

1E. Methods and means to provide more public education and outreach to new residents and visitors to raise awareness of flash flooding potential, as well as actions and strategies for the public to remain safe

Even though Austin is known as Flash Flood Alley, the city has largely been spared the scenes of New Orleans during Hurricane Katrina: homeowners being rescued from their roofs by helicopter, drowning of elderly due to lack of bus drivers or buses to evacuate frail residents from nursing homes or the faces of frantic parents trying to reach children at schools cut off by high water.

However, as a result of the October 2013 and 2015 extreme flood events, Southeast Austin and Travis County took the greatest hit in the loss of life and extensive property damage. The Lower Onion Creek flooding claimed eight souls with the youngest being only six months old. In the Memorial Day 2015 flood, somehow a man ended up atop a telephone pole at House Park on Lamar Blvd. escaping a rapidly rising Shoal Creek blocks away. This image as well as one of a man rescued by helicopter from a tree top near upper Onion Creek are a permanent reminder that not everyone in Austin knows the saying “Turn Around Don’t Drown”. To try and prevent the images of New Orleans being repeated here in Austin, the following education and outreach strategies are recommended for the City of Austin.

General public education is critical to the safety of our population. The City’s Early Warning Flood Gauge and Rain Gauge System are a core piece, warning residents of rainfall and the potential for flooding, alerting emergency responders to crisis locations, and warning downstream communities of impending flooding. We understand the City is currently upgrading this system.

Education and outreach needs to move away from the “100-year floodplain” approach and talk to people about the probability of flooding. For example, a 100-year flood has a 26% chance (about 1 in 4 chance) of occurring over a 30-year mortgage. Another way of thinking about it is that there is a 1 in 6 chance of a 100 year flood occurring in 18 years.

Flooding in Austin is not confined to the FEMA-identified floodplains. The massive “water bombs,” such as the 14 inches of rain that hit the airport in 2015, can strike anywhere and can cause flooding in any neighborhood overwhelming the storm water system. There is no practical way to build systems that can take on water bomb levels of rainfall.

Early warning systems save lives. Installing an Emergency Siren System similar to one used in Tulsa, OK, would provide residents and visitors with notice of imminent danger. Flood zone signage similar to hurricane zone signage along the Gulf and tsunami signage on the coasts would further enhance flood danger awareness. Information on emergency tool kits if surrounded by rising waters (access to the attic, breaking through the roof) pending rescue by first responders is critical for survival. Assistance with Emergency Preparedness Plans empowers communities. With the proper development and implementation of these resources the COA should minimize the potential of its residents or visitors being unaware of pending flood dangers.

The Flood Early Warning System (FEWS) is critical to public safety and should continue to be well maintained, expanded to cover more creeks, and updated as technology evolves. The FEWS program is funded under the O&M budget with a current funding level of \$1.4 million a year. Floodplain modeling is allotted \$0.5 million. The FEWS program currently contains approximately 100 gauges, including gauges maintained by the COA and US Geological Survey (USGS). Gauges must be Flood Hardened

With the substantial growth seen in the Austin Metro Area in recent years, strategically locating additional flood hardened gauges to provide more data points for better flood modeling is crucial to saving lives at the beginning and during extreme flood events.

Educating the public on available early warning systems is critical. The Integrated Public Alert Warning System (IPAWS) provides public safety officials with an effective way to alert and warn the public about serious emergencies using the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), the National Oceanic and Atmospheric (NOAA) Weather Radio, and other public alerting systems from a single interface.

The Regional Notification System (RNS) is a reverse 911 messaging system for the Council of Governments 10 County Area (Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis and Williamson counties). This System is utilized for warning specific parts of the community, not just the County as a whole. It uses the 911 database (landlines) and allows residents to register their cell phones in order to receive the warnings. <https://public.coderedweb.com/cne/en-US/21C524DBEA1F>. If residents do not have a landline phone, and they have not registered their cell phones to the RNS they will not receive the warning messages that could be targeted to their specific neighborhood or place of business.

Lastly, concern exists that the WPD's name does not accurately convey the role the Department plays in this critical function to the community. Simple changes could help citizens and taxpayers better understand where these dollars go and why.

Recommendations:

PUBLIC EDUCATION AND OUTREACH

1. Watershed Protection Department shall enhance the current community outreach approach by actively:
 - a. Tailoring the current "Flood Safety Resources" warning safety tips to include local information specific to the COA residents (refer to Louisville, KY example: <http://www.msdlouky.org/programs/crssite/fpfloodsafety.html>).
 - b. Providing the information in www.ATXfloods.com in a multilingual format
 - c. Educating COA residents on registering their phones and the use of the Integrated Public Alert Warning System (IPAWS) through the COA Office of Homeland Security and Emergency Management.

- d. Educating COA residents on the Regional Notification System (RNS).
 - e. Issuing NOAA Radios to residents in floodplains.
 - f. Providing information to residents in floodplains on emergency tool kits.
 - g. Coordinating with First Responder agencies on public education/awareness on the difference between rescue (water still rising-danger of drowning vs water crested-shelter in place until help arrives), etc.
 - h. Effectively communicating the flooding chances residents face beyond the standard 100-year floodplain, including outside the floodplain. Creative ways to do so might include games and other education tools.
 - i. Educating the Public about 100-year floodplain terminology.
 - j. Establishing and conducting regular flood informational media blitz events with the goal to reinforce emergency flood preparedness throughout the COA.
 - k. Implementing effective marketing techniques to include communities challenged with Internet connectivity, specifically areas at risk of flooding.
 - l. Including the Watershed Protection Master Plan "Problem Score" Viewer link as an additional educational/information resource to the COA residents: <http://austin.maps.arcgis.com/apps/MapJournal/index.html?appid=d45481abb0804c95a8e6b033188982b9>
 - m. Creating an informational brochure of available alternate Power Source options available to residents (manual backup systems) in flood prone areas that will temporarily support the family's power source needs until electrical service is restored.
 - n. Creating educational strategies on how residents and business operators can safely shut down utility valves for gas, oil, water and the main electrical supply (use tags on valves so they can be found quickly) AND include instructions that ONLY a professional can turn utilities back on if home and/or business flooded. This is ONLY feasible with advance warning.
2. All school campuses shall ensure each school campus located within a floodplain has an updated Emergency Preparedness Plan in response to flooding incidents each year.
 - a. Those plans should be reviewed annually by the Administration in conjunction with campus security staff, teachers, local first responders and the Parent Teacher Association (PTA) and the Campus Advisory Council (CAC) leadership, as applicable. The sample Emergency Preparedness Document (attached) provides the type of information that should be included.
 - b. Conduct annual flood response training with students and staff.
 - c. Develop parental/custodial outreach and education materials so parents/custodians know what to do in a flooding incident emergency (who to call, where to go, etc.). Share plan with PTA and CAC, to include what the plan of action to inform parents/custodians of students will be (meetings,

informational brochure, posters, information translated to other language(s) as needed, etc.). Informational materials must be included with “Back-to-School” Night events as well as in standard information packets for each new parent/custodians and students to all school campuses. All informational materials must be in the recipients’ primary language.

3. Agencies and/or businesses with vulnerable populations:
 - a. Charter Schools and Child Daycare Facilities should properly register to ensure their respective administration and security personnel, staff and parents are included in the “Emergency Flood Preparedness” list with the Department of Homeland Security and Emergency Management.
 - b. Agency and Building Administrators of Nursing Homes and other facilities that house vulnerable populations (disabled, incapacitated, minors, Wards of the State, etc.) shall take the same precautionary prevention, intervention and response strategies required of the school district. (Refer to SAMPLE Emergency Preparedness Document) On-site backup systems, emergency generators and required supplies (food, water, medications, etc.) must be incorporated into the Emergency Response Plan based on the needs of the population housed at the facility.
4. WPD shall assist in the establishment of an early warning network to communicate current conditions and warnings to local Home Owners Associations (HOAs) and neighborhood associations to help them get the word to residents, especially the elderly and infirm, who may not be aware of the flooding danger or who may need assistance.
5. Specific to floodplain variances, if development or redevelopment is allowed in a floodplain, WPD shall:
 - a. *Provide* education for *safe evacuation and* safely sheltering in place and
 - b. Require disclosure by seller/owner (or their representative) and education for buyer/renter of property that has been granted a floodplain variance that may constitute a health and safety risk.

ACTION AND STRATEGIES – ALERT AND RESPONSE

6. Watershed Protection Department and the COA incorporate information from the National Water Model needed to enhance the safety of all COA residents.
7. Continue to update FEWS equipment and software due to the reliance of many departments, the Emergency Operations Center (EOC), and the general public that rely on this system.
8. Closer coordination with USGS to add more flood-hardened rain and flood stage gauges for better flood forecasting in order to assist first responders during extreme rain events and for potential evacuations of Austin citizens.
9. Install, inspect, and maintain an Emergency Siren System designed to alert residents and visitors in flood prone areas.

10. COA develop and implement “First Responder” resources needed in response to expanding city boundaries (Refer to Fire Station Map and Response Times Documents).
 - a. Fire Stations with adequate staffing and operational support
 - b. EMS Stations with adequate staffing and operational support
11. Watershed Protection Department and First Responder Agencies review flooding incidents after 30 days and provide a condensed report to the COA City Council on what worked well and areas needing improvement
12. Watershed Protection Department coordinate with Texas A&M University for emergency veterinary services in response to flood events: <http://vetmed.tamu.edu/files/vetmed/vet/texvet-0815-pages-34-35.pdf>

ACTION AND STRATEGIES – AWARENESS AND PREPAREDNESS

13. Watershed Protection Department continuously review and update creek and local flood maps on a 3-year cycle and update as necessary.
14. As local flood maps are generated or developed, the Watershed Protection Department should publish and share them online similar to creek floods.
15. Watershed Protection Department shall encourage Agency Heads and Building Administrators of identified structures in the floodplain to coordinate with their local “First Responder” agencies and develop or update the facility’s individual Emergency Response Plan to flooding incidents in response to current flood maps.
16. Require “Flood Zone” signage in high-risk flood zones by marking the curbs in the color “BLUE.” (Question: Are we not putting a time frame on this item. I didn’t realize this was taken out?) Informational brochures regarding the meaning of the color on the curbs will be developed and distributed to all utility customers in a multilingual format at least twice a year.
17. Neighborhoods, including camping and lodging areas, with documented creek and local area flooding require signage at all major arterial roads entering the neighborhood to designate area as susceptible to flooding during storms. (Like hurricane zone signage along the Gulf and tsunami signage on the coasts.)
18. Require property owners (or their representative) to notify residents in writing if the leased property is in a floodplain. The written notification shall be in the lessee’s primary language. Renter’s Insurance information should be included with the application.
19. Intergovernmental Coordination with surrounding counties on floodplain hazards in the area for consistency in the educational message and potential cost savings.

20. Examine renaming WPD to better communicate to Austin citizens the three primary goals of the Department: Water Quality, Erosion Control, and Flood Mitigation.
21. Agencies and business owners/operators located within floodplains install barriers and/or anchor/secure large physical hazards and properly store chemical hazards (toxic, caustic and flammable) at risk of posing a danger, further injury or damage to residents/occupants, including first responders, downstream.
22. For COA residents involved in the Flood Buyout Program, WPD shall ensure that homeowners who choose not to voluntarily sell their home be educated around the implications and consequences.
23. Create a public forum whereby citizens can address the oversight body of the Watershed Protection Department to voice grievances, and seek avenues for navigating the bureaucracy.