rainfall total at Austin-Bergstrom International Airport (ABIA), located near worst-flooded neighborhoods, was 14.99 inches. The previous one-day record at ABIA was 8.70 inches, set on November 23, 1974.

1.3.   Austin Travis County Response and Recovery Summary

Nearly every City and County resource, department and office mobilized in some form to assist in the response and recovery phases of the disaster.

1.3.1.   Austin/Travis County Emergency Operations Center

The City of Austin Office of Homeland Security and Emergency Management (HSEM) sent a notice on Thursday, October 29, 2015 via email to all stakeholders advising them of the forecast. Stakeholder departments and agencies were requested to monitor the weather closely during this period and check their internal preparedness and be prepared for field or

Austin/ Travis County Emergency Operations Center response if needed. Stakeholders were also alerted that any issue could be relayed to the HSEM Duty Officer during this period.

At about 5:30 a.m. on Friday, October 30, 2015, personnel from Austin HSEM and the Watershed Protection Department – Flood Early Warning System began monitoring conditions from the Austin/Travis County EOC. Immediate communication and coordination began taking place between City and County first responders as conditions evolved and the National Weather Service issued a Flash Flood Warning at 6 a.m. The Austin/Travis County Emergency Operations Center activated at about 8 a.m. to coordinate the public safety response to severe weather.

Immediate response activities coordinated from the EOC included: monitoring and closing low water crossings, coordinating resources for safety road closures, swift water rescues, 9-1-1 operations, flood plain modeling and flood prediction, opening places of refuge at city facilities, power outages, floodgate operations, public transportation, public information, media relations, traffic collisions and shelter planning.

By 10 a.m. the Dittmar Recreation Center was staffed as the designated shelter for flood victims. By 11 a.m. evacuation operations in Onion Creek were underway, including emergency alerts sent by text, email and phone to affected residents.

The EOC operated continuously until 3 p.m. Sunday, November 1, 2015, when it shifted to a daytime schedule following a return to normal first responder operations. The HSEM Duty Officer continued to coordinate any issues that arose after-hours. On Monday, November 2, a City-wide Joint Information Center (JIC) was established to provide a single source for response and recovery information.

On November 10, 2016, the EOC reduced daily operations to logistical support for shelter, volunteer and assistance centers. Daily coordination conference calls continued to be held from the EOC until November 23, 2015.

1.3.2.   Dittmar Recreation Center Shelter

Beginning at about 9 a.m. Friday, October 30, 2015, Austin Parks and Recreation Departments began staffing recreation centers as places of refuge for flood affected or threatened residents. The City and County designated Dittmar Recreation Center as the overnight shelter for residents, in partnership with the American Red Cross. By 6 p.m., approximately 100 residents and their pets were sheltering overnight at Dittmar.

The Dittmar shelter remained open until Monday, November 23, 2015, at which time 46 guests and their pets were transitioned to other housing.

1.3.3. Dove Springs Flood Assistance Center

The Dove Springs Recreation Center opened on Sunday, November 1, 2015, in a limited role to provide flood-related information to area residents. City, County and community partners staffed on-site and immediate services included meals, crisis counseling, cleaning supplies pick-up and flood recovery information. Shuttle services from the Del Valle area and Onion Creek area were initiated in partnership with Capital Metro. The facility expanded to a full Flood Assistance Center (FAC) on Wednesday, November 4, 2015, registering almost 300 families for immediate financial, housing, repair permitting, child care, debris removal, and health and human services assistance that day.

Operations discontinued on Saturday, November 14, 2015.

1.3.4. Volunteer Resource Center

A Volunteer Resource Center (VRC) opened on Sunday November 8, 2015, as a coordinated volunteer effort to assist flood victims. The center provided a central location for interested volunteers to learn about and sign up for volunteer opportunities throughout the area. Volunteer opportunities continued throughout the week focused on clean-up, debris removal or other duties.

The Disaster Volunteer Resource Center discontinued operations on Sunday, November 15, when volunteer management transitioned to the Austin Disaster Relief Network (ADRN).

Approximately 300 volunteers participated in the combined volunteer effort.

1.3.5. State/Federal Disaster Assistance Centers

Following the Presidential Disaster Declaration, two State/Federal Emergency Management Agency (FEMA) Disaster Recovery Centers (DRCs) opened in the Austin/Travis County area on Tuesday, December 8, 2015, for homeowners, renters and business owners who sustained damage as a result of the severe storms, tornadoes and flooding.

Specialists from the State of Texas, FEMA and the U.S. Small Business Administration (SBA) were on hand to answer questions and provide information on the types of federal assistance available to flood victims.

The centers remained open for about a month.

In addition to these Disaster Assistance Centers, FEMA teams canvased the flooded areas, answering victim questions and assisting them in registering for Federal assistance.

Victims could also register for Federal assistance by phone or computer.

1.4. Agencies Involved in Response and Recovery

City of Austin Agencies	
Animal Services Office (ASO)	Communications & Public Information Office (CPIO)
Austin Community Emergency Response Team (CERT)	Communications and Technology Management (CTM)
Austin Energy (AE)	Controller's Office
Austin Fire Department (AFD)	Economic Development Department (EDD)
Austin Police Department (APD)	Fleet Services Department (FSD)
Austin Public Library (APL)	Homeland Security & Emergency Management (HSEM)
Austin Resource Recovery (ARR)	Human Resources Department (HRD)
Austin Transportation Department (ATD)	Law Department
Austin/Travis County Emergency Medical Services (EMS)	Neighborhood Housing & Community Development (NHCD)
Austin/Travis County Health & Human Services Department (A/TCHHSD)	Office of the Medical Director (OMD)
Austin Water Utility (AWU)	Parks & Recreation Department (PARD)
Austin 3-1-1 (311)	Development Services Department (DSD)
Aviation Department (ABIA)	Public Works Department (PWD)
Building Services Department (BSD)	Purchasing (FASD)
City Manager's Office (CMO)	Watershed Protection Department (WPD)
Austin Code Department (ACD)	
Travis County Agencies	
Travis County Transportation Nature Resources (TNR)	Travis County Judge's Office
Travis County STAR Flight	Travis County Medical Examiner's Office (ME)
Travis County Emergency Service District (ESD) 10	Travis County Health & Human Services (HHS)/Veteran's Services (VS)
Travis County Emergency Service District (ESD) 11	Travis County Precinct 4

Travis County Intergovernmental Relations (IRG)	Travis County Purchasing and Budget Office (PBO)
Travis County Parks and Recreation	Travis County Constable Precinct 4
Travis County Sheriff's Office (TCSO)	Travis County Justice Planning
Travis County Fire Marshall's Office	Travis County ITS Web Team
Travis County Office of Emergency Management (TCOEM)	Travis County Emergency Services (TCES)
Stakeholder Agencies	
American Red Cross (ARC)	Texas Gas Services
Austin Independent School District (AISD)	Volunteer Organizations Active in Disaster (VOAD)

1.5.   Acronyms

A/TC EOC	Austin / Travis County Emergency Operations Center
AAR	After Action Review or Report
ABIA	Austin Bergstrom International Airport
ACD	Austin Code Department
ADRN	Austin Disaster Relief Network
AE	Austin Energy
AFD	Austin Fire Department
AOC	Air Operations Center
APD	Austin Police Department
ARC	American Red Cross
ARR	Austin Resource Recovery
ART	After Hours Response Team
ATCEMS	Austin Travis County Emergency Medical Services
ATCIC	Austin Travis County Integral Care
ATXFloods	FEWS Flood Webpage
AWU	Austin Water Utility
CAD	Computer Aided Dispatch
CAP	Corrective Action Plan
CAPCOG	Capital Area Council of Governments
CapMETRO	Capital Metro Transportation Authority
CASH-P	Capital Area Shelter Hub Plan
CATRAC	Capital Area Trauma Regional Advisory Council
CERT	Community Emergency Response Team
COA	City of Austin

Code Red	Regional Notification System Software
COML	Communications Unit Leader
CP	Command Post
CPIO	Austin Communications & Public Information Office
CTM	Austin Communications & Technology Management
DEM	Texas Division of Emergency Management
DOC	Department Operations Center
DPS	Texas Department of Public Safety
DSD	Austin Development Services Department
EAP	Emergency Action Plan
EM	Emergency Management
EMC	Emergency Management Coordinator
EMS	Emergency Medical Service
ENS	Emergency Notification Service
ESD	Emergency Services District
FAC	Flood Assistance Center
FASD	Austin Finance and Administration Services Department
FEMA	Federal Emergency Management Agency
FEWS	City of Austin Flood Early Warning System
FSS	Family Social Service
FTE	Full-Time Employee
FY 2017	Fiscal Year 2017
GATRRS	Greater Austin Travis County Regional Radio System
GIS	Geographical Information Services
GIS-ERT	Austin Geographical Information Services - Emergency Response Team
HHSD	Austin-Travis County Health and Human Services Department
HOA	Homeowner Association
HRD	Austin Human Resources Department
ICP	Incident Command Post
ICS	Incident Command System
IGR	Austin Intergovernmental Relations Office
IMT	Incident Management Team
IT	Information Technology
ITS	Information Technology Service
JIC	Joint Information Center
JOC	Joint Operations Center
LCRA	Lower Colorado River Authority
LE	Law Enforcement
NGO	Non-Governmental Organization

NHCD	Austin Neighborhood Housing and Community Development
NWS	National Weather Service
PA	Public Assistance
PARD	Austin Parks and Recreation Department
PIO	Public Information Officer
POC	Point of Contact
ProCards	City Credit Card
PW	Austin Public Works Department
REACT	Radio Emergency Associated Communication Teams
RNS	Regional Notification System
RTCC	Austin Police - Real Time Crime Center
SAR	South Austin Regional Wastewater Treatment Facility
SBO	Austin Street & Bridge Office
SE	Southeast
STAR Flight	Travis County Shock Trauma Air Rescue Flight Helicopter
SVDP	Saint Vincent de Paul
TARG	Travis Austin Recovery Group
TC	Travis County
TCEQ	Texas Commission of Environmental Quality
TCOEM	Travis County Office of Emergency Management
TCSO	Travis County Sheriff's Office
TEEX	Texas Engineering Extension Service
TNR	Travis County Transportation and Natural Resources
TXDOT	Texas Department of Transportation
TxMF	Texas Military Forces
UASI	Urban Area Security Initiative
USGS	United States Geological Survey
VOAD	Voluntary Organizations Active in Disaster
VRC	Volunteer Resource Center
Web	World Wide Web
Web EOC	Web Emergency Operations Center
WPD	Austin Watershed Protection Department

2. City of Austin Focus Areas

2.1.   Methodology

The 2015 Halloween Flood impacted not only City and County residents but also City and County operations. An After Action Review is conducted after all disasters and major incidents. Due to the size and complexity of this incident, conducting this City/County-wide Review was a considerable undertaking. In preparation, each City department that participated in the Halloween Flood response was required to conduct an internal review and specifically analyze how their department/agency responded to the incident.

On Friday, January 15, 2016, HSEM provided a copy of a procedure and After-Action Report template to each department which outlined the process for conducting their Review.

The 2015 Halloween Flood Austin-Travis County After-Action Review meeting was held on Monday, February 8, 2016 from 9 a.m. to 3 p.m., in the Austin/Travis County Emergency Operations Center located at the Combined Transportation, Emergency & Communications Center (CTECC), 5010 Old Manor Road, Austin. At the meeting, each department/agency was allocated 5 up to 15 minutes to present their findings to the larger group. In the interest of time, they were asked to summarize their department/agency findings to the greatest extent possible. They were also asked to spend the majority of the time focusing on those areas with a City-wide impact, or those areas where issues crossed departmental responsibilities. Issues that did not have City-wide impact or were internal to one agency have been referred back to the respective agency for review and appropriate action.

This After-Action Review Meeting included representatives from City of Austin and Travis County departments and agencies. Travis County input was presented in a summarized form based on their internal After-Action meeting held on December 18, 2015.

The information presented during this meeting was used to develop the City AAR for the 2015 Halloween Flood.

The following five City Focus Areas were identified:
•   Communications and Notifications
•   Public Information
•   Response and Operations
•   Recovery
•   Plans and Procedures

Listed under each focus area are: (1) What worked well, (2) What needs improvement, and (3) What didn't work. A Corrective Action Plan (CAP) will be developed from the items that "need improvement" or "didn't work."

It is important to note that in any AAR, findings can occur that may appear to be in conflict. That is, there may be a finding stating that an item "worked well" and then later on in the report another comment may indicate that the same item either "needs improvement" or "didn't work". This is not uncommon, particularly for an AAR covering an especially large or prolonged incident. This is especially common in cases similar to this incident where individual departments/agencies conducted an AAR related to their own response to the incident (and found something that worked well) while another department/agency may find that in their particular response a similar item either needs improvement or did not work.

The end result is that items that worked well will be sustained and utilized in future incidents while those items identified as needing improvement or not working will be addressed either by individual departments or City/County-wide, as appropriate.

2.2.   Communications and Notifications

The Communications and Notifications goal was to facilitate emergency communications within and among all agencies. All departments are required to maintain their existing equipment and procedures to communicate with their field operations units. Departments are responsible to address communications issues in Standard Operating Procedures, Standard Operating Guidelines, Departmental Policies, or through other methods as appropriate.

Pre-Event Notifications: primarily reference internal notifications within the City to activate the EOC, schedule staffing, share situational awareness.

Communications and Notifications: relate to all communication channels relaying and disseminating information to and from the EOC.

Field Communications: this specifically focuses on all communications of responders in the field, the Incident Command post, and the EOC.

2.2.1.   Pre-Event Notifications

2.2.1.1. *Worked Well*

- The advance notices (the day before at 3:45 pm) of pending weather conditions helped prepare for the next day. (PW)
- Early activation of the Emergency Operations Center. (EMS)
- FEWS staff activated well in advance of the storm the afternoon and the evening prior to October 30, 2015. (FEWS)
- FEWS Field Operations staff activated very early in the morning of October 30, 2015. (FEWS)
- The EOC & DOC were both activated in anticipation of area flooding. (APD, AWU)

2.2.2.   Communications and Notifications

2.2.2.1. *Worked Well*

- ABIA Airside Operations provided in-depth briefings to stakeholders regarding the condition and status of ATC operations, airport runways, taxiways and aprons. (ABIA)
- ARR communicated with vendors to extend working hours. (ARR)
- EOC liaisons provided updates to Austin Energy EOC on the round tables information. (AE)

- City's Wireless Communications office provided "go-phones" for temporary use by case management staff. (HHSD)
- Availability of on-site bilingual (or multilingual) staff. (HHSD)
- Having FEWS provide regular updates helped communicate to field crews the status of predicted water elevations. (PW)
- The predictions of water elevations at water crossings were pretty impressive. This information helped guide crews to affected areas. (PW)
- Collaboration between AFD and FEWS members has led to quicker and better notifications prior to potential large scale flooding events and the development of detailed pre-planning and field operations maps.
  - Using FEWS personnel in the EOC, AFD was able to send real-time data to the various ICs that included: accurate flood level predictions, crest times, and specific flooded roadway locations for their areas of operations via MDC. (AFD)
- Proactively sent an email to HR Managers indicating a need for re-assigned employees would be forthcoming. (HRD)
- Conducted two conference calls with HR Managers city-wide to communicate the logistics needed for proper execution of re-assigned employee efforts.(HRD)
- Coordination and notification: FEWS notifying all of crest in Onion Creek at 1:30 p.m., giving first responders ability to evacuate people (that was really well done, including the immediate response from APD, AFD). (HSEM)
- There was no clear communication of transition from on call staffing for F1 to near full time staffing for this event. Nonetheless, staff was available for service within an hour of notification.

2.2.2.2.   Needs Improvement

- Better communication with Austin Energy Control Center and Austin/Travis County EOC for direct response requests related to airport public safety facilities affected by power failures. (ABIA)
- All EOC liaisons need to make sure to have their Web EOC logins before an event. (AE)
- Continued training of additional staff who can work as the Communications Unit Leader (COML) at the EOC. (CTM)
- Need to improve and enhance the system to provide timely information to City, County, State, and Federal officials. Additionally, this system needs to serve as a way for these officials to provide input to the EOC on their constituent concerns. (HSEM)
- Any documented contacts/ownership list from HSEM needs to be shared so that requests for HRD action are vetted and approved. (HRD)

- Re-assigned employees were unaware of the specifics of their assignments prior to the first shift. More detailed information is needed from HSEM to clarify roles and responsibilities. (HRD)

2.2.2.3. Didn't Work

- There was difficulty reaching the City Fleet On-Call field crews after operating hours. (AE)
- AE representative not included in field unified command during power restoration to Quicksilver area. (AE)
- City personnel using cell phones in the affected area had limited coverage depending upon their carrier. This issue was also present in the 2013 Halloween Flood. Due to the geography of the area, and different locations of provider cell towers, cell phones might not be reliable. This is the normal cell coverage in that area and it was not impacted by the flood. Key personnel should also be issued a radio in case their cell service is not reliable. (CTM)
- Regional Web EOC was inconsistent and inoperable at times. (PW)
- Requests by HSEM to put things into WebEOC, even though EMS was no longer actively involved in the shelter operations. (EMS)
- Purchasing responded as soon as notified however there seemed to be an expectation that we would have begun without any notification. (FASD)
- Communications with the affected Council District office:
    - There was a feeling of helplessness when responding to constituent questions particularly during the response phase, then during the beginning of the recovery phase.
    - There needs to be better flow of information particularly for CM's in affected Council Districts; possibly including CM's on status conference calls. (Council)
- There was no formal assessment at the EOC to determine and clarify bilingual requirements upfront. This caused miscommunication to departments on the need for re-assigned employees. (HRD)
- Current incident information was inaccessible due to a lack of authorized users of WebEOC. (HRD)

2.2.3.   Field Communications

2.2.3.1. Worked Well

- Issuance of radios based upon requests from logistics: All requests were met in a timely manner. An ICS 205 (Communications Plan) was created on Day 1 and it facilitated communication between groups. (CTM)
- Radio coverage in the affected area was good. (CTM)

- Radio communications and technology between all responders and command and general staff personnel was reliable, robust and dependable. (EMS)
- The system allowed for flexibility as the incident evolved. (EMS)

2.2.3.2. *Needs Improvement*

- Radio Infrastructure needs to be improved to minimize issues with repeating and crews being bumped. (AE)

2.2.3.3. *Didn't Work*

- Radios didn't work once they became saturated by rain. (APD)

2.3. Public Information

The Public Information focus areas included issues associated with providing timely and accurate information to the maximum number of citizens enabling them to take appropriate protective actions in order to minimize life and property losses.

Joint Information Center: included Public Information Officers (PIOs) from local government departments, other levels of government, volunteer agencies, and the private sector to help ensure message consistency.

Social Media and Public Outreach: includes the processes for the management and release of information to media outlets and the general public.

2.3.1. Joint Information Center (JIC)

2.3.1.1. *Worked Well*

- Interaction with the Joint Information Center (JIC) in the EOC. (EMS)
- The communications at the JIC vastly improved since Halloween 2013. The coordination between the Communications and Public Information Office (CPIO) and HSEM for the JIC was almost seamless. The JIC members are using Web EOC regularly and as it was meant to be used, and there is now a notebook with the various passwords for the City's social media accounts, including using MailChimp for news releases. In addition, tweets in English and Spanish were prepared in advance, so these could be easily sent as needed. (FEWS)
- Continue to execute standard operating procedure of no less than three City PIOs for any EOC activation, until the incident can be sized up. This was incorporated after the Memorial Day Flood. (HSEM/CPIO)
- Instead of a check-in table at the public meeting, it worked well to hand out registration cards for attendees to fill out without bottle-necking the entrance. (HSEM/CPIO)
- The availability of Quiet rooms at public meetings is effective. (HSEM/CPIO)
- APD security presence at the public meeting was not intimidating and included good gender and racial representation. It was also good that not a large police car presence was visible. (HSEM/CPIO)

2.3.1.2. *Needs Improvement*

- Develop a process for updating daily lists of agencies available at the Flood Assistance Center so that is easy for customers to find and interpret. (HHSD)
- It was unclear to city management and department directors when a JIC had been established. (HSEM/CPIO)

- The Media Relations Lead needs to know who the primary PIO contacts will be for each department. (HSEM/CPIO)
- Not all involved departments were included in the flyer distribution. (HSEM/CPIO)
- A meeting Logistics lead and meeting Design lead should be added as units to the Public Engagement section of the JIC. (HSEM/CPIO)

2.3.2. Social Media and Public Outreach

2.3.2.1. Worked Well

- Airport Communications staff sent Tornado Warnings to airport employees and tenants via Electronic Notification System (ENS) messages, and Public Address (PA) system announcements in the passenger terminal helped to keep passengers informed. (ABIA)
- Communication via Facebook and Twitter with passengers and general public. (ABIA)
- Pushing flood safety awareness and preparedness tips via social media. (EMS)
- Flood safety radio ads started airing on October 29, 2015. (FEWS)
- Partnerships with ATXfloods communities performed well. Since Halloween 2013 the majority of the surrounding counties to Travis County have been added into the system so that road closures within Central Texas could be viewed on the same website. (FEWS)

2.3.2.2. Needs Improvement

- The ABIA Public Information Office faced challenges in correcting misinformation reported by national media and numerous internet driven news sources. (ABIA)
- The City and County need to increase coordination and participation during the planning and execution of public meetings after a disaster. (HSEM/CPIO)
- Public meeting invites and announcements should clearly identify whether new information is being presented to affected residents who already visited an Assistance Center. (HSEM/CPIO)
- Mediators and facilitators at public meetings need a reliable system to take information from residents who approach them and seek resolution to unsolved issues. (HSEM/CPIO)
- No SOP for flyer creation, production and distribution. (HSEM/CPIO)

2.4.   Response and Operations

Operations and Response focus areas relate to the City of Austin's (COA) actions taken during the initial response to the event; with a focus on life safety and property preservation. These actions include responses from stakeholders as well as the EOC support of these responses.

EOC: The City and County EOC Directors manage EOC resources and operations in accordance with the EOC Standard Operations Guidelines and Position Checklists. In addition to operational oversight and resource coordination, the EOC provides situational awareness to stakeholders.

Resources: Any supply of materials, equipment, staff, or other assets that may be drawn upon to assist in mitigation efforts related to the adverse circumstances being managed.

Logistics: The process of procuring, ordering, sourcing, receipt, and tracking of any resource requests submitted to the EOC by any stakeholder.

Global Issues: Any report of action that applied to operations and response that effects the overall operation or response as a whole. These issues can be within a single department and have an effect on the overall operations and response or be related to the joint operations of one or more entities.

2.4.1.   Global Issues

2.4.1.1. Worked Well

- ARR extended services to provide daily debris removal and collection during response and recovery. (ARR)
- PW was able to quickly identify what locations would require repairs after the event. (PW)
- Early in the incident Unified Command was established between AFD, APD, and EMS. The ICP was moved to a "hardened structure" (AFD Station 24) which had:
  - Enhanced communications capabilities (e.g., landline phone, and multiple computers).
  - A dry, climate-controlled environment.
  - Support capabilities (e.g., kitchen, bathroom, and seating). (AFD)
- Actions and efforts were coordinated more effectively with representation from multiple agencies in an enhanced ICP facility. (AFD)
- Refined data and presentation of information on pre-planning and field operations maps increased effective deployment of resources prior to and during wide-area flooding events. (AFD)
- With past historic floods in the Southeast Austin area, AFD has implemented several service delivery model, equipment enhancement, and information

sharing changes that allowed for better response and management of the incident. (AFD)

- FEWS provided accurate information on storm surge for Onion Creek. (APD)
- Trained APD personnel on how to effectively use and interact with the FEWS system. (APD)
- FEWS has established a direct link with RTCC/Watch Commander. (APD)

2.4.1.2.   Needs Improvement

- Coordinate a shared list for PW SBO and Watershed to responding to low crossings. (PW)
- Not having a dedicated Air Boss physically located in the JOC. AFD and EMS members in the JOC (including their dispatchers) had a great deal of difficulty trying to coordinate with and pass information to the right person in order to prioritize allocation of aviation assets to the locations that particular resource was most appropriate for (i.e., immediate rescue situation that is inaccessible via ground or boat assets). EMS and other agency dispatchers are overwhelmed with the call volume, normal dispatching prioritization and procedures are unable to keep pace with the demand. (AFD)
- Better coordination between EOC, IC, Dump Truck Strike Team Leaders, and AFD dispatch to ensure consistent staging location(s), clear routes, and expected time-frames information were delivered to (in a timely manner) and understood by all. Ensure each truck has the appropriate number of operators (e.g., minimum of one driver and one evacuee assistance member) and ladders (e.g., one for the exterior of the vehicle and one for the inside of the dump bed) to ensure safe loading and unloading of evacuees. Increase awareness of this resource among AFD Company and Chief Officers. (AFD)
- Continued coordination between public safety agencies to enhance deployment procedures. (EMS)
- Asset allocation between the Incident Command Post (ICP) and the Joint Operations Center (JOC). (EMS)
- The single point of entry into South Austin Regional Wastewater (SAR) is still a problem. As previously identified in the October 2013 rain/flood incident, Fallwell Lane represents the single ingress/egress point for the SAR treatment facility. This roadway succumbed to the overflowing Onion Creek and washed out, causing damage to underground infrastructure and secluding the facility itself. As a result AW personnel were trapped within the facility and unable to receive assistance until flood waters recessed. Aforementioned physical damage on the premises was also a result. It should be noted that this roadway is not under the purview of AW though it causes issues for the utility. The improvement process is spearheaded through City of Austin Public Works Department. (AWU)

- Consider whether external man-made factors contributed significantly to this flood. (Council)
- Need to improve how we re-assign City personnel (e.g., shelter managers etc.); it appeared that a small number of personnel were getting the majority of assignments. (CM)
- Increase understanding of the importance for all operating agencies to send a "decision making authority level" member to the ICP and have all newly assigned resources check in with the Incident Command (IC) (via established systems). (AFD)
- FEWS continues to work with public safety agencies on communication and coordination issues as they pertain to flooding. In addition, as part of the Halloween 2013 Flood Corrective Action Plan, FEWS is in the process of selecting a preferred vendor for the Common Operating Picture solution. This solution is a map-based display that can be utilized at the Emergency Operations Center (EOC) that merges hydro-meteorological data, social media, and public safety data onto a timed map display. In this manner, much of the information of the FEWS as well as the on-going situational management information can be seen and evaluated by all first responders at the EOC. (FEWS)
- Field operations staff noted that during the flood event, service requests were received both via pager and the Austin 3-1-1 system directly to the City work order system, MAXIMO. In order to best handle the large volume of requests during the flood event, more than one individual was needed to dispatch investigators, maintain communications during each investigation, and update the service request status in MAXIMO. During the storm, staff observed that there were instances where multiple service requests were generated for the same service address. The recommendation was made for Austin 3-1-1 to investigate if it would be possible to screen active service request addresses to avoid confusion, double work, and contradictory reports of findings. (FEWS)
- As part of the Halloween 2013 Flood Corrective Action Plan, FEWS telemetry has been converted to the LCRA Open Sky telemetry. During the 2015 Halloween flood, the new telemetry system was not yet operational. However, as of January 2016, the system is fully functional and all city rain and stream gauges are reported on ATXHydromet.com. This is a much more robust system than the City's legacy telemetry network. (FEWS)
- As part of the Halloween 2013 Flood Corrective Action Plan, FEWS is in the process of selecting a preferred vendor for the remote hosting forecast mapping and modeling. In addition, the results of these forecasts will be incorporated into the Common Operating Picture map (FEWS)
- The first APD Officers on-scene need to quickly establish/join Command. (APD)
- Poor communications between AFD and APD resulted in duplicated efforts. (APD)

- Houses were checked and then re-checked. Houses that had been cleared were not marked off or identified resulting in resources checking areas that had already been cleared. (APD)
- No Purchasing representative reported to the EOC (AWACS page went out for all departments to send a representative) or participated in briefings (therefore they had to be notified separately; however, once notified, they were very responsive). (HSEM)
- All COA departments should share staffing burden during emergencies (e.g. FAC). (PARD)
- Increase number of people trained in the Incident Command System (ICS). Disasters affect the entire city and non-public safety agencies need to understand how ICS works and how their role in emergency response and recovery. Need a baseline level of emergency event support, particularly from non-public safety agencies. During the response and recovery phase there are not enough citywide resources provided to support the emergency. Basic ICS classes should be taken by more departments and all departments should understand their role and responsibilities during an event and should be able to provide key employees to support the event. These key employees should understand the Incident Command System and some should also take more advanced classes. (HSEM)
- Expand ICS training to non-uniformed staff that may be utilized during a large scale incident. This includes logistics and support staff. (EMS)
- Train additional uniform staff in position specific ICS roles. (EMS)
- Roadway access during high water conditions at south Emma Browning Avenue. (ABIA)
- Arterial highways and roadways integral to the airport became flooded, were impassable or closed until floodwaters receded. The flooding land locked the airport. Several comments received cited a lack of timely roadway condition updates from officials at the City of Austin and Texas Department of Transportation. Many airport workers were unable to arrive for scheduled shifts. (ABIA)

2.4.1.3. Didn't Work

- Without power, ABIA General Aviation leaseholders and their customers were unable to conduct business until power returned to service. (ABIA)
- Fallwell Lane was shut down very late in the event which caused some safety concerns. (AE)
- Better understanding of City/County jurisdictional boundaries and road closure responsibilities/services that can be provided during a disaster (e.g. Fallwell Lane). (AE)

- Miscommunications and lack of communication between responding departments (i.e. Watershed and PW SBO). SBO crews would respond to a location but the locations had already been closed. (PW)
- There were times when one department opened a low water crossing only to have the other department close the same location due to road damage. (PW)
- As the incident progressed some of the involved agencies began to leave the ICP to set up their own separate Command Posts (CPs), which was detrimental to effective coordination of on-scene resources and actions. This was eventually corrected via direction from the Emergency Operations Center (EOC). (AFD)
- Triage or prioritization similarities of rescue call types being dispatched between public safety agencies. (EMS)
- Improved understanding of donations management by community partners/NGOs and the gaps that the City could fill. (HSEM)
- The Austin Police Department (APD) Air Support Unit was unable to access APD helicopters parked at facilities on Emma Browning Ave, this delayed airborne responses by APD. (ABIA)

2.4.2.   Emergency Operations Center (EOC)

2.4.2.1. Worked Well

- Agency representatives initially sent to EOC were highly experienced. (HHSD)
- Assigning a tech to the EOC during initial activation with continued support while activated: This allowed EOC staff to concentrate on managing the event without being distracted by technical issues. (CTM)
- Timely response to EOC requests. (PW)
- The overall coordination with other departments to accommodate requests from the EOC worked well. (PW)
- Use of WebEOC by a majority of departments. (HSEM)
- Situation Reports were produced and distributed throughout the incident. (HSEM)
- TCOEM and HSEM personnel exceeded expectations. A limited number of staff members worked long hours over an extended period of time. (HSEM)
- CERT volunteers provided much needed assistance in the EOC, FAC, and VRC during this incident. (HSEM)
- GIS-ERT provided maps for agencies to identify the affected areas. (HSEM)

2.4.2.2. Needs Improvement

- Increase agency depth in EOC experienced/trained personnel. (HHSD)
- HRD needs to be involved in staffing immediately and maintain a presence at the EOC. (HHSD)

- Clear ICS organizational chart (clear chain-of-command) posted at front counter for all staff to review when City facilities utilized. (PARD)
- Create a map of current safe routes to-and-from the EOC when routes may be compromised. (PW)
- How to contact TxDOT's Point of Contact in the event they do not respond to the EOC. (PW)
- The EOC representatives were tracking requests via a spreadsheet which ultimately was used to perform follow up inspections after the event. (PW)
- The GIS Emergency Response Team provided valuable information during and after the event. However, HSEM needs dedicated staff to develop and maintain disaster related information before the event and to serve as the anchor for the GIS ERT during and after the emergency. (GIS-ERT/HSEM)

2.4.2.3. Didn't Work

- Due to a number of TxDOT managed roadways within the City/County, it's vital to have TxDOT's presence in the EOC. (PW)
- PW was unable to provide accurate road closure status, due to not having information on TxDOT roads. (PW)
- The large scale of the event did not allow for timely and accurate information to be provided to PW EOC representatives. (PW)

2.4.3.   Logistics

2.4.3.1. Worked Well

- Having the HSEM Logistics inbox that multiple people could use. (HSEM/TCOEM)
- Having a member from the Purchasing Office in Logistics. (HSEMTCOEM)
- Having multiple ProCards was effective, and increasing the limits was very helpful. (HSEM/TCOEM)
- HSEM staff did a great job with having all receipts for their ProCards and entering the info in Works. Keeping track of receipts when it's really busy saves a lot of time later. (HSEM)
- Having a template, rather than just a sign in sheet, for emergency ProCards worked well. A list of purchases needs to be recorded, and receipts need to be attached to the template. (HSEM)
- Logistics processes were smoother once the Purchasing department was notified of need. (HSEM)
- Having the logistics section in the room 320B worked out perfectly. (TCOEM)
- Having a member of Fleet services to make deliveries worked well. (TCOEM)
- The City has several contracts put in place to be used in events such as this, so once identified many items were able to be procured very quickly. (FASD)

2.4.3.2. Needs Improvement

- Requests for resources need to be prioritized by people in the field. Field personnel also need to communicate when resources have been received, are no longer needed, will be needed on a reoccurring, or on-going basis (re-supply). (PARD)
- There was initial logistical confusion in setting up the FAC (e.g., when food pallets arrived, staff wasn't initially available to direct placement; Council Member tried to assist and then there was conflict when staff arrived). (Council)
- Distribution of other supplies managed by ADRN should be made more readily accessible making flood victims get on a bus to get supplies was not optimum. (Council)
- The response list from the 2013 Halloween flood was unavailable so there wasn't a plan as far as what items were needed. For example, Rec Center was activated however no request was made before opening it for items such as showers or towels so by the time it was made, it was already past when it was needed. (FASD)
- Purchasing does not have a set plan including participants who can be called on in an event. (FASD)
- EOC doesn't have a central ship to location from which materials can be distributed to sites/shelters. (FASD)
- There doesn't seem to be a formal process in place for scaling down, so difficult to coordinate when the items or services are no longer needed and who has the authority to tell us. (FASD)
- Need to establish clear guidelines as to what logistics requests should be handled by the EOC, and what should be handled in the field at Shelters, Assistance Centers, VRC's etc. (HSEM)
- Continue to refine the Logistics processes and procedures to include processing requests; staffing (identify roles); tracking resources/requests; and purchasing procedures. (HSEM/TCOEM)
- Consider fully staffing the Logistics section to include all branches and units from the beginning of the incident. (HSEM/TCOEM)
- Finance/Admin staff should be assigned to the Logistics section. (HSEM)

2.4.3.3. Didn't Work

- A PARD EOC representative should integrated into EOC logistics to act as the single point of contact for all logistical requests coming from PARD facilities. (PARD)
- Purchasing staff needs better coordination with the EOC and the Logistics team to establish a clear ordering process. (FASD)

- When using a big box type store such as Sam's or Costco to meet bulk needs, the person making the purchase must have their own store card (i.e. Sam's Card). (FASD)
- Orders need to be requested with better paper documentation. (FASD)

2.4.4.   Resources

2.4.4.1. *Worked Well*

- Fleet's increased service schedule to keep trucks on the road. (ARR)
- Austin Energy was able to work with AFD Red Team to use a drone to patrol power lines. (AE)
- Crews pre-planned with crew members and assignments, including a schedule. (PW)
- Accountability and allocation of limited specialized resources (i.e., swift water rescue boats, evacuation boats, swift water technician level responders, and aviation assets) was more appropriately handled than in previous wide-area flooding events due to direct collaboration between AFD and EMS in the Joint Operations Center (JOC) and the inclusion of an AFD dispatcher physically located in the JOC. Better, more effective/efficient communication between the JOC and EOC also occurred due to increased staffing and more concise information and resource requests. (AFD)
- AFD happened to have 12 dispatchers present at the dispatch center (they were attending a training session) when the weather hit. Normal staffing is six (6). This allowed for far more calls to be handled by a dispatcher from the appropriate agency (AFD in this case) and far fewer calls having to be placed "in the que." (AFD)
- Due to having increased staffing during the event, AFD was able to assign dedicated dispatchers to directly assist several on-scene Incident Commanders with the high volume of calls within their Area Command, and advise them of new, higher priority calls as they presented. (AFD)
- Additional dispatchers were used to call back Lower Priority 911 callers to determine if assistance was still required. Frequently, the callers no longer needed assistance and these calls could be closed without sending vital resources to a lower priority call. (AFD)
- Ten City of Austin Street and Bridge 12-yard dump trucks were requested to be utilized as "high clearance vehicle" evacuation platforms for the period of time that flood waters were receding lower than the level appropriate for motorized boat operations (i.e., too shallow, propeller striking the ground) but still too high and rapid for pedestrian evacuation. Five of these trucks were effectively used to evacuate approximately 100 residents that were not in immediate danger (i.e., did not require rescue, could be protected in place) during the event, but needed assistance with evacuation when safe to do so. (AFD)

- Inflatable evacuation rafts that were purchased in FY14 were effectively utilized to evacuate numerous residents in the flooded areas by responders. (AFD)
- The rapid relocation of rescue resources by field command staff in response to a rapidly evolving situation. (EMS)
- All units had and staff utilized issued swift water personal protective equipment. (EMS)
- When conditions presented a credible threat to personnel and/or delivery of service, the Assistant Director for Treatment promptly ordered activation of the AW DOC to coordinate the utility's response. The recognition of these adverse conditions and decision to activate the DOC were helpful in establishing a sound basis for response command and control. The DOC/EOC interface worked well for sharing situational intelligence. (AWU)
- The use of department vendor contracts for response efforts.
  - Pre-established vendor contracts, specifically IDIQ (Indefinite Duration Indefinite Quantity) contracts with support vendors proved very beneficial for response resources. These contracts were used to provide personnel and equipment assisting response efforts which helped to keep AW resources focused on maintaining utility operations and providing critical services. (AWU)
- FEWS provided maps of forecasted floodplains and forecast times to AFD. (FEWS)
- All computer servers pertaining to FEWS services, including database of rain gauges and forecast mapping all remained on line and performed well during the event. (FEWS)
- The USGS hardening of several gauges after the Halloween Storm of 2013 worked extremely well. There were no issues concerning these gauges. (FEWS)
- Flashing lights and warning lights at low water crossings functioned properly. (FEWS)
- The forecast models worked extremely well for the event. In addition, the forecast models were updated since the Halloween 2013 Flood to incorporate forecast rainfall information from the NWS. (FEWS)
- "Safe Havens/Places of Refuge" locations were set up quickly and effectively throughout the incident. (APD)

2.4.4.2. Needs Improvement

- Consider life jackets and throw-buoys in city vehicles. PW SBO has twice taken the opportunity to save lives while in route to job sites. (PW)
- Purchase additional barricades (Type I and IIIs) as a contingency and preparation of large events. (PW)
- Additional inflatable evacuation rafts should be purchased to increase capabilities to evacuate large populations during wide-area flooding events. (AFD)

- Better utilization of initial resources based on pre-event knowledge from GIS and FEWS. (APD)
- A larger cache of cables, switches, printers, and power strips in deployable kits. (CTM)
- Develop improved signage that can be produced and posted during shelter, FAC, or other response efforts. (HHSD)

2.4.4.3.   Didn't Work

- Identification of level(s) of response resources to assign to various rescue call types. (EMS)

2.5. Recovery

The Recovery focus area encompasses those specific actions related to the assessment of damage, the management of incident caused debris, sheltering displaced persons, establishing assistance center(s), and volunteer operations including the establishment of Volunteer Recruitment Center(s). After immediate lifesaving activities are complete the focus shifts to assisting individuals, households, critical infrastructure and businesses in meeting basic needs and returning to self- sufficiency. Short-term recovery is immediate and overlaps with response with some activities lasting for weeks. Long term recovery, may involve some of the same short-term recovery actions but may continue for months or years.

Damage Assessment: Primarily a short-term recovery function that begins during the response phase and is the basis for determining the type and amount of State and/or Federal financial assistance that will be available to facilitate long-term recovery.

Debris Management: Major disasters can generate enormous volumes of debris in short periods of time. Debris clearance, removal and disposal operations must be implemented quickly to protect public health and safety of the local population.

Shelter Operations: An intermediate shelter was established at the Dittmar Recreation Center to provide shelter and mass care to persons displaced by the flood. The Shelter was opened on 10/30/2015 and closed on 11/23/2015.

Local Assistance Center: The City of Austin activated the local assistance center, named the Flood Assistance Center (FAC), to provide assistance to the affected community. The FAC provided a centralized location for services and programs, disaster information, and resource referrals for unmet needs following this disaster. The FAC was established at the Dove Springs Recreation Center, staffed by various government agencies and non-profit service providers, and provided social services and assistance to those impacted by the flood.

Volunteer Operations: Departments within the City of Austin (COA) utilize a web-based, online Volunteer Management System (VMS) called Volgistics to recruit, manage, track, and coordinate volunteers who support the departments' activities and efforts. Volgistics supports the daily operations of City departments as well as the City's response to disasters and emergencies. A Volunteer Resource Center (VRC) was established at Crossroads Christian House of Prayer at 5201 E. William Cannon Dr., to register spontaneous volunteers and to aid the citizens in the affected areas. The Volunteer Resource Center was exclusively designed to register and track all volunteer efforts that are led by government and non-governmental organizations (NGO's).

2.5.1. Damage Assessment

2.5.1.1. *Worked Well*

- Utilizing iPads and riding in teams improved response time and enhanced familiarity with the area. Utilizing technology also helped streamline communication with 3-1-1. (ACD)
- Computerized damage assessment system employed by ACD provided seamless system to assess damage. Categories of damage matched FEMA categories, which supported State and Federal assessments. (HSEM)

2.5.1.2. *Needs Improvement*

- Need to know what locations sustained damaged and the type of damage to determine which department (Watershed or PW SBO) needs to respond. (PW)
- Improve identification of internal and external SPOCS. (ACD)
- Affected flood areas were not always visible or identified on the map. (ACD)
- Better coordination with Watershed on flooded areas. (ACD)
- Code Officers lacked the collateral material to provide additional resources and education to residents. (ACD)
- Translation services needed at the resource center and in the field. (ACD)
- Training on iPads prior to assess properties i.e. GEO tracking. (ACD)
- Cell phone and radio communication. (ACD)
- Finance: start date and end date for documentation. (ACD)
- Create unique placards during flood incidents. (ACD)
- Windshield survey conducted first. (ACD)
- Designate an area for flood equipment. (ACD)
- Create an ACD Emergency Committee or Emergency Coordinator Position. (ACD)
- Develop an emergency call list, organization chart and contact sheet. (ACD)
- Resource list for residents impacted. (ACD)
- Emergency training. (ACD)
- There needs to be a balance between maintaining security in a neighborhood and allowing service providers/volunteers into the affected area to support clean-up and repairs. (Council)
- Many FAC services were dependent on a completed Damage Assessment. Some County residents were not able to access all services at the FAC due to not having a completed damage assessment for their property. (HSEM)
- City and County damage assessments were handled through different systems which made it difficult to compile County-wide data. (HSEM)

2.5.1.3. *Didn't Work*

- There wasn't a plan to control areas outside of the impacted flood area. (ACD)

- ACD daily placards did not work. (ACD)

2.5.2.   Debris Management

2.5.2.1. Worked Well

- ARR acted as the lead organizer for debris removal; having a single point of contact within ARR for crews from other departments worked very well. (ARR)
- Staff determined which areas to collect and received all weight tickets in order to collect all pertinent information. (ARR)
- During the Debris Removal process there were no safety issues/injuries were reported. (ARR)
- Access to the old Home Depot site for a temporary dumpsite reduced travel time. (ARR)
- Communication between ARR and PARD Forestry went more smoothly than during the Memorial Day flood event. Timelines and staffing expectations were clearer, and we had better success determining day-to-day needs. (PARD)
- PW SBO crews ability to respond to repairs after the event. (PW)

2.5.2.2. Needs Improvement

- Additional coordination may be necessary prior to start of future recovery effort, so that responsibilities and expectations are clearly outlined for agencies/personnel involved in recovery. (ARR)
- Clean-up efforts need emphasis. (Council)

2.5.2.3. Didn't Work

- WPD Grow Zones, research projects, and other environmentally sensitive areas need to be identified before flood cleanup activities begin. (PARD)

2.5.3.   Flood Assistance Center (FAC)

2.5.3.1. Worked Well

- Customer Care had a Spanish speaker at Dove Springs which was very helpful. (AE)
- Leadership present at FAC had experience (2013 Halloween Flood). (HHSD)
- Shelter and FAC utilized ICS (vests, ICS chart, scheduled briefings, etc.). (HHSD)
- Guidance developed after 2013 Halloween Flood helped prepare staff for both sheltering operations and the FAC. (HHSD)
- Separation of the Shelter and Flood Assistance Center locations. (HHSD)
- Web page from 2013 Halloween Flood response was easily updated and proved useful. (HHSD)

- Communication with ARC regarding services was more efficient as compared to the 2013 Halloween Flood. (HHSD)
- Crisis Intervention Team from ATCIC helped tremendously at FAC. (HHSD)
- Council Member requests were quickly addressed after initial setup at the Flood Assistance Center. (Council)
- Using a facility that had access to the Internet and electric power. (CTM)
- Having laptops available from an emergency cache was beneficial. (CTM)
- Receiving support from other agencies to acquire resources like tents and trailers worked well. (CTM)
- Use of remote access through Citrix for staff that did not have access. (CTM)
- Use of radios to communicate at the FAC. (CTM)
- NHCD and HHSD representatives designed a social services/case management response procedure in order to address emergency events. This model was deployed during the 2015 flood event. The model requires that all intake activity be channeled through the Health and Human Service case management intake process so that a comprehensive assessment can be administered for each resident that has reached out for City of Austin social services to include housing assistance or services. This ensures a single point of entry for social services case management needs and provides a holistic approach to better address the short and long term needs of each resident. It also provides a single point of contact and the ability to establish a case manager for each household. This allows for a more efficient way to identify resources in order to provide case management assistance because the flow of information is being maintained in a comprehensive manner by a case management entity trained and skilled in providing continuity in care and communications to the client. Coordination in these efforts between HHSD and NHCD staff worked well. (NHCD)
- The response to the magnitude of community services needs identified during the Dove Springs flood event (housing, legal issues, health and mental health concerns, utility assistance, furniture and food assistance) required multiple agency responses – immediately – including those in the private, public and nonprofit sectors. NHCD, through its existing contractual services and existing business relationships with nonprofit agencies to include affordable housing providers, were able to connect residents with services in a relatively short amount of time. A crucial partner in NHCD's long-term recovery efforts is the Home Repair Coalition, which includes numerous nonprofit agencies with expertise in home repair services as well as expertise in administering federal and local funding sources. The Home Repair Coalition is a key factor in the City's capacity to assist with home repair needs at the time of this disaster. The Home Repair Coalition had a consistent presence at the Flood Assistance Center and community events. The presence by the nonprofits that comprise the partnerships was unwavering and served to educate the community and offer capacity at times when staffing levels were waning. (NHCD)

- NHCD employees support HHSD social services case management personnel to identify an inventory of housing units – both subsidized and market rate housing to include multifamily and single family dwellings. This allowed for crucial ongoing connection among both departments' team members vetting client issues that required ongoing trouble shooting in order to identify solutions to move households from the Shelter to more stable housing. Although NHCD can skillfully develop housing inventory options for individuals in search of housing options, staff is not trained in the very specific role regarding housing navigation services and expertise. This role involves seeking additional services as needed to guide and navigate the employee through the many barriers one faces in order to obtain and secure stable housing. This includes navigating a range of issues and securing housing for individuals whom may not be housing ready. Housing navigators possess social service knowledge with comprehensive knowledge of community resources essential to address households' needs when these barriers exist. HHSD's expertise overseeing case management is supported by NHCD personnel. (NHCD)
- Citizens were able to ask questions and get answers about the repair and permitting process immediately after the flood. (DSD)
- As soon as the computers were in operation, the Permit Center Staff was able to issue permits on site, in that way customers had assistance in a location closer to their area and did not had to drive downtown to get permits. (DSD)
- Need to establish bench depth in the back up personnel used in Command positions at the FAC, or other operational sites. (CM)
- Flood Assistance Center and Shelter at separate locations. (HSEM)
- ICS Command at FAC. (HSEM)
- PARD support was phenomenal (Rec Center Staff, Rangers, Executive staff). (HSEM)
- Transportation Department provided great support with cones and signs. (HSEM)
- Daily Incident action plans/Situational briefings. (HSEM)
- EOC conference calls. (HSEM)
- Voice over IP phone system made it very easy to add extensions to existing system. (HSEM)
- Radios and Cell phones provided by the Wireless Office. (HSEM)
- Bilingual city staff to support FAC operations critical. (HSEM)
- ADRN presence in early stages of event was critical and filled gaps. Utilizing COA damage assessments was brilliant. (HSEM)
- On-Site PIO, IT, Medical, and LE. (HSEM)
- Tents from RR and US Fish and Wildlife and CATRAC trailers were essential. (HSEM)
- Having veteran (experienced) designees at key positions who knew their role and knew what to do. (HSEM)
- Overall Department coordination and cooperation. (HSEM)

2.5.3.2. Needs Improvement

- Assign "flow monitor(s)" in response centers to prevent "bottlenecks" and ensure access to services in the FAC. (HHSD)
- There needs to be better coordination/collaboration between response agencies and Non-Governmental Organizations in the FAC. (HHSD)
- AFD interaction/tone with citizens at the FAC needs improvement. (Council)
- Need a purchasing person assigned to the FAC to work with logistics officer to make expeditious purchases. (HSEM)
- Need a single electronic method of tracking logistics requests (Web EOC, SharePoint). (HSEM)
- FAC Operations Branch needs to be provided with a standardized data set at the beginning to report needed data to FAC Command that can be submitted to EOC. (HSEM)
- Need a cadre of city and county staff that can fulfill ICS roles at the FAC. Relying on Public Safety could be problematic in the future due to availability. (HSEM)
- Work with American Red Cross (ARC) to accept COA damage assessments, so ARC can deliver services quicker at the FAC. (HSEM)
- There needs to be a standard process of intake/case management between the City, County, ARC, and other service providers. Perhaps triplicates form with each agency getting a specific color. (HSEM)
- 3-1-1 was underutilized and can be leveraged to provide more information to citizens. (HSEM)
- Cell phone coverage and Internet Service at Dove Springs continues to be problematic. (HSEM)
- Capital Metro ridership was low. Need to look at other forms of transportation (Taxi, Uber, Lyft, PARD/Fleet, etc.) that can be utilized. (HSEM)
- To better utilize resources, attempt to utilize existing bus routes and provide passes, rather than create new bus routes during these events. (HSEM)
- All materials used for FAC operations need to be in English and Spanish from the beginning of the operation. (HSEM)
- Need to be better organized and have the command structure fully set up before opening the FAC. (HSEM)
- Need to maintain COA sign templates so that appropriate signs can be printed and ready for use on Day 1 of the event. (HSEM)
- City Departments involved in recovery operations (Shelter, FAC, VRC) need a higher level of ICS training for supervisors and personnel. (HSEM)
- Need to establish operating guidelines for NGO's and other stakeholders providing services at the FAC. (HSEM)
- Communications between FAC and EOC and roles need to be more clearly defined. (HSEM)
- Citizens may not know whether they live in the City of Austin, other incorporated areas, or in unincorporated Travis County. Disaster Recovery Centers need to be

operated jointly with the Austin and Travis County. If they are not jointly operated, appropriate representatives from both organizations need to be at each center to ensure that citizens can receive available support, regardless of where they turn. (TCOEM/HSEM)

2.5.3.3. Didn't Work

- PIO role is not limited to handling the media, needs to include outreach and identification of what should be handled on-site. (HSEM)
- Need to identify new designees for key positions that can fill roles during next emergency. (HSEM)
- Development of Assistance Center Plan that addresses flow of citizens, signage, volunteer needs, resources, etc. so that we do not have to reinvent the wheel each time. (HSEM)

2.5.4.   Shelter

2.5.4.1. Worked Well

- PARD staff went above and beyond to assist residents with assortment of needs (PARD)
- Organized and implemented activities to keep children entertained. (PARD)
- Dealt with shelter and facility needs as they arose:
  - Organized work schedules, job duties, supply orders, trash pick-up, shower facilities, laundry facilities, bus passes, school bus pick-up and drop-off, facility repairs, etc. (PARD)
- APD Victim Services Offered counseling for shelter personnel and shelter guests. (PARD)

2.5.4.2. Needs Improvement

- There needs to be better understanding by COA, PARD, APD, ARC and other entities, regarding shelter operation responsibilities in the CASHP model. (PARD)
- More shelter staff should be trained before an emergency occurs. (PARD)
- One daily meeting is not effective in reaching all shelter guests. Guests are gone at different times for jobs, appointments, etc. (PARD)
- Establish a clear process for ending shelter operations:
  - Communication with residents
  - Shuttle service provided to new residence
  - Making sure all equipment is taken or returned to owners
  - Red Cross close-out
  - Deep cleaning of facilities
  - Facility repairs (PARD)
- Need for standardized documentation regarding shelter services:

- - - Standard sign-up schedule for showers
  - Laundry sign-up template
  - Staff schedule template--roles that need to be filled (child care, phones, lead, translators for desk and phones, custodial duties)
  - Policy for taking resident/animal counts and submitting
  - School Bus Routes (HHSD)
- Need to better anticipate needs in the shelter.
  - Should have towels, toiletries, etc. ready at the beginning. ARC has access to a credit card to make these purchases, but there was a delay due to ARC staff not being aware of this ability.
  - The City should have a contingency plan to backing up ARC staff not being aware of this ability. (Council)
- APD presence at the shelter seemed late in being established. (Council)
- Shelter Managers need to come from a larger pool of personnel so the same people aren't overused. (HSEM)
- Not having access to separate rooms at the Shelter made it difficult to separate shelter guests who experienced medical issues. (HSEM)

2.5.5.   Volunteers

2.5.5.1. *Worked Well*

- Agency Coordination with non-governmental organizations through VOAD, was a benefit to the City of Austin, which allowed access to more resources. (HSEM)
- Volunteer resource center (VRC) set-up occurred within 72 hours, including identifying the facility, and ordering all of the logistical supplies. (HSEM)
- The transportation plan was thorough and our partners understood their role. (HSEM)
- REACT (Radio Emergency Associated Communication Teams) and Amateur radio operators provided communications in the field for our team leads. (HSEM)
- All paperwork at the registration table was printed and organized appropriately. (HSEM)
- CERT volunteers provided the safety briefing to all spontaneous volunteers. (HSEM)
- HSEM Director requested for the State VAL to assist with initial set-up of the VRC. (HSEM)
- Mercy Chefs provided wholesome breakfast, lunch, & dinner. (HSEM)
- The Austin Disaster Relief Network (ADRN) secured the facility for the VRC. (HSEM)
- The Crisis Clean-up database tracked all of the homes that had been affected, and it was crafted for multi-agency use. (HSEM)

- Field Logistics – tools were delivered in a timely manner. (HSEM)
- Multi-colored wrist bands were used to differentiate between days that volunteers worked in the field. This was used as a safety mechanism. (HSEM)
- The Austin Christian Fellowship (ACF) provided excellent customer service, administrative assistance for registration, filing, copying and data entry while the VRC was operational. (HSEM)

2.5.5.2.   Needs Improvement

- Any formal, documented contacts/ownership list from HSEM needs to be shared and communicated broadly so that requests for HRD action have been vetted and approved through the identified source. (HRD)
- Information was available regarding EAP services for re-assigned employees, but it was not distributed. (HRD)
- Re-assigned employees were unaware of the specifics of their assignments prior to the first shift. More detailed information is needed from HSEM to clarify roles and responsibilities. (HRD)
- Individuals who were assigned to Dove Springs did not always know who was in charge. (HRD)
- Volgistics self-assignment module is not designed for "reassigned employees" in an emergency situation, but rather for "volunteers."
- Have Shelter Management Training through HSEM on a more frequent basis (e.g., twice yearly). We were working off a dated list and some people were no longer able to participate due to current position, but training is only annually.
- Communications between partner agencies to confirm the plan for set-up and resources. (HSEM)
- Clear understanding between municipality and NGO's on command. (HSEM)
- Identifying Documentation Chief. (HSEM)
- Identifying data entry chief for crisis clean-up. (HSEM)
- Crisis clean-up development for City of Austin (How are we going to use database). (HSEM)
- Stream-line data management process to increase efficiency. (HSEM)
- REACT should receive early notification for set-up. (HSEM)
- Better stakeholder representation in VRC planning. (HSEM)
- Future Volunteer Resource Centers need to be established in actual facility in the event of inclement weather. (HSEM)

2.5.5.3.   Didn't Work

- Due to initial confusion over the licensing and certification process, mobile food vendors such as Mercy Chefs (Mobile Disaster Food Kitchen) received food inspections multiple times every day. (HSEM)

- We did not have full knowledge of employees working in re-assigned roles due to council staff and others who had been independently re-assigned. (HRD)

2.5.6. Finance

2.5.6.1. Worked Well

- Reporting codes established promptly. (HSEM)
- FASD was very responsive in activating emergency ProCards, and raised their limits. (HSEM)
- There was better coordination between operations and finance on Preliminary Damage Assessments. (HSEM)
- Departments assessed their damages well and reported them promptly, and they were meticulously tracked by HSEM. (HSEM)
- Online repository of disaster documentation. (HSEM)
- City's procurement and contracting processes. (HSEM)

2.5.6.2. Needs Improvement

- There needs to be a consistent level of effort citywide in providing accurate records of work completed during response and recovery operations. (HSEM)
- Debris monitoring contracts need to be utilized. (HSEM)
- Disaster contingency contracts need to be prepositioned and ready before a disaster. Large contracts can take up to 6 months to put in place. Also, it would be helpful for Logistics to know what pre-existing contracts there are that can be utilized. (HSEM)
- Departments often have no primary coordinator for cost recovery. Each department needs to identify one (1) lead POC who has overall knowledge of damages and repairs and can speak to FEMA about them, and one (1) coordinating POC who is responsible for coordinating the gathering of detailed estimates, getting Project Worksheets approved, and compiling and submitting backup documentation for that department. HSEM needs one (1) person to contact in each department (the coordinating POC) who is then responsible for making sure that requests for information and documentation are followed up on. (HSEM)
- Recovery is a back burner item; it falls under "other duties as assigned". For many departments, recovery is an additional task, and it is very onerous. This leads to two problems:
  - There is no top-down directive to participate in recovery and so it is a low priority item for many. This frustrates FEMA who can't move ahead on projects and it ties up a lot of HSEM time making multiple requests for the same information.

- o Many departments really try their best at compiling the information needed but it is a great strain that lasts several years. For departments that bear the brunt of the labor, they need to be given access to assistance – whether a temp, an intern, or a contractor. (HSEM)
- There needs to be internal auditing of documents. Not having a central audit function, means that we will receive findings from outside audits and this jeopardizes the City's financial standing and our ability to receive future grant funds. (HSEM)
- Improved participation in Recovery briefings during the event. (HSEM)
- Departments need to understand the FEMA worksheets so they are submitted accurately and timely. (FASD)
- Departments need to do a better job of reconciling their forced account items: labor, and equipment. (FASD)
- Departments need to do a better job of tying their forced labor account summary to the employee timesheets. (FASD)
- Departments need to document exceptions to expected results (i.e. if auditor would expect a reporting code on a timesheet, but the employee didn't put it on their timesheet, the department needs to document the employee's work in a different manner like a memo or some other form of documentation that should be signed by the employee and supervisor). (FASD)

2.6.   Plans and Procedures

The Plans and Procedures focus area includes all predetermined actions taken or not taken. In addition, it includes refining and streamlining processes and procedures for future events. The City of Austin Emergency Operations Plan, relevant Annexes, as well as departmental standard operating procedures will be updated as necessary with information learned from this incident.

2.6.1.   Universal

2.6.1.1. *Worked Well*

- Staff has a regular maintenance schedule to make certain that all of the laptops in the EOC updated and working properly. Effectiveness of this policy was evident during throughout this incident. (CTM)
- When AFD and EMS dispatch centers were overwhelmed, the newly developed system of prioritization of 9-1-1 water rescue calls was utilized. Using the new system developed by APD dispatchers had better results, ensuring the appropriate type and level of resource was sent to each request for assistance.
  - o This Prioritization assistance from APD had the following effect on 9-1-1 call answer times during the event versus previous events in October 2013 and May 2015.

Date	AFD Answered Calls	% answered in 15 sec	% answered in 40 sec
10/31/2013	489	50.51%	61.96%
5/25/2015	256	52.73%	64.06%
10/30/2015	419	68.26%	81.38%

  - o APD was also given the AFD Emergency Instructions for Flooding events. This allowed the APD dispatchers to relay vital lifesaving techniques to the 9-1-1 callers as needed. These Instructions cover several emergency situations, including: person trapped in flooded house, person trapped in water in a vehicle and instructions on how to survive in swift water. (AFD)

2.6.1.2. *Needs Improvement*

- Develop procedures to enhance sharing of information and resources with customers in shelters and assistance centers during responses. (HHSD)
- The CASHP program should develop a template for daily transition briefings for staff shift/operational period changes at shelter/FAC. (HHSD)
- A process needs to established for the Human Services Branch Director to provide daily briefings to the service providers on the floor at the FAC. (HSEM)
- Collaborate with partners to develop criteria and procedures for customizing services available for specific events/scopes/needs (e.g. better scaling of

response activations, what are considered "essential services" (e.g. shots) based on event types). (HHSD)

- Develop procedures to ensure that there is a purchasing authority, with capability, present at response locations.
  - o Written processes and procedures for response staffing.
  - o Assign workers to appropriate duties based on skillset/needs match (e.g. - CS and language skills are needed at BOTH shelter and FAC).
  - o Consistent needs (nurses, social workers, purchasing authorization). (HHSD)
- Develop a formalized policy/procedure for establishment and operation of a joint AFD/EMS JOC. Including the appropriate number of members from each agency, the appropriate skill sets, and who needs to be assigned and report to the JOC when it is established. Management of specialized resources (i.e., assignment and recovery for subsequent assignment, and assignment to the appropriate location) should be outlined in the JOC policy. (AFD)
- Refine verbiage in the call protocols to match national standardized terminology direction e.g. Change the name of the process from "Call Triage" to "Call Prioritization. (AFD)
- Notification procedures for call-up and/or backfill for logistics, safety, and support personnel. (EMS)
- Need to create a plan to pick up barricades where they were installed. (PW)
- Create a plan for inspecting infrastructure that can become critical locations after inclement weather. (PW)
- Need to improve on documenting of daily work as it occurs. (PW)

3. Travis County Focus Areas

On December 18, 2015 an AAR meeting was held at 700 Lavaca Street in Austin, Texas. Approximately 40 people were in attendance. In preparing this AAR, it was important to solicit input from the various Travis County, agencies that had a role in the response and recovery to this catastrophic flood. Travis County experienced significant flooding in many eastern neighborhoods; namely, Arroyo Doble/ Twin Creeks, Timber Creek, Swiss Alpine and Plover Place, River Timber, Old Bastrop Road and Dry Creek/Thoroughbred Farms. The Dry Creek/Thoroughbred Farms neighborhood is considered the most highly impacted area as the three flood related fatalities in the Travis County during the incident all occurred in this neighborhood.

Information from this Travis County After-Action Report was summarized and included in the joint Austin-Travis County review held on February 8, 2016.

Every effort was made to contact the County agencies who were identified as responding to the floods or assist in the recovery. The omission of any organization is purely unintentional. While this report was compiled by the Travis County Office of Emergency Management, the information will be shared with all County agencies involved in the response and recovery to the flood.

The AAR consisted of a high level review of the events as they unfolded chronologically. After the review of the event, the following broad focus areas were presented to participants:

- Response
- Communications
- A/TC EOC Operations
- Resources
- Public Information
- Shelter/Flood Assistance Center
- Recovery
- Debris Removal
- Human Services and Public Health
- Community Meetings

As each focus area was addressed, participants were invited to post comments relative to each focus area under the headings of What Worked Well, What Needs Improvement and Other/Comments & Suggestions. The participant's comments were grouped together by similarity, and the meeting moderators then reviewed the comments, giving the participants the opportunity to discuss the matters more fully in an open forum. The comments received from this meeting are reiterated in the next section as they were received and make up the

content of this AAR. Some re-wording was done to incorporate similar comments but for the most part the comments are verbatim as the participants wrote them down.

The Travis County Office of Emergency Management would like to take this opportunity to formally thank all of the participants for committing themselves to the continual improvement of our response and recovery efforts by participating in this process and sharing their observations and expertise.

3.1. Communications

3.1.1. Pre-Event

3.1.1.1. Worked Well

- There were spill response plans in place for accidental releases.
- County web team personnel on call for web page updates.
- Conference calls with the National Weather Service (NWS), public safety, city and county stakeholders in preparation for the weather event.
- Good communication from the County Austin/Travis County Emergency Operations Center (A/TC EOC) staff.
- Coordinated with city/county/regional Public Information Officers (PIO) regarding social media posts about forecasted weather.
- Travis County Sheriff's Office (TCSO) and City of Austin (COA) received updates on conditions and projections leading up to the event.

3.1.1.2. Needs Improvement

- Develop community preparedness campaigns. Clear expectations to all Travis County workers regarding response / recovery roles.
- Public education and outreach regarding flood hazards and floodplains.
- More accurate information on river conditions and more advanced warning for area residents.

3.1.1.3. Comments/Suggestions

- A communications plan for large scale multi agency, multi-jurisdictional events is needed. Non-emergency management county departments were not notified the same way emergency management personnel who report to the A/TC EOC were notified
- Make information on county web page easier to find.
- Consider the use of a Travis County conference bridge for coordination purposes.
- Install more river gauges. Provide multiple means for area residents to receive information and warnings to evacuate.

3.1.2. Activation Notifications

3.1.2.1. Worked Well

- A/TC EOC Activation pages were done timely and effectively.
- Notifications were received via text messages.

3.1.2.2.   Needs Improvement

- No coordinated communication with elected officials, esp. legislatures. Task Intergovernmental Relations (IGR) with pro-actively managing interface with other elected officials.
- Translation services should be on-call.

3.1.2.3.   Comments/Suggestions

- Inform all county employees on how to contact the EOC PIOs, including Travis County Emergency Services PIO, when they need to communicate a particular message to the public, media or other audience. All Constable Departments need to be notified of potential emergency. Other county departments may not have communicated well with TCSO and Road Maintenance at the A/TC EOC for requests. There was some miscommunication and misunderstanding of what Road Maintenance was currently working on.
- There needs to be Travis County representation from Flood Plain management and permitting at the A/TC EOC and coordinate with COA Code Enforcement and Flood Management.
- Ensure that Travis County Office of Emergency Management (TCOEM) staff is trained on the use of Code Red and identify a Spanish-speaking member of A/TC EOC to assist with ENS messaging.

3.1.3.   Event Notifications

3.1.3.1.   Worked Well

- County Judge sending safety information to all county employees on Friday [10/30] morning to not travel during flash flood conditions.
- Emergency Medical Services (EMS)/Austin Fired Department (AFD) and STAR Flight have been working new 911 call triage process for rescue calls. STAR Flight, Austin Police Department (APD), Texas Department of Public Safety, Texas Engineering Extension Service (TEEX), Texas Department of Emergency Management, Texas Military Forces, Texas Parks and Wildlife have developed a helicopter rescue notification system. This system provides notification to other helicopter rescue provider's early notification of developing events. It is also used to de-conflict requests so that multiple helicopters are not sent to the same call. Texas Division of Emergency Management (TDEM)/TEEX/Military Forces used this and weather information to stand up helicopter rescue resources BEFORE there was a request.
- STAR Flight, APD, Texas Department of Public Safety (DPS), Texas Engineering Extension Service (TEEX), Texas Department of Emergency Management and Texas Military Forces have had multiple planning meetings to discuss Aviation DOC's during large scale events. We have identified several Austin area locations

(STAR Flight, APD, Texas Department of Public Safety, Austin Aviation Support Facility and Camp Mabry) as potential sites. STAR Flight Conference Room was used during this event. From that location we coordinated helicopter rescue requests for Travis County and Central Texas. This included 3-STAR Flight, 4-TxMF, 2-DPS and 1-APD helicopter. This allows us to coordinate aviation resources, requests with the goal of right aircraft, right crew, and right mission in a timely manner.

3.1.3.2.   Needs Improvement

- Work on finalizing a 911 water rescue triage system. AFD and EMS Communications need to triage swift water and flood requests for assistance so they can be prioritized.

3.1.3.3.   Comments/Suggestions

- Build subdivisions as premises in Computer Aided Dispatch (CAD) so that we can open general incidents for evacuations, etc.
- Translation Services should be appropriate and not just in Spanish.
- Press conference protocol needed.

3.1.4.   Field Communications

3.1.4.1. Worked Well

- During this event we were able to integrate DPS helicopters because they have Greater Austin- Travis County Regional Radio System (GATRRS) radios in their helicopters. Texas Military Forces (TxMF) does not have GATRRS radios. For ground personnel to talk to TxMF aircraft they would have to switch to an inter-operability channel determined during the event. This would need to be identified and then communicated to both the ground personnel and the aircraft. Assuming the ground and aircrew could find the channel. STAR Flight identified and purchased radio adaptors that allow a GATRRS radio to be plugged into a TxMF intercom system. This allows the aircrew to have direct communication with the ground crew on the channel they are already on. TxMF aircraft flew direct to the STAR Flight Hangar and this equipment was provided to them. They were able to communicate directly with local public safety personnel. Purchase More of these.
- A/TC EOC was very accessible, all calls were returned if unable to reach person we were attempting to speak to. We were given cell phone numbers to reach the persons we needed to forward information we were learning about in the different flooded areas of our precinct.

3.1.4.2. Needs Improvement

- The Southeast GATRRS system sites became overwhelmed in SE Travis County and we were unable to communicate for a significant period of time.

3.1.4.3. Comments/Suggestions

- Consider monitoring radio communications in A/TC EOC.
- Unscheduled, after hour test of inter-operability and radio capability. The system is capable of complex communications but most of the public safety personnel can only use a fraction of the capability. The system can only perform to the level of the user at the time and this is frequently a limiting factor. Functionality test that utilize the most experienced and knowledgeable communication personnel are not indicative of system performance.
- Need smart phones with texting capability.
- A/TC EOC phone list needed to include all department personnel and list what areas of responsibility for each.

3.2.   Resources

3.2.1.   Requests

3.2.1.1. Worked Well

- All three Search and Rescue aircraft available and performed without issue.
- Within 1 hour **STAR** Flight staffed 2 additional rescue helicopters. **STAR** Flight management remain qualified in their respective disciplines, we were able to bring the **STAR** Flight 2 crew in early (normal start time is 1000) and all the search and rescue helicopters were available.

3.2.1.2. Needs Improvement

- STAR Flight is expanding the capability of the STAR Flight Hangar Conference Room to better meet the information, technology and communication requirements of an AOC. This will also improve our ability to coordinate with off-site personnel for things like staff meetings and training. This is currently in process and will be completed in the coming weeks.
- Implement an emergency funding source when contracts are not available to purchase/request resources.

3.2.1.3. Comments/Suggestions

- Large animal rescue has been identified as a significant gap during these events. Texas A&M Veterinary School has developed emergency response teams and equipment to respond to these events and can be requested through TDEM. While they have the expertise to manage the animals and have the harnesses capable of extricating animals from difficult environments they do not have access to the helicopters that are sometimes needed to reach the animals. STAR Flight has the helicopters and crews capable of performing this mission. We have been requested and plan to participate in a joint training session with Texas A&M to formalize these procedures. This would then be available for our citizens.
- Partner with other agencies to develop reimbursement procedures. PIO to bridge gap between citizens needing debris removed and Non-Governmental Organization (NGO)'s / volunteers who can work on private property.
- Private property – debris removal policy needed
- For long term recovery - supplement TC staff with contractors.
- Identify several vendor contracts for acquiring barricades. Request TXDOT to have a representative in the A/TC EOC to assist with notifications.

3.2.2.   Availability

3.2.2.1. Worked Well

- The Travis County Fire Marshal's Office now assisting TNR with damage assessments.
- Deployed barricades to needed areas when notified.

3.2.2.2. Needs Improvement

- After a flood, suspend issuing all permits until the next Commissioners Court meeting. This will allow our permits staff to be available to efficiently and effectively conduct damage assessments.

3.2.2.3. Comments/Suggestions

- Look at potential change to FY 2017 budget rules to allow PBO discretion to quickly reallocate resources during and soon after a disaster.
- Develop back fill system using county employees as volunteers for disaster relief during major responses.
- TCSO, All Constables, Emergency Service Districts (ESD), EMS should discuss proper distribution of resources so that all resources are not deployed to a disaster and there's no service to non-affected citizens.
- Boats are good idea however, people must be trained to do rescues. Identify responsible agency if this is approved.
- Security lighting should be made available as soon as possible, this will assist with deterring looting and help with general well-being.
- Electrical mobile signs providing updated information to the neighborhoods are needed.
- Provide portable restrooms for outlying areas not near accessible restrooms.
- Implement an emergency purchasing plan and procedure and task a primary and secondary county department.
- Authorize County Executives the authority to make some disaster response/initial recovery decisions based on predetermined goals, objectives and established parameters.

3.3.   Emergency Operations Center (EOC)

3.3.1.   Staffing

3.3.1.1. Worked Well

- Having a member of the web team worked very well.

3.3.1.2. Needs Improvement

- Travis County needs Geographic Information System (GIS) staffing at the A/TC EOC to assist in situational awareness by providing mapping of the affected area.
- Travis County needs purchasing staff at the A/TC EOC to assist TNR and other entities if there is a need to get additional resources that are not already a county resource.
- All County Departments should evaluate their A/TC EOC staffing plan to accommodate long term A/TC EOC activation periods to ensure trained staff with decision making authority are available – throughout entire event.
- Have staff in A/TC EOC capable of issuing ENS notifications in both English and Spanish once the need is identified rather than tasking communications staff.
- AOC (air operations center) at Starflight Hanger – should coordinate tactical operations with Austin/Travis County EOC.
- Set objectives early. Determine if these objectives are set by TC Judge or TCOEM EMC.

3.3.1.3. Comments/Suggestions

- County staff working in EOC should be trained in Incident Command System (ICS).
- Liaison needed in A/TC EOC from Constable's office, Judge's office – perhaps develop a Liaison Officer position as a part of ICS.
- A/TC EOC needs to be staffed with someone who can speak Spanish in order to speed up the process of getting out the Spanish language version of the ENS message.

3.3.2.   Department Coordination

3.3.2.1. Worked Well

- Web Team member (Chris S.) was available and present at the A/TC EOC the day after the flood.
- Coordination with TNR, TCOEM, and TCSO worked very well.

3.3.2.2.   Needs Improvement

- Status reports needed from TCOEM at least 1x/day.
- TNR needs staffing at the A/TC EOC that continues to handle TNR resources to include activating emergency contracts as necessary.
- TNR coordinating barricade deployment once notified by TCSO.
- A/TC EOC only has City of Austin access – access to TC network resources needed.

3.3.2.3.   Comments/Suggestions

- Have agreements, procedures, and an activation plan in place so support staff knows when and where to report after a disaster.
- Establish a check-in portal or other means for non-emergency management TNR employees to see level of disaster and whether they are needed.
- Consider overhead team (Incident Management Team - IMT)
- Once the A/TC EOC is activated, A/TC EOC personnel to send the ENS notifications.
- Allow departments (outside of emergency management/services) to prepare for events outside of normal business hours. All Travis County departments to be involved in emergency response.
- Increase communications with Travis County ESD 11
- Coordinate Travis County conference call schedules in advance – utilize a Travis County only conference bridge.
- Plans should be in place – example: communications plan, conference call plan, activation plan – should be standing and modified accordingly – and exercise all plans.
- A/TC EOC representatives must have authority to give approval to get things done.
- Travis County Constables could assist TCSO with extra man power and use same radio channel as TCSO.
- Web EOC could benefit the people who do not input data if there was a 'read only' option.

3.4.   Shelter and FAC

3.4.1.   Logistics Support

3.4.1.1. Worked Well

- Flood assistance center (FAC) was stood up early during the event to provide assistance.
- The pre-planned routes by Capital (CAP) Metro worked to transport people from shelter to FAC.
- Having a combined center with the COA is useful for residents because many do not know which entity they need to go to for information, permits, buyouts or assistance. Staff at the center frequently had to explain jurisdictions, programmatic differences and help people navigate systems they are not familiar with.

3.4.1.2. Needs Improvement

- Coordination between Travis County / City of Austin / American Red Cross / Austin Disaster Relief Network / Travis County Austin Recovery Group (TARG) at flood assistance center.
- Need ITS support for staff working at flood assistance center / shelter - laptops, printer, Wi-Fi cards.
- Increase the number of licensed clinicians for case management at the shelter and Flood Assistance Center.
- Judge and/or Commissioners should be present at flood assistance center.

3.4.1.3. Comments/Suggestions

- Establish a proper way to register residents when there is a joint county/city assistance center.
- Consider having a FAC within close proximity to affected county residents.
- Mobile command vehicle could be used as an information center and travel to affected areas.
- Every department offering services at the FAC should have information display boards, hats/jackets/shirts with official department insignia that professionally identifies county employees.
- HHS has developed a bilingual information center which goes to affected areas.
- Capital Metro to develop bus routes early to help county residents get to the FAC and things we might need for meetings and shelters.
- TCOEM has a relationship with the Central Texas VOAD but make sure all county departments know about this relationship and engage more often – especially during disasters and/or events.

- Identify a county department to establish relationship w/ HOAs as a community outreach initiative.

3.4.2. Staffing

3.4.2.1. *Needs Improvement*

- Identify volunteers to assist with serving food.
- Identify volunteers to assist all residents of the shelter and patrons of the assistance center.

3.4.2.2. *Comments/Suggestions*

- Identify all Travis County officials while in shelter and/or FAC.
- Identify a county department to assist with coordination for all translation services.
- A PIO is needed to represent Travis County, as a whole, to receive and disseminate information from county to citizens (vice versa).
- During the recovery phase, task TNR Development Services with giving flood survivors the information needed for pre-permitting.

3.4.3. Management

3.4.3.1. *Needs Improvement*

- Identify the county departments with a role in recovery to work in the FAC.
- Develop a city/county/volunteer agency blueprint on physical placement in the FAC. Example: All county departments in one area. All city departments in one area. All non-city/non county agencies in one area.

3.4.3.2. *Comments/Suggestions*

- Identify corporate entities who could assist with clean up and debris removal. Have these corporate entities participate via the Volunteer Reception Center.

3.5.   Public Information

3.5.1.   Joint Information Center (JIC)

3.5.1.1. Worked Well

- Constable Canchola's office (precinct 4) was given updated information via flyers and emails and distributed this information to affected areas in the precinct.
- Lisa Block worked very hard not only by working in the Joint Information Center at the A/TC EOC but also gave STAR Flight related media updates.

3.5.1.2. Needs Improvement

- Identify multiple county public information officers to assist in the A/TC EOC joint information center.

3.5.1.3. Comments/Suggestions

- Add PIOs to additional county departments or have individuals trained who are not full-time PIOs but are available to come to the A/TC EOC and assist.
- Determine and publicize the 'official' methods for communicating with the public while utilizing a tool for citizens to receive timely information.
- A county emergency public information mobile unit is needed and could assist with providing updated information to affected areas. Consistently ensure there is correct messaging to media from county.
- Identify a catch-phrase/slogan and utilize in all public announcements (example: Turn Around Don't Drown, Drive Alive Austin, etc.)

3.5.2.   Media

3.5.2.1. Worked Well

- Disaster declaration was signed quickly and sent to media.
- Arranged media interviews with Travis County staff.
- Answered media questions about preparation.

3.5.2.2. Needs Improvement

- Communicating that public safety agencies are responding but must prioritize immediate life threatening situations first.

3.5.2.3. Comments/Suggestions

- Have news media repeat instructions over and over when flooding is expected to occur (i.e. Evacuate to higher ground, Don't have relatives drive in flooding areas)

3.5.3.   Notifications

3.5.3.1. Needs Improvement

- Identify press conference locations (to occur in the county) in a timely manner.
- Educate the public on the importance of using Code Red.
- Encourage CAPCOG to revise website to provide citizens an easier way to register for alerts.

3.5.3.2. Comments/Suggestions

- Encourage the use of weather service radios as a community outreach initiative.
- Task the county web team with developing a disaster web page for buyouts, floodplain permits, debris instructions, volunteer sign-up, etc.
- Task TNR Development Services (and PIO) with educating the public on buyout programs and the differences in services provided by county and city.

3.6.   Debris Management

3.6.1.   Plans and Procedures

3.6.1.1. Worked Well

- Quick deployment of dumpsters for flood-generated trash – with a pre-existing contract specifically for that purpose.
- Roll-off dumpsters were positioned in various locations at Thoroughbred Farms the Monday after the flood. Thirty-two roll offs, grappling machines and clam shells were immediately made available on Wednesday after the flood. This was excellent work on the part of TNR.

3.6.1.2. Needs Improvement

- Develop a process for diverting waste from landfills.
- Secure a vendor contract to assist in debris removal.
- Inform public on county debris removal process.

3.6.1.3. Comments/Suggestions

- Task a county department to develop a carcass removal plan and procedure.
- Task a county department to develop a Private Property Debris Removal plan and procedure.
- Task a county department to conduct windshield surveys to assist in identifying areas for debris removal.
- Develop a clear and cohesive message to both city and county residents on the debris removal process.
- Amend and implement the debris management policy developed by TNR to include FEMA Debris Removal requirements. Develop guidance for property owners and residents on how to handle debris clean-up. Coordinate with VOAD, NGOs, corporate entities, etc. to assist with debris removal.
- Establish various debris management sites to cover various areas of the county.

3.7.   Human Services and Public Health

3.7.1.   Plans and Procedures

3.7.1.1. *Worked Well*

- Having HHS present at community meetings to discuss assistance programs and available social services was helpful.

3.7.1.2. *Needs Improvement*

- More EOC trained staff needed to assist with operations in the EOC.
- Increase the number of licensed clinicians for case management at the shelter and Flood Assistance Center.

3.7.1.3. *Comments/Suggestions*

- Identify a county agency to provide food and water to affected areas.

3.8. Community Meetings

3.8.1. Plans and Procedures

3.8.1.1. *Worked Well*

- Having HHS present at community meetings to discuss assistance programs and available social services was helpful.
- The use of Del Valle Community Center as a host for a community meeting worked well.

3.8.1.2. *Needs Improvement*

- Develop a list of venues to host community meetings to include sufficient seating and an adequate public address system. Develop a policy and procedure for all government officials to adhere to during all community meetings.

3.8.1.3. *Comments/Suggestions*

- ITS/Web team is assembling a live video broadcasting rig to stream live information, events on county website and social media feeds.
- Task PIO to moderate community meetings.
- Develop a temporary living assistance fund mandated by county commissioners.

4. Conclusion and Next Steps

The 2015 Halloween Flood had many of the same characteristics as the 2013 Halloween Flood, notably historic water levels, that were reported as unpredicted by meteorologists across the region.

Fortunately, many of the lessons learned in the 2013 flood had been implemented prior to the 2015 flood. This allowed the City, County and community partners to respond effectively and efficiently to protect lives and property as conditions could allow.

Many of the same response leaders who worked through the 2013 flood worked together during the 2013 after-action process.

This institutional knowledge of the earlier flood was brought to bear in the 2015 event. This teamwork leads to cooperation during other significant emergencies that have the potential for escalation, large numbers of casualties, and unknown hazards.

The partnership between the City, County, and partner agencies is strengthened with each successive disaster, as the community increases its resiliency in the face of all hazards. There are numerous lessons to be learned from this incident. These discussions and agency takeaways will lead to new and improved strategies for response to unpredicted severe weather and flooding events.