

## ANNEX 3 to the **FIRE SERVICES REPORT 2020**



**Additional data relating to the Fire Services Report 2020, found under section title “*Study of Current Fire Services*” (pages 17-35). This annex is specific to the “All Hazards Approach” to emergency planning, prevention and response by Fire Districts in St. Tammany Parish.**

This annex reviews the need for fire districts to deliver a wide range of services to address emergencies arising from all hazards. Some in government and some special interests have spoken out against these additional services as outside the scope of the fire districts or not needed, which is opposite of national standards, best practices, state law, and reality. In the absence of Fire Districts providing these services, at best they are inadequate and at worst nonexistent. The Federal Emergency Management Agency (FEMA) is mandated in part to develop, in partnership with state and local governments, a national emergency management system that is comprehensive, risk based, and “all-hazard” in approach. “These risks include events such as natural disasters, disease pandemics, chemical spills and other man-made hazards, terrorist attacks and cyber-attacks”.<sup>1</sup> As an entity of FEMA, The U.S. Fire Administration “supports and strengthens fire and emergency medical services and stakeholders to prepare for, prevent, mitigate and respond to “all hazards”.”<sup>2</sup> The National Fire Protection Association (NFPA) has through more than 300 consensus codes and standards<sup>3</sup> created the industry standard for Fire and Emergency services. These codes and standards address the “all-hazards” approach, providing guidance for how to plan, prepare, prevent and respond to these various emergency incidents. Some examples include: NFPA 1700 Guide for Structural Fire Fighting, NFPA 1140 Standard for Wildland Fire Protection, NFPA 450 Guide for Emergency Medical Services and Systems, NFPA 470 Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders, NFPA 2500 Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services, NFPA 3000 Standard for an Active Shooter/Hostile Event Response (ASHER) Program, NFPA 1600 Standard on Continuity, Emergency, and Crisis Management, etc.. These standards along with many more encompass all hazards and are just the tip of the iceberg. When it comes to all-hazards emergency response, the fire service has a proven and professional standards-based way to prepare for, plan, prevent, and respond to “all hazards” incidents. Fire districts operate 24 hours per day and 365 days per year; fire districts are the “catch all” for public safety. When a 911 call is made and no one knows who to send, the fire department is called. This annex will provide additional information regarding the various services outside of fire protection that fire districts are tasked with handling as part of the mission to protect lives, property, and the environment from fire and

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other hazards.<sup>4</sup> The following specific areas will be addressed: Emergency Medical Services, Technical Rescue, Hazardous Materials, Weather Emergencies and Natural Disasters, and Active Shooter Hostile Event Response (ASHER).

1. Emergency Medical Services (EMS) makes up roughly 2/3 of all responses by Fire Departments nationally<sup>5</sup>; this holds true in St. Tammany Parish as well. The mission of protecting life puts emergency medical response at the top of the list in priority. No emergency will have a more frequent impact on health and safety than medical emergencies. In St. Tammany Parish, a written contractual agreement exists between St. Tammany Parish Government and Acadian Ambulance Service, Inc. (AASI) for the provision of emergency and non-emergency ambulance service.<sup>6</sup> Therefore in the eyes of Parish Government the responsibility for the provision of emergency medical service rests with AASI. Based on this contract there are designated service areas which include all of St. Tammany Parish except those areas served by a fire district ambulance service. This agreement includes the municipalities of the Parish that can opt into the agreement or enter a separate agreement if they so desire. The agreement includes the creation of three defined response time zones, and a desired response reliability standard for coverage of the defined response zones.<sup>7</sup> St. Tammany Parish Government and AASI should be commended for operating using an agreed set of written and defined standards that also includes a Quality Assurance component to ensure compliance. It was a huge step in the right direction for the community and rare in Louisiana in 1996 when it was first implemented. The contract has been continuously renewed ever since because AASI provides a good for-profit ambulance model. The most current version of the agreed upon performance standards was created in 2010. Even though AASI provides a good service, the agreement is far from ideal. One big example is that even the best response time zones are well above NFPA 1710 Emergency Medical Operations standards which establishes call “processing time of not more than 64 seconds for at least 90 percent of the alarms and not more than 106 seconds for at least 95 percent of the alarms”,<sup>8</sup> “60 seconds turnout time for EMS response”,<sup>9</sup> “240 seconds or less travel time for the arrival of a unit with a first responder with automatic external defibrillator (AED) or higher-level...”,<sup>10</sup> and “480 seconds or less travel time for the arrival of an advanced life support (ALS) unit..., provided a first responder with an AED or basic life support (BLS) unit arrived in 240 seconds or less travel time.”<sup>11</sup> There is no national consensus standard for delivery of ambulance services except those established by NFPA for fire departments.

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“No universally accepted response-time system requirement exists. However, in urban areas, the most widely used ambulance response-time standard is eight minutes and 59 seconds (8:59), with 90% compliance reliability...”<sup>12</sup>. “There are no federal laws regarding response times and, after doing thorough research, no state laws that pertain to response times were found.”<sup>13</sup> “Most communities have established standards of eight minutes or less 90% of the time for ALS service”<sup>14</sup>. “Some municipalities... have even moved response time standards to 12 or 15 minutes for private EMS providers 90% of the time, but these are usually coordinated with ALS first response.”<sup>15</sup>

By contract AASI has the following three defined response time zones: In Zone 1, the “Provider shall produce a maximum response time of eight minutes and fifty-nine seconds (08:59) on not less than 90% of all emergency responses”<sup>16</sup>. In Zone 2, the “Provider shall produce a maximum response time of fifteen minutes and fifty-nine seconds (15:59) on not less than 90% of all emergency responses”<sup>17</sup>. In Zone 3, Provider shall produce a maximum response time of twenty minutes and fifty-nine seconds (20:59) on not less than 90% of all emergency responses”<sup>18</sup>. The response time being measured does not begin until after 911 receives and transfers the call to AASI “Dispatch Center” and they have received all of the “essential information”; then the clock starts until the arrival at the scene of the incident by an ALS equipped unit or Sprint Unit.”<sup>19</sup>. There is no time constraint or calculation for the call processing time for AASI Dispatch Center of “essential information” including location, any requested directions to location, callback number, and chief complaint or nature of problem or if the initial location information is obtained from a 911-data base, confirmation that the patients’ location is the same as that of the caller or confirmation of the patient’s actual location.”<sup>20</sup> This by definition is call processing time, directly under the control of AASI and yet is not included in response times. Call processing adds to the time it takes for an ambulance to arrive to an emergency when 911 is called; however, based on the contract there is no accountability for it.

To summarize the various cited statements concerning response times, including why it matters, and how this all relates to the contractual standards in St. Tammany Parish by agreement with Acadian Ambulance Services, Inc., consider the following: of the roughly 75% of the Parish citizens covered by AASI, there are only two small areas within an 8:59 response zone, that include the City of Covington and the City of Slidell or about 11%. Half of the Parish falls into the 15:59 response zone and the remaining 12% of the Parish is included in the 20:59 response zone. The

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reality is that the actual response times are likely far greater than stated, since the 911 call processing time is not included, and more importantly the AASI Dispatch Center call processing times are not included. If you are a citizen living in St. Tammany Parish and you are fortunate enough to live in one of two very small areas included in the Zone 1 response time, an ambulance can take eight minutes and fifty-nine seconds (8:59), plus the 911 receipt and transfer time (30 seconds best case), plus the AASI Dispatch Center Call processing time (60 seconds best case) and be in compliance with the standard adopted by contract in St. Tammany Parish. This best-case scenario would mean a ten minute and thirty second (10:30) plus response time is actually acceptable for “not less than 90% of all emergency responses in Zone 1”; note that there is no limit to, or measure of obtaining “essential information”. This means up to 10% can be higher than this 10-minute plus response time and be acceptable performance in addition to no accountability for the time it takes to process the call. This is for the best response zone including only an estimated 11% of the Parish. The following chart shows the estimated distribution of population by response zone coverage:

<b>Acadian Response Zone Population Statistics</b>		
<b>Acadian Response Zones</b>	<b>Population Covered</b>	<b>Percent Covered</b>
Response Zone 1 - 8:59	30,459	11%
Response Zone 2 - 15:59	134,213	50%
Response Zone 3 - 20:59	31,638	12%
Fire District Zones	69,852	26%
ESRI Arc GIS Source:U.S. Census Bureau, 2020 Redistricting Data		

This is where the Fire Districts come in. The fire districts send Basic Life Support (BLS), expanded Basic Life Support and even Advanced Life Support (ALS) to medical emergencies to begin care, and to stabilize the emergency until the ambulance arrives. Fire districts are striving for NFPA standards and benchmarks that include the call processing time, the time for them to react and get in the truck (turnout time) and the time it takes to drive to the emergency (travel time). This total response time is measured against six minutes (6:00) total, 90% of the time for BLS and eight minutes (8:00) for ALS, if BLS was there within six minutes (6:00). The fire districts make up the difference in contractually agreed upon response times for medical emergencies. Fire districts that

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have ambulance transport service also provide mutual aid for AASI when needed to ensure timely ambulance response throughout the Parish. There is much debate regarding if response times really matter in patient outcome, if prehospital ALS level care really matters in patient outcome. There are various studies with findings that say it does not and many that say it does. Two studies that support improved outcomes from faster response times provide the following: A study for all emergency ambulance call types found “the impact of response times on outcomes show that, on average, a minute increase in response times increases mortality by between 8% (measured 1 day after the initial incident) and 17% (measured 90 days after the initial incident).”<sup>21</sup> For Out of Hospital Cardiac Arrest (OHCA) the following was reported: “In the overall group, survival was 19.5% when the EMS crew arrived within 0 to 6 minutes, as compared with 9.4% if the crew arrived after 10 minutes...”<sup>22</sup>. “Survival to 30 days after a witnessed OHCA decreases as ambulance response times increase. This correlation was seen independently of initial rhythm and whether CPR was performed before EMS-crew arrival.”<sup>23</sup> Beyond studies, simple observations of any person with experience shows that when something bad happens, the quicker you are able to address it with the right solution, the less negative impacts that problem will have. This is no different with emergency services, the quicker a highly trained and properly equipped response of the appropriate number of people is assembled, the better chance there is of an improved outcome. Acadian Ambulance Service, Inc. provides a good service to St. Tammany Parish, that would be very inadequate without fire districts responding to medical emergencies. AASI ambulance crews depend on the response from fire districts when a patient is trapped or stuck, when the patient is too heavy for their crew to move, when the level of care required takes more than one person in back of the ambulance, and when the ambulance crew is delayed in response. St. Tammany Parish is by far, safer because fire districts are highly trained, equipped, and prepared to respond to medical emergencies.

2. Technical rescue is a specialized service of fire and rescue service encompassing six disciplines: rope rescue, confined space rescue, vehicle/machinery rescue, structural collapse rescue, trench rescue and water rescue.<sup>24</sup> NFPA Defines Technical Rescue as “the application of special knowledge, skills, and equipment to resolve unique and/or complex search and rescue situations.”<sup>25</sup> Technical rescues are low frequency; they are not an everyday community occurrence. However, the risk always exists, there are opportunities every day for these types of

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incidents to occur, and when they do the consequences are usually severe. Therefore, technical rescue incidents are high-risk, low frequency events that require specialized equipment, specialized training, and proficiency to safely respond and mitigate. For these reasons regular and consistent training and preparation is essential to competently provide these types of services. As a general rule the more populated and urbanized the community the more likely the chance of these incidents occurring. Additionally, the frequent use of industrial machinery, heavy construction, high-speed roadways such as Interstates, waterways, flood risk, and severe weather events all increase the likelihood of a technical rescue incident. Based on the St. Tammany Parish Emergency Operations Plan, Emergency Support Function (ESF) 9, Search and Rescue, “the Sheriff’s Office Search & Rescue personnel are assigned responsibility for day-to-day search and rescue operations.”<sup>26</sup> In assigning the general day to day responsibility for search and rescue to the Sheriff’s Office, a misunderstanding of what that includes in the emergency plan has often occurred. The capabilities of the St. Tammany Parish Sheriff’s office are often misunderstood by Emergency Management, elected officials, and others. The St. Tammany Parish Emergency Response plan explains that Search and Rescue day to day responsibilities are specific and are “primarily for any water related incidents in the parish, to include boating mishaps, missing persons, and downed aircraft mishaps.”<sup>27</sup> A look at what the St. Tammany Parish Sheriff’s Office provides by way of services will show that they have a Marine Patrol Division whose “primary responsibility is to patrol waterways and enforce state and local boating regulations as well as to promote safe boating practices.”<sup>28</sup> Who “have received specialized training in water rescues and special tactics to be used in watercraft” ... “for emergencies such as lost boaters, disabled vessels and accidents.”<sup>29</sup> “The St. Tammany Parish Sheriff’s Office Dive Team has the responsibility of searching for and recovering submerged vehicles and other underwater evidence. The team also conducts hull and port sweeps for contraband and/or dangerous devices.”<sup>30</sup> The Sheriff’s office provides important rescue services, none of which are provided specifically by Fire Districts. Although the Sheriff’s Office does not mention high water/flood water rescue vehicles specifically on their website, they do have that capability and perform those functions. Most Fire Districts also have highwater vehicles and use them for rescue and evacuation; additionally, some fire districts have boats for flood water or rapid access inland water rescue. Fire Districts have trained personnel and equipment for flood water and swift water rescue, structural collapse, including air bags, shoring and struts for bracing and

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stabilizing damaged structures. Fire districts have trench collapse training, equipment and expertise, including rescue struts, air lifting bags, low pressure trench cushions, Walers, Finnform, plywood ground pads, etc., fire districts have high angle and below grade rope rescue training and rope rescue equipment, as well as confined space rescue training and equipment. It is important to note that the Sheriff's office nor any other local agency other than the fire districts have this training or equipment. Not every fire district has Technical Rescue equipment but most all have at least some personnel trained for Technical Rescue. Districts that have a higher risk for these incidents have the training and equipment to handle them and each district knows who has what capabilities. These neighboring districts train together for these types of events. The various needed ESF 9 functions would not be readily available in St. Tammany Parish without the fire districts. Task Force resources, ironically made up of Fire Departments from outside St. Tammany Parish would have to respond, usually hours later to a few days after the event if local fire districts did not have technical rescue capabilities. This would needlessly increase human and animal suffering and would drastically reduce the chance of survivors. Additionally, only the fire districts have training and equipment for responding to machinery and vehicle accidents; these are a more common occurrence and every fire department in St. Tammany Parish has trained and equipped personnel for handling these incidents. Examples of incidents that have occurred in St. Tammany Parish include: rescues from flooding and storm surge, rescues from cellular, radio, and water towers, rescues from roof tops, rescues from ship hulls and excavation sites, including collapsed trenches. Rescues from collapsed buildings from fallen trees, from high winds, and from construction accidents. Rescues from entrapment in machinery, entrapment in over turned heavy equipment, and in motor vehicle accidents of every imaginable situation. When it comes to technical rescue, some of the top experts in the south east region are members of fire districts in St. Tammany Parish. The people of St. Tammany Parish are safer for this capability readily available from fire districts.

3. Hazardous Materials response is another service provided by fire districts. The Louisiana State Police (LSP), Emergency Services Unit (ESU), is the primary agency in the state of Louisiana with both the regulatory and statutory authority for hazardous materials<sup>31</sup>. Yet, the Hazardous materials unit is located in Baton Rouge area and has limited resources and personnel. In the history of Hazardous Materials response in St. Tammany Parish no resources other than on-scene

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coordinators have been provided to St. Tammany Parish during a release. It is common knowledge by LSP that St. Tammany Parish Fire Districts have the ability to handle Hazardous Materials incidents at a highly proficient level and are a potential valuable resource when needed elsewhere. As outlined in the St. Tammany Parish Emergency Operations Plan, Emergency Support Function (ESF) 10 Hazardous Materials (HazMat) and Radiological, it is the responsibility of fire departments to handle and be in command of HazMat responses in St. Tammany Parish. "If the first responder is not from the fire department, incident commander duties will be relinquished to the first fire department representative arriving on the scene. This incident commander is in command of the scene unless he/she is relieved by a more experienced member of the fire department."<sup>32</sup>

"HazMat's are being used, stored, and/or transported across St. Tammany Parish on a daily basis. Any incident or accident involving HazMat, whether natural or manmade, could adversely affect the public..."<sup>33</sup> "St. Tammany Parish communities will come in contact with situations involving HazMat daily and that a HazMat incident is likely to occur."<sup>34</sup> When considering the risk in St. Tammany Parish for a Hazardous Materials release it is important to understand that in the U.S. 65% of all 2,967,965 tons of hazardous materials transported annually are done so by truck, and 20% by pipeline<sup>35</sup>. St. Tammany Parish has Interstates 12, 10, 59 as well as eight major highways, nineteen total highways, as well as the 24-mile-long Causeway Bridge. All of these routes transport Hazardous materials throughout St. Tammany Parish on a daily basis. Additionally, there are six major pipelines traversing St. Tammany Parish, two Hazardous Liquid Pipelines and four Gas Transmission Lines. There is also rail transport of Hazardous Materials in Eastern St. Tammany Parish. When considering the most frequent Hazardous Materials to cause injury it is noted that they all are commonly found in St. Tammany Parish. The "top five chemicals associated with injury were carbon monoxide, ammonia, chlorine, hydrochloric acid, and sulfuric acid. Carbon monoxide and ammonia by far caused the most injuries, deaths, and evacuations. Chlorine, while not in the top 10 chemicals released, was in the top five chemicals associated with injury because of its hazardous properties."<sup>36</sup> The risk exists at all times for a Hazardous Materials release in St. Tammany Parish. It is the responsibility of the Fire Districts to respond, identify, effect rescue, provide decontamination, and protective measures to mitigate HazMat incidents in conjunction with and under the direction of the LSP.

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4. Weather Emergencies and Natural Disasters are a common risk in St. Tammany Parish. A heightened risk for severe thunder storms, flooding, tropical cyclones and storm surge exists for St. Tammany Parish. Dense fog, Tornados and Heat waves are also common weather risks. Of lesser likelihood but a possibility is severe winter weather, including freezing rain and ice, droughts and earth quakes. For example, unknown to most, there are three seismic faults in St. Tammany Parish in Lake Pontchartrain being Goose Point Fault near Slidell, Causeway Fault near Mandeville and Madisonville Point Fault<sup>37</sup>. Fire Districts are on the front lines of these events, preparing for, responding during, and after these disasters. These events complicate response, delay other services and limit access to citizens and their emergencies. Fire Districts have equipment, such as four-wheel drive vehicles, high water vehicles, boats, Rescue ropes, flotation devices, chainsaws, and other specialized tools to access, rescue and evacuate victims in these disasters. In the absence of fire districts performing these functions there would be needless delays in providing these services. Some of these services are in part available by other agencies like law enforcement and public works but would be wholly inadequate alone. Additionally, the training and equipment used by fire districts for natural disasters provides access to medical emergencies, fires, rescues, like building collapse or vehicle accidents, and hazmat incidents that otherwise would go unanswered without these proactive measures during disasters. As part of the All-Hazards approach Fire Districts play a vital role in natural disaster planning, response and recovery.

5. Active Shooter Hostile Event Response (ASHER) is a law enforcement responsibility from the prevention and response side. Yet, it is the Fire Districts who will need to follow law enforcement into the "hot zone" as they neutralize the threat, to initiate treatment, evacuate, and triage victims quickly. NFPA 3000 Standard for an Active Shooter/Hostile Event Response (ASHER) Program, 2021 Edition - Chapter 13 Competencies for Fire and EMS Personnel provide fire and EMS personnel who encounter ASHER incidents...to respond in an integrated manner with law enforcement."<sup>38</sup> Advanced Law Enforcement Rapid Response Training (ALERTT) at Texas State was named the National Standard in Active Shooter Response Training by the FBI. This standard aligns with NFPA 3000 for integration of Law Enforcement and Fire/EMS for ASHER events. The St. Tammany Parish Sheriff's Office, Mandeville Police, Slidell Police, Fire District 1 and Fire District 4 have ALERTT Trainers and will be conducting Parish wide training for all Fire Districts and local law enforcement in the future. Additionally, having the needed equipment for Fire personnel to enter a hot zone in

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an ASHER event is still a challenge. Grants are being pursued in hopes of outfitting every Fire District with a school or other high priority location with the needed protective equipment and specialized trauma kits. There are also challenges with EMS staffing for ASHER events since Acadian Ambulance is a private for-profit service, they do not allow their personnel in the “Hot” or “Warm” zone of an emergency incident. This requires law enforcement and Fire to treat, triage, and evacuate victims to a transport location outside of harm’s way. Once in a “cold” zone removed from the risk, Acadian Ambulance will load and transport victims. With law enforcement focused on neutralizing the threat and securing the scene, without Fire Districts and their trained EMS personnel there would be no rescue or rapid treatment of victims in an ASHER event. Fire Districts are an essential component of this response and will be the difference between life and death for those who have a chance of survival.

### Summary

St. Tammany Parish has a variety of risk that must be addressed from a preparedness, planning, prevention, response, and recovery standpoint. This “preparedness cycle” is at the core of government responsibility to provide for the public health, safety, and welfare of the citizens served. The preparedness cycle begins with community risk assessment as found in the St. Tammany Parish Emergency Operations Plan. In the St. Tammany Parish Emergency Operations Plan an overview of community “all hazards” risks are provided: “Disasters include, but are not limited to, hurricanes, tornadoes, floods, storms, high water, wind driven water, tidal wave, drought, fires, high winds. Apart from natural disasters, the parish is subject to a myriad of other disaster contingencies such as transportation accidents to include those involving chemicals and other hazardous materials. Even though the parish is not an industrial center it is subject to plant explosions, chemical, oil and other hazardous material spills. As with any other community the parish is also exposed to building or bridge collapse, utility service interruptions, energy shortages, civil disturbances or riots, terrorist activity, and warfare.”<sup>39</sup> The International City/County Management Association provides a succinct explanation regarding the Fire Service role in all hazards response: “Since almost all public safety incidents require quick response from trained equipped, experienced, and highly organized personnel, it is natural that the most common agency of choice should be the fire and rescue department.”<sup>40</sup> The provision of these services are authorized

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by state law and give fire districts broad authority to provide for the protection and safety of the public. “The Legislature of Louisiana recognizes that providing fire protection and emergency medical service by fire protection districts is a governmental purpose essential to the public health, safety and protection of citizens and property in the state. Accordingly, the provisions of this Section shall be construed liberally in order to allow fire protection districts the broadest discretion in determining the appropriate uses for their funds subject to any express constitutional limitations.”<sup>41</sup> There is both a standard of expectation and the reality that today’s fire districts will provide a variety of emergency services, nationally as well as here in St. Tammany Parish. Without fire districts providing these emergency services they would not happen. The fire districts of St. Tammany Parish are the “tip of the spear” in local “all hazards” emergency response.

### References

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<sup>1</sup> <https://www.fema.gov/emergency-managers/national-preparedness/goal> FEMA National Preparedness Goal

<sup>2</sup> <https://www.fema.gov/about/offices/fire-administration> U.S. Fire Administration Mission

<sup>3</sup> <https://www.nfpa.org/overview> NFPA Consensus Standards

<sup>4</sup> Essentials of Fire Fighting and Fire Department Operations, 6th Edition, pg. 21 – Fire Service Mission

<sup>5</sup> <https://www.usfa.fema.gov/data/statistics/states/louisiana.html> U.S Fire Administration, Incident types, Louisiana vs. national average

<sup>6</sup> <http://www3.stpgov.org/agenda/NOV%202018.2/doc-5334-1543271962.pdf> ORDINANCE CALENDAR NO: 6064 November 1, 2018, Ref. Acadian Ambulance Contract 2019 - 2022

<sup>7</sup> <http://www3.stpgov.org/agenda/10-aug/4185AA.PDF> “Exhibit A” CONTRACT FOR EMERGENCY AND NON-EMERGENCY AMBULANCE SERVICES PARISH OF ST. TAMMANY... IV (h) pg. 6

<sup>8</sup> <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1710> National Fire Protection Association. (2019, May 18). Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments (NFPA 1710 4.1.2.3.3)

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- <sup>15</sup> <https://www.hmpgloballearningnetwork.com/site/emsworld/article/10324786/ems-response-time-standards> EMS World Magazine, April 2004, EMS Response Time Standards
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- <sup>22</sup> <https://www.ahajournals.org/doi/10.1161/JAHA.120.017048> Results, paragraph 1
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- <sup>29</sup> <https://www.stpso.com/divisions/enforcement/operations/special-operations/> Special Operations, Marine Patrol
- <sup>30</sup> <https://www.stpso.com/divisions/enforcement/operations/special-operations/> Special Operations, Dive Team
- <sup>31</sup> <http://www.lsp.org/esu.html> Emergency Services Unit (ESU), Hazardous Materials
- <sup>32</sup> [http://www.stpgov.org/files/St. Tammany Parish Basic Plan January2019PR.pdf](http://www.stpgov.org/files/St._Tammany_Parish_Basic_Plan_January2019PR.pdf) (ESF 10-4) 3. Response, a., i.
- <sup>33</sup> [http://www.stpgov.org/files/St. Tammany Parish Basic Plan January2019PR.pdf](http://www.stpgov.org/files/St._Tammany_Parish_Basic_Plan_January2019PR.pdf) (ESF 10-1) II. SITUATION AND ASSUMPTIONS, A. Situation, 1.
- <sup>34</sup> [http://www.stpgov.org/files/St. Tammany Parish Basic Plan January2019PR.pdf](http://www.stpgov.org/files/St._Tammany_Parish_Basic_Plan_January2019PR.pdf) (ESF 10-2) II. SITUATION AND ASSUMPTIONS, B. Assumptions, 2.
- <sup>35</sup> <https://www.census.gov/content/dam/Census/library/publications/2017/econ/ec17tcf-us.pdf> Transportation—Commodity Flow Survey (Table H12, pg.93)
- <sup>36</sup> <https://www.cdc.gov/mmwr/preview/mmwrhtml/ss6402a6.htm> Top Five Chemicals Resulting in Injuries from Acute Chemical Incidents — Hazardous Substances Emergency Events Surveillance, Results, paragraph 1.
- <sup>37</sup> <https://pubs.usgs.gov/of/2002/of02-206/geology/fault-system.html> Environmental Atlas of the Lake Pontchartrain Basin, Fault System in Lake Pontchartrain
- <sup>38</sup> <https://codesonline.nfpa.org/code/54c53425-b296-4618-ba17-0752902aeb55/25cdec00-a09c-42d6-95fd-4e4f293eaeab/> NFPA 3000 Standard for an Active Shooter/Hostile Event Response (ASHER) Program, 2021 Edition 13.1.4.1
- <sup>39</sup> [http://www.stpgov.org/files/St. Tammany Parish Basic Plan January2019PR.pdf](http://www.stpgov.org/files/St._Tammany_Parish_Basic_Plan_January2019PR.pdf) II. SITUATION AND ASSUMPTIONS, B. Situation, 2.
- <sup>40</sup> Managing Fire Services, 2nd Edition, ICMA 1988, 2002, 2013, Preface – The expanding role of the fire service
- <sup>41</sup> <https://www.legis.la.gov/Legis/Law.aspx?p=y&d=97608> (La RS 40:1501 (4))