Hurricane Harvey
Worker Health and Safety Plan
Version 2.0

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For Federal Employees and State Agencies, and Federally Deployed Assets Including Contractors

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US EPA
Health and Safety Plan (HASP) for Hurricane Harvey Response & Recovery

This document outlines the basic safety & health requirements for federal workers and contractors involved in response and recovery operations related to Hurricane Harvey.

This HASP provides overarching requirements and sets a baseline for worker safety & health protection. Individual agencies and contractors are responsible for developing HASPs specific to their operation for the protection of their own employees.

This HASP was developed using basic risk management principles to provide for the greatest level of protection for the greatest number of workers at risk. Specific operations or locations that contain actual or potential hazards not considered in the basic plan may require greater levels of protection. It is incumbent on each agency or contractor to have a competent person[1] conduct a job hazard analysis (JHA) prior to commencing work.

This HASP follows the basic principles outlined in OSHAs Safety & Health Program Management Voluntary Guidelines, which are as follows:

- Management commitment and employee involvement
- Worksite analysis
- Hazard prevention and control
- Safety & health training

This HASP also addresses the tasks identified in the Worker Safety and Health Support Annex (WSH Annex) to the National Response Plan (NRP).

Agency and Contractor Safety & Health Plans

Each employer (agency and contractor) is responsible for the safety and health of its employees. Each agency and contractor must establish a safety & health plan commensurate with its operations and consistent with the principles outlined in this HASP. Individual plans will be submitted to the OSHA representative and appended to this HASP. Each agency and contractor will designate a safety & health manager responsible for the implementation of the HASP.

Safety & Health Program Management

Overall coordination of the HASP will be handled by representatives of the four participating agencies: EPA, Coast Guard, TCEQ, and TGLO as the Coordinating Agencies for the WSH Annex. These agencies will work together as outlined in the WSH Annex to address overall safety and health management related to the incident. Individual agencies and contractors are responsible for implementing the necessary protections for their employees consistent with the HASP. Employers shall establish policies for the enforcement of their safety and health rules.

Joint safety and health meetings will be held with agencies and contractors. These meetings will address ongoing, as well as new and emerging, safety and health issues. Incidents (including near-misses) will be reviewed, and trends will be analyzed. Sampling results will be shared among all agencies and contractors.

Information dissemination will be coordinated with the Joint Information Center. Attention should be paid so that worker safety and health messages are not confused with information for the general public, and vice versa.

[1]OSHA defines a competent person as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. (29 CFR 1926.32(f), emphasis added)

Recordkeeping

Each employer is responsible for maintaining logs of all recordable injuries and illnesses (OSHA Form 300 or equivalent). Each recordable case shall be logged within five working days. A supplemental record shall be maintained for each case. This information, together with total job hours worked, will be provided to the Safety office on a weekly basis for the development of trend analyses and calculation of DART (days away/restricted time) rates.

Incidents that have statutory reporting requirements shall be reported in conformance with those statutes. This includes, but is not limited to:

- Accidents involving worker fatalities or the hospitalization of three or more workers must be reported to OSHA within eight hours (1-800-321-6742).

- Spills or releases of hazardous materials or oil in excess of the reportable quantity must be reported to the National Response Center (1-800-424-8802).

Each employer is responsible for maintaining employee exposure records in accordance with 29 CFR 1910.1020.

Worker Rights and Responsibilities

It is the responsibility of the employer (agency or contractor) to provide a safe and healthful workplace for their workers. It is the responsibility of employees to comply with established work rules and to use assigned personal protective equipment.

Employees who identify hazards shall immediately notify their supervisor. Employees may refuse to perform tasks that create an imminent danger. Employees have a right to complain about unsafe or unhealthful working conditions to OSHA or other agencies with jurisdiction. Employees who file complaints will not be subject to any discrimination as a result of them exercising their rights.

All workers must adhere to the following work rules:

- Follow their employer's safety & health policies at all times.
- Follow supervisor's instructions and adhere to the chain of command.
- Follow personnel accountability instructions; check-in and check-out.
- Obtain vaccinations in conformance with the employer's medical direction.
- Promptly report all injuries, accidents, and near misses. Seek medical attention as needed.
- Report all unsafe conditions. Do not perform tasks until proper safety & health controls have been put into place. Employees may refuse to perform tasks that expose them to an imminent danger.
- Wear all personal protective equipment (PPE) needed for the task.
- Maintain constant awareness of your surroundings.

Situation Assessment

On Wednesday, August 23, 2017, Governor Gregg Abbot of Texas declared a State of Disaster for 30 counties in anticipation of Tropical Depression Harvey making landfall. On Wednesday, the governor ordered the State Operations Center (SOC) to elevate its readiness level as Tropical Depression Harvey approached, and the National Hurricane Center issued a hurricane and storm surge watch for the Gulf Coast. Starting at 7:00 a.m., Wednesday, August 23, the SOC increased from level IV (normal conditions) to level III (increased readiness) and will be further elevated to level II (escalated response conditions) starting Thursday, August 24th at 7:00 a.m. Additionally, Governor Abbott has made available any and all state resources to assist in preparation, rescue and recovery efforts.

Job Hazard Analysis (JHA)

Each agency and contractor shall prepare JHAs for their operations. The JHA is typically developed and prepared by a team of personnel familiar with the specific task or operation. Generally accepted principles of risk management and hazard control shall be applied. The JHA will focus on risks to worker safety and health. Each identified hazard (actual or potential) will be addressed with appropriate mitigation strategies (i.e., hazard controls). JHAs should

serve as stand-alone documents to serve as a reference for individual workers and supervisors performing the task or operation. The hazard control measures must be specific, clear, concise, and practical. Any required permits (i.e., confined space entry, hot work, etc.) shall be attached to the JHA. The employer shall keep copies of all JHAs for review by occupational safety & health professionals and by agencies having jurisdiction.

Exposure Monitoring

Exposure monitoring shall be performed based on a health risk assessment conducted by a qualified person[3]. Personal monitoring should be the primary means of assessing worker exposure. In many cases direct reading or grab sampling can be used. In all cases documentation must clearly depict what the sampling represents. If there is any doubt, conduct personal monitoring. It is important to remember the importance of sampling data shared amongst the federal family. Additionally, when samples are taken that represent an individual's exposure, contact information for that individual should be obtained to ensure they can be notified of results and recommendations for follow-up actions.

Consideration should be given to contaminants likely to be present in the circumstances encountered. Building materials may contain silica, asbestos, or lead. Subsequent to the hurricane, damp conditions and flooding may contribute to the growth of mold[4]. When specific chemicals are known or suspected to be present in certain locations, the sampling protocol should address them. Screening may be conducted to determine if contaminants are present. Full-shift or short-term exposure personal monitoring of employees shall be conducted to determine actual occupational exposure levels.

It is important not to confuse occupational exposure limits with standards established for the protection of the public or the environment. Sampling strategy, risk communication, and public/media information should take this difference into account.

In addition to sampling performed by various agencies during their response activities, each employer (agency or contractor) shall conduct exposure monitoring (personal sampling or monitoring) as follows:

- When required by a specific standard (i.e., OSHA standards for lead, asbestos, benzene, etc.),
- When worker exposure is reasonably anticipated to be greater than the OSHA (or other applicable agency) action level for that substance (or 50% of the Permissible [5]Exposure Limit (PEL) or Threshold Limit Value (TLV)if no action level is specified),
- When necessary to assess and evaluate worker exposure, or to resolve worker complaints or concerns
- When necessary to verify the adequacy of the hazard control methods implemented.

Sampling results will be provided to affected employees, the safety & health professionals, and shared among the cooperating agencies and contractors via the data collection mechanism developed.

Hazard Control

Hazards should be addressed according to the hierarchy of controls, listed below in descending order of preference:

- Elimination or substitution: Not a viable option for most hazards created by a natural disaster, although it may be considered for introduced hazards, such as for materials or processes brought in during the recovery operation,
- Engineering controls: Physical steps to reduce or eliminate exposure to a hazard, such as installation of a guard on a machine,
- Work-practice or administrative controls: Work rules or procedures that lessen the probability of an accident.

[3]OSHA defines a qualified person as one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project. (29 CFR 1926.32(m))

[4]It should be noted that there are no regulatory standards that set quantitative exposure limits for mold.

- Personal protective equipment (PPE): Provision of protective equipment and garments is the least desirable method of protection, but in many instances it may be the only option possible.

Personal Protective Equipment (PPE)

The use of PPE must be properly assessed. Equipment must be properly selected for the hazard and properly fitted for the employee. Employees must be trained in the equipment uses and limitations, as well as proper donning and doffing techniques. Equipment must be inspected before each use and repaired or replaced as needed. PPE shall be maintained and stored in a clean and sanitary manner. Employers shall maintain adequate supplies for timely replacement of lost, worn, or broken PPE.

The following PPE may be needed during recovery operations:

- Foot Protection: Steel toe / heavy duty work shoes or boots with adequate tread, with consideration given to water protection in flooded areas
- Eye & face protection: Safety glasses (projectile hazards), goggles (liquid splash hazards), full face shields, or other suitable protection
- Head protection: Hard hat or helmet, in areas where overhead falling object or electrical hazards exist
- Appropriate work clothing: Providing protection from cuts & abrasions, irritation, and sunlight. Consideration should be given to heat stress issues (i.e., light colored, loose-fitting garments).
- Hand protection: Gloves suitable for the tasks being performed (balancing dexterity versus protection). Considerations include biological hazards (bloodborne pathogens), chemical hazards, and physical hazards (abrasion, cuts & punctures, heat). When deciding upon the type of glove to be worn, breakthrough times must be considered.
- Hearing protection: Earplugs, earmuffs, or a combination, should be used when employees are exposed to high levels of ambient noise. Reference OSHA 29 CFR 1910.95.
- High visibility garments: While such garments may make a worker more conspicuous to approaching drivers, they do not offer any actual protection from traffic. Such garments must be used in conjunction with other traffic safety means.
- Respiratory protection: Where nuisance levels of dust or mold are present, use of an N95 filtering face piece is recommended. Charcoal-impregnated masks may provide additional comfort against nuisance odors. When airborne contaminants exceed, or may reasonably be expected to exceed, exposure levels, the use of respiratory protection shall be required. Where contaminants such as lead, asbestos, or silica, are present, N100 or P100 air purifying respirators shall be used. Where other contaminants exist, specific filters or cartridges appropriate to the contaminant shall be used; combination cartridges and filters shall be used when multiple contaminants are present. Surgical masks and dust masks that are not NIOSH approved are not considered suitable respiratory protective devices. The use of respirators requires compliance with OSHA 29 CFR 1910.134, including the development of a Respiratory Protection Program, medical clearance, employee training, and fit testing. Voluntary use of respirators must conform to Appendix D of 29 CFR 1910.134. The use of self-contained breathing apparatus (SCBA) or other supplied-air respirators is beyond the scope of this HASP. The employers Respiratory Program Administrator must address such uses individually.
- Protection from drowning: Employees working on, over, or near water that presents a drowning hazard shall wear appropriate life vests. Additional protections, such as a life saving skills and a ring buoy shall be provided in accordance with 29 CFR 1926.106.

Specific circumstances, such as structural firefighting, confined-space entry, and response to hazardous materials releases, require specific PPE ensembles and procedures that are beyond the scope of this HASP. Operations such as cutting, burning, or welding also require the competent person conduct individual JHAs and assign appropriate PPE in conformance with procedures outlined in their HASP. Agencies or contractors addressing such hazards must comply with applicable standards (i.e., OSHA, NFPA, etc.).

[5]PELs are established by OSHA. TLVs are published by the American Conference of Governmental Industrial Hygienists (ACGIH).

Training

All agency and contractor personnel engaged in response operations must be trained to recognize and avoid hazards. This training is composed of several elements:

- General training for disaster site workers
- Site-specific training
- Task specific training, including any mandated training requirements
- Pre-deployment and pre-job briefings

Site-specific training includes an overview of conditions specific to the locales where the employee will be deployed.

Task-specific training includes items such as hazard communication, PPE, use of tools, safety at elevations, etc. Training that is mandated by various agencies, such as OSHA, EPA, USCG, DOT, etc., shall be provided in accordance with those agencies guidelines.

Pre-deployment and pre-job briefings are conducted on a daily basis by the worker's immediate supervisor to cover the day's work plan.

Employers (agencies and contractors) shall maintain records of employee training, which must be made available for inspection by agencies having jurisdiction. Training records include documentation such as, but not limited to, training certificates, attendance rosters, course curriculum matrices, etc. Employers shall provide competent and qualified persons as required by various standards.

Training activities will be coordinated with the National Institute of Environmental Health Sciences (NIEHS), OSHAs Office of Training and Education, and OSHAs Ed Centers.

General Safety & Health Provisions

Incident Management and Responder Safety

Response operations should follow the principles of the incident command system (NIMS-ICS). The following criteria should be addressed:

- Unity of command
- Span of control
- Common terminology and plain language
- Personnel accountability
- Management by objective (planning cycle, incident action plans)

In addition to the safety & health manager responsible for administering their HASP, each agency and contractor shall designate a safety officer to oversee field operations.

One or more assistant safety officers may be appointed as needed to cover large geographic areas, multiple shifts, or if specialty knowledge is needed for specific tasks. Agencies and contractors may coordinate the appointment of safety officers to maximize the use of safety and health resources.
Establish operational zones as needed:

- Hot zone or exclusion zone
- Warm zone or contamination reduction zone
- Cold zone or support zone.

Establish sufficient perimeter security and access control to keep unauthorized persons out of hazardous areas.

Provide medical care and rehabilitation as needed to support the responders, following the guidance contained in this HASP.

Chemical Hazard Communication

Each agency and contractor will establish a hazard communication program in conformance with 29 CFR 1910.1200. Safety data sheets (SDS) will be maintained by the individual employers, and will be shared upon request with employees, other agencies, and other contractors. Employees shall be informed of the existence and location of SDSs. Containers of chemicals shall be labeled with the contents, hazards, and target organs.

Hazardous Materials Spills, Leaks, and Releases (including oil)

The release, spill, or leak of any hazardous material (including oil) shall be reported to US EPA and/or USCG for appropriate handling. The cleanup of hazardous materials releases will be handled by properly trained and protected individuals in accordance with the requirements of 29 CFR 1910.120.

In case of unanticipated discoveries, such as tanks, drums, or cylinders of hazardous materials, or unexploded ordinance and/or ammunition, all work shall cease in the vicinity, the area shall be cordoned off, and appropriate public safety agencies shall be summoned.

Confined Space Entry

Work involving confined space entry shall conform to 29 CFR 1910.146. Any agency or contractor that will be performing confined space entry shall develop a specific plan and conduct a JHA prior to commencing work. Plans shall include space evaluation and established acceptable entry conditions; a permit system; training for entrants, attendants, and supervisors; atmospheric monitoring; and rescue / emergency services.

Medical Services and First Aid

First aid services and provisions for medical care shall be made available by the employers (agencies and contractors) for every employee. Employers shall evaluate work areas and make arrangements for swift access to emergency medical care. It should be noted that in some affected areas, public hospitals and emergency rooms may not be open or may have degraded levels of service. Additionally, many areas do not currently have reliable 911 services or timely emergency service response. Where the availability of emergency services cannot be assured, employers shall make alternate arrangements to include contracting medical care providers (including on-site trailers if necessary), coordinating with other agencies that have assets available, or contracting with private ambulance services.

Each agency and contractor shall develop and maintain a list of current emergency contact numbers, including police, fire, and EMS, as well as designated employer representatives to be notified in case of emergency.

Quick drenching shower facilities and eye washes (providing clean water) shall be provided as needed for workers exposed to injurious or corrosive chemicals.

Where employees may need to be decontaminated following exposure to chemical or biological hazards, the employer (agency or contractor) shall make arrangements for suitable facilities, including a reliable source of clean water. If employees need to be transported by emergency medical services due to life-saving medical priorities prior to being fully decontaminated, the ambulance crew and receiving hospital personnel shall be informed of the patient's status and contaminants. If time permits, at least outer garments should be removed and gross decontamination performed. The patient may also be wrapped in a suitable barrier, if not medically contraindicated.

Psychological First Aid

Workers exposed to a traumatic incident, such as the widespread devastation wrought by hurricane Harvey, or the sight of bodies, may suffer psychological stress. It is important to recognize that this reaction is normal, and such feelings should be addressed and not ignored. Workers should be encouraged to talk about their feelings, maintain normal eating and sleeping habits, try to exercise and eat well balanced meals, drink plenty of non-caffeinated non-alcoholic beverages, and take breaks when possible. Workers should communicate with friends,

[5]PELs are established by OSHA. TLVs are published by the American Conference of Governmental Industrial Hygienists (ACGIH).

family, and loved ones, and also reach out to community-or faith-based organizations. Employers (agencies and contractors) should make available counseling and encourage workers to make use of it.

Alcohol and Drug Abuse

Persons who are under the influence of alcohol, certain prescription medications, or illicit drugs may present a safety hazard to themselves and others. Employers (agencies and contractors) shall establish policies governing alcohol and drug abuse. Operations that are under the jurisdiction of the Department of Transportation shall also comply with their regulations regarding alcohol and drugs.

Work-Rest Regimen, Fatigue

Extended work shifts, unusual work hours, and lack of sleep all contribute to fatigue. Fatigue increases the likelihood of inattentiveness, which may cause accidents. Fatigue also contributes to stress. Employers (agencies and contractors) should take fatigue issues into account when scheduling work shifts.

A work-rest regimen is also an important element in the prevention of heat stress.

Heat or Cold Stress[6]

Excessive heat or cold presents a serious hazard for employees, especially when coupled with the high humidity present in the Gulf States. When the body is unable to cool itself by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death. High temperature and humidity, direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines, and inadequate tolerance for hot environments are all factors that can lead to heat stress.

Cold presents a hypothermia hazard, causing potential frost bite and subsequent tissue damage especially to the hands, feet and face. Prolonged exposure to cold and/or prolonged immersion in water, without adequate protective clothing also causes body temperature to drop and may potentially lead to death. Also, excessive clothing may cause the body to sweat and further present a cold hazard due to moist clothing.

To help prevent heat and cold stress, workers and supervisors should be familiar with the signs and symptoms of heat and cold related illnesses, and should be monitored for same. Direct sun or other heat sources should be blocked, if possible. Cooling fans, air conditioning, or misting should be provided when possible. Regular rest periods should be permitted. Workers should drink about one cup of water every 15 minutes; avoid alcohol, caffeinated drinks, or heavy meals. Workers should wear lightweight, light-colored, loose-fitting clothes. Limited exposure to cold and proper attire/PPE needs to be addressed.

If a worker is exhibiting the signs or symptoms of heat or cold related illnesses, summon emergency medical services at once. While waiting for help to arrive, move the worker to a cool shaded area, or warm area if cold stress is the cause. Loosen or remove heavy clothing. Provide cool drinking water. Fan and mist the worker with water, or cover with dry warm blankets if cold stress is the cause of concern.

Animal and Plant Hazards

Flora and fauna may present hazards to workers. Native wildlife (both animals and plants) may be poisonous or venomous, or may otherwise injure workers. In the wake of the hurricane, many wild and domestic animals have been displaced from their normal habitats or homes. This may cause an increased potential for interaction between animals and workers. To help avoid insect and snake bites, observe areas before beginning work to locate nests or creatures. Try to avoid working in standing water. Use caution before reaching into voids or other spaces. If possible, map areas of Corpus Christi problem areas and warn workers. Workers should use insect repellent containing DEET; repellent should be reapplied according to the manufacturers instructions. Workers should be encouraged to wear long pants and sleeves, if practical (balanced with heat stress concerns). Identify persons with

[6]Reference: OSHA Publication 3154, Heat Stress Quick Card, and hypothermia publication at <https://www.osha.gov/dte/grant_materials/fy12/sh-23584-12/Hypothermia.pdf>

allergies and either administratively control exposure or coordinate with medical authorities for first aid supplies (including auto-injector medications, if indicated). Educate workers on the identification of poisonous plants and dangerous animals and steps to take to lessen this hazard. Provide vector control, where feasible.

Sanitation

Employers (agencies and contractors) shall provide or arrange for adequate facilities for their workers (hand washing and restrooms). The exercise of good personal hygiene can help minimize worker exposure to health hazards and contaminants.

- Workers should wash their hands before eating, drinking, or smoking, and before and after using the toilet.
- Appropriate vector control measures should be put in place. Workers should utilize insect repellent containing DEET.
- Workers should avoid creating dust, work upwind whenever possible, and use appropriate PPE per their employers JHAs. Replace PPE that is worn or torn.
- Workers should seek medical attention or self-treat any minor wounds, as appropriate.
- Workers should be current on all recommended vaccinations, per their employer's medical direction.
- Workers should avoid eating, drinking, or smoking in areas containing debris, floodwaters, or sludge remaining in previously flooded areas.
- Only drink water from sources that are proven to be potable. Avoid consuming food or beverages that were exposed to flood waters or perishables that may have spoiled.
- Exercise good housekeeping. Minimize accumulations of trash and keep garbage in closed containers. Proper housekeeping also reduces potential slip/trip/fall hazards.
- Temporary labor camps should conform to the requirements in 29 CFR 1910.142.

Heavy/Construction Equipment

A competent person shall inspect all equipment prior to use. Deficiencies shall be corrected before use, or the equipment must be tagged out of service. Operators shall have the experience, skills, and knowledge to safely operate the equipment assigned. While operating the equipment, operators shall not engage in any activities that may distract them from the task at hand. Equipment used for demolition shall be equipped with a demolition cage, wire screen, or equivalent structure to prevent materials or debris from breaking cab windows. Operable audible reverse indicators (i.e., backup alarms) shall be installed on all equipment. Spotters shall be used whenever necessary based on site conditions and visibility from the cab. Any swing radius that presents a hazard to employees shall be barricaded or otherwise protected.

Ground personnel and pedestrians shall maintain a safe distance from heavy equipment, taking care to stay out of blind spots. Personnel shall wear high visibility garments, and should make eye contact with the operator before approaching.

Heavy equipment that is worked long shifts for an extended period of time may suffer breakdowns. Breakdowns and machine failures present a safety hazard as well as slowing the overall pace of work. Sufficient downtime for preventive maintenance needs to be considered during the planning cycle. Also refer to specific sections of this HASP addressing cranes and rigging.

Contractor Staging Areas

Contractors shall plan for and establish staging areas consistent with their assigned work. Staging areas shall provide sufficient room for the parking of equipment and vehicles. Office space, sanitation facilities, medical and first aid care, storage for PPE and other safety equipment, and other relevant factors shall all be taken into account. To the extent possible, the staging area should be laid out with traffic flow and pedestrian safety in mind. Staging areas should be provided with adequate lighting and security, and be graded and constructed for local weather conditions. If possible, staging areas should be located to minimize travel time to the work location.

Worker Transportation and Parking

Worker transportation to the jobsite and around the jobsite present safety hazards that can be reduced through proper planning. Workers who drive in the course of their duties shall possess valid licenses appropriate for the vehicles they are driving (including a commercial drivers license, if required). Drivers shall comply with all applicable traffic

safety regulations. Employers shall ensure compliance with state laws governing the use of seat belts. Vehicles should be equipped with a sufficient number of seats for each passenger.

Extra care should be exercised when driving on roads that may have been damaged by the hurricane. Roads may be washed out, undermined, or impassable. If possible, avoid driving into standing water due to the potential for unseen hazards. Be alert for debris and down power lines. Traffic may be heavy, especially around checkpoints. Traffic signs may be knocked down or not visible, and traffic signal lights may be inoperative. Street signs and landmarks may not be available. Allow extra time when traveling and drive defensively.

Sufficient parking areas should be arranged for workers in a location convenient to where they report for work. Parking areas shall be adequately lit and graded.

Fall Protection and Falling Object Protection

Employees shall be protected from falls greater than six feet to a lower level. Fall protection such as guardrails, coverings over floor holes, or personal fall arrest systems shall be installed conforming to 29 CFR 1926 Subpart M.

A qualified person must determine if the walking / working surface is adequate to support the weight of workers, tools, and materials. This is especially important in areas that have been compromised by floodwaters or suffered structural damage from high winds.

Use of scaffolds shall conform to 29 CFR 1926 Subpart L. Use of ladders shall conform to 29 CFR 1926 Subpart X. The use of aerial lifts and scissor lifts shall conform to the applicable portions of 29 CFR 1926 as well as relevant ANSI standards.

Workers shall pay extra attention to the walking / working surfaces to minimize slip/trip/fall hazards. Extra care should be exercised when stepping into areas that are unstable or uneven, such as a debris field, or where the surface cannot be visualized (i.e., if covered by water).

Objects that may dislodge and fall, especially broken glass, present a serious hazard to employees. Whenever possible, such objects or glass should be removed before employees work beneath them. If objects cannot be removed, then controls such as debris netting, sidewalk sheds, canopies, or catch platforms shall be installed.

Note: Specific applications, such as Blue Tarping, are addressed in a separate section of this HASP.

Demolition

In addition to the requirements for heavy equipment use, demolition activities shall conform to 29 CFR 1926 Subpart T. Employees shall not enter seriously damaged buildings or structures until a qualified person determines their safety and integrity. A survey shall be conducted prior to the commencement of demolition. All utilities shall be disconnected.

Material Handling and Storage

The operation of powered industrial trucks shall conform to 29 CFR 1910.178, including provisions for operator training. Material storage shall conform to 29 CFR 1926.250.

Electrical Safety

All electrical equipment, including generators, extension cords, lighting, and power tools, shall meet applicable OSHA, NFPA, and NEC standards. Ground fault circuit interrupters (GFCI) shall be installed on all 15A and 20A temporary wiring circuits.

Be aware of carbon monoxide (CO) build-up if generators are used in areas with limited ventilation.

Fire Safety

Adequate fire extinguishers shall be provided at work sites and/or on work vehicles. JHAs should take into account the potential for fire and the need for a fire prevention plan. Consideration should be given to impediments such as

limited public water supply (i.e., hydrants out of service, low water pressure), lack of 911 service, and delays in fire department response time.

When hot work is performed, a fire watch shall be provided. Hot work shall not be performed where hazardous atmospheres exist.

Safe storage areas for flammable and combustible liquids shall be provided. Such areas shall be clearly marked, and not located in a depression or low area. Ignition sources shall be at least 25 feet away from such areas; smoking shall be prohibited. Containers shall be bonded and grounded during dispensing.

Smoking shall be prohibited in areas where there is a fire hazard, as well as where smoking may cause ingestion of contaminants.

Hand and Power Tools

Tools shall be inspected prior to use. Damaged or defective tools shall be repaired or taken out of service. Tools should only be used for their intended purpose.

Be aware of carbon monoxide (CO) build-up if internal combustion engines are used in areas with limited ventilation.

Illumination

Adequate lighting shall be provided. Refer to 29 CFR 1926 Subpart C for guidance.

Specific Safety & Health Protections

The following sections outline basic safety & health hazards and suggested protective measures specific to a range of identified tasks and operations applicable to the most common recovery tasks. These are intended to form the baseline for safety & health protection and should be consulted when conducting a JHA. These tasks are not intended to be all-inclusive. They serve as a reference for agencies and contractors conducting their own JHAs. Non-routine tasks require specific JHAs. Referenced and other applicable standards should be consulted for all relevant details. In case of doubt, consult with a qualified safety and health professional.

Each task or operation is addressed as follows:

- Brief overview of task or operation
- Synopsis of primary safety and health hazards
- Engineering controls, work practices or administrative controls, personal protective equipment (PPE)

Task Descriptions

Task: Diving

Description: Diving underwater to assess damage and to retrieve victims

Hazards: Divers are exposed to drowning and disease from contact with contaminated water.

Controls: Follow safe diving practices identified in 29 CFR 1910.420 and 29 CFR 1926.1080. Ensure that each diver has the necessary experience and/or training to perform the assigned task.

Provide each diver with a briefing on the tasks, safety procedures, unusual hazards or environmental conditions, and modifications made to the operating procedures.
Terminate the dive when the diver requests it, if the diver fails to respond correctly, or when the diver begins to use the reserve breathing gas. Use certified air tanks and approved body suits. Use body creams and provide decontamination schedule frequent rest periods.

Task: Water/sewer distribution/treatment Sampling

Description: The sampling activities in support of restoration of water and sewer treatment facilities

Hazards: Entry into confined spaces, falls, electrical, struck by, heavy equipment usage, exposure to chemicals, caustics, vapors, and gases as well as biologically contaminated water and surfaces, power tools, excavation/trenching hazards, heat stress, bites/stings, mammal/snake, and vehicular traffic

Controls: Extra care must be taken to use proper personal hygiene practices including; hand washing/sanitizing, equipment decontamination, and proper use of appropriate personal protective equipment. Proper ventilation is required prior to entering confined spaces, as well as a confined space permit system in accordance with 29 CFR 1910.146. Use fall protection systems when working from heights. Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers. Appropriate respiratory protection must be used as needed. Use of a ground fault circuit interrupter protected source or use of an assured equipment grounding program. Wear PPE to include, hard hats, gloves, protective clothing, safety work boots. Operate cranes in accordance with 29 CFR 1926.550. Proper rigging of loads in accordance with 29 CFR 1926.251. Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600. Each employee in a trench shall be protected from a cave-in by an adequate protective system in accordance with 29 CFR 1926.651 and 1926.652. Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD). Inoculations against Hepatitis A and B, and tetanus.

Task: Tree trimming

Description: To cut and/or remove limbs and trees from impacted areas

Hazard: Electrical, falls from heights, injury from contact with power tools such as chain saws, noise, being struck by tree limbs, eye injuries from flying chips, insect bites/stings, mammal/snake bites, heat stress, fatigue, vehicular traffic.

Controls: Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket. Fall protection systems while working in trees. Ensure chain saws are properly maintained. Wear proper PPE including safety glasses, gloves, ear protection, sturdy work shoes, and chaps (for those operating power saws). Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Debris Removal

Description: Debris removed from roads and other areas to provide for access to power restoration crews, emergency access, and general transportation and use. The tasks include picking up, clearing, separating, and removing debris.

Hazards: Cuts, punctures, noise, struck by, heavy equipment usage, electrical hazards, power tool hazards, flammable liquids, heat stress, insect bites/stings, mammal/snake bites, vehicular traffic.

Controls: Task specific training. Use of task specific PPE to include head protection, foot protection, eye protection, hearing protection, hand protection (heavy gloves for those picking up debris), chaps (for those operating chain saws). Operate cranes in accordance with 29 CFR 1926.550. Proper rigging of loads in accordance with 29 CFR 1926.251 Properly operate and inspect heavy equipment in accordance with CFR 1926.600. Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers. Prior to work inspect area for hazardous chemical containers. Use only approved containers and portable tanks for storing and handling fire extinguishers. Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Blue Tarping

Description: Inspect roofs and install blue tarping as temporary protection from the elements. The tasks include inspections, setting up access (ladders), and installing the blue tarp.

Hazards: Falls, electrical, eye hazards, power tools, e.g. nail guns, heat stress, insect bites/stings, mammal/snake bites

Controls: Provide fall protection where feasible, at a minimum provide monitors. Proper set up and use of ladders in accordance with 29 CFR 1926.1053. Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers. PPE to include eye protection and work boots. Conduct task specific training. Hand and power tool safety.

Task: Crane operations

Description: Cranes will be used to lift loads and/or hoist personnel

Hazards: Workers exposed to hazards of being struck by crane structure while crane is swinging or from materials falling from overhead; electrocution from contact with overhead energized power lines; boom failure; and/or fall from heights, crane tipping hazards

Controls: Operate cranes in accordance with 29 CFR 1926.550. Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be posted on equipment. Equipment shall be inspected by a competent person before and during each use, deficiencies should be corrected.

Accessible swing areas of the rear rotating superstructure should be barricaded. Rigging of loads must conform to 1926.251, Rigging Equipment for Material Handling. Maintain inspection, maintenance, and wire rope reports (operators). Contractors/subcontractors shall develop a Lift Plan for each lift in accordance with the manufacturers load chart. Contractors/subcontractors shall adhere to 29 CFR 1926.550(g) when hoisting personnel. All hoisting and rigging operations shall cease if adverse weather conditions affect the safe operation of cranes, including lightning and wind in excess of 25mph. Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers. Cranes must be placed on firm foundations and uniformly level within 1% of level grade.

Task: Building Clean Up

Description: The clean up of a building or facility that requires only minor clean up from mud and silt caused by the flooding.

Hazards: The clean up of buildings or facilities with chemicals and disinfectants that will expose the workers to chemical exposures, skin irritation, possible eye irritation, cuts from broken glass, slips, trips, and falls from debris on floor, heat stress.

Controls: Use of proper personal protective equipment to include impervious foot protection, eye protection, and hand protection. Elimination of debris on floors and walkways. Proper illumination of work areas.

Task: Demolition

Description: Bring down existing/damaged beyond repair structures or parts of structures that will be repaired

Hazards: Falls, struck by, rollover hazards, electrical, potential exposure to hazardous building materials such as asbestos, fiberglass and lead, slips and trips, heat stress, insect bites/stings, mammal/snake bites

Controls: Demolition in accordance with 29 CFR 1926 Subpart T. Use of fall protection systems when working from heights. Proper use of ladders in accordance with 29 CFR 1926.1053. Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket. Operate cranes in accordance with 29 CFR 1926.550. Proper rigging of loads in accordance with 29 CFR 1926.251. Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600.
Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers. Task specific training. Characterize the site for the presence of hazardous materials, such as asbestos, fiberglass, lead, silica. Provide task specific PPE to include head, eye, face, foot, hand, hearing, and respiratory protection. If dusty conditions exist, wetting the debris can limit the dust generated.

Task: Building/residential construction

Description: Constructing new/replacement building and doing repairs on damaged but repairable structures.

Hazards: Falls, electrical, hazards associated with the use of power tools, slips, trips, insect bites/stings, mammal/snake bites, heat stress, struck by, trenching, and vehicular traffic.

Controls: Use of fall protection systems when working from heights. Erect scaffolding under the supervision of a competent person. Use ladders in accordance with 29 CFR 1926.1053.
Use of a ground fault circuit interrupter protected source or use of an assured equipment grounding program. Wear PPE to include head protection and eye protection. Provide training in safe work practices. Good housekeeping principles to eliminate tripping hazards. Each employee in a trench shall be protected from a cave-in by an adequate protective system in accordance with 29 CFR 1926.651 and 1926.652. Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Maritime/ports/docks

Description: The repair of ports and docks that have suffered damage.

Hazards: Fall, struck by, drowning, welding, heavy construction equipment, rigging, electrical, air borne contaminates, power tools, cargo handling, noise, heat stress, insect bites/stings, mammal/snake bites, vehicular traffic

Controls: Proper use of ladders in accordance with 29 CFR 1926.1053
Operate aerial lifts in accordance with 29 CFR 1926.453, including ensuring employees are trained and authorized, brakes are set and outriggers used, boom and basket limits are not exceeded, personal fall protection is used when required, and no devices are used to raise employees above the basket.
Operate cranes in accordance with 29 CFR 1926.550.
Proper rigging of loads in accordance with 29 CFR 1926.251
Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600. Provide training for powered industrial truck drivers. Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers. Use of a ground fault circuit interrupter protected source or use of an assured equipment grounding program. Task specific training. Task specific PPE to include head protection, eye protection, hearing protection, foot protection, PPE for welders Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD).

Task: Body Retrieval

Description: To locate and remove human remains

Hazards: Potential hazards in this work include injuries from slips, trips and falls from uneven surfaces, bloodborne pathogens such as hepatitis, HIV, shigella, and salmonella, hazards related to use of boats while retrieving human remains, drowning, insect bites/stings, mammal/snake bites, and heat stress.

Controls: Develop an exposure control plan as required by 29 CFR 1030.
Wear proper PPE including appropriate protective garments and gloves to prevent contact with potentially infectious materials. Latex or nitrile gloves may require outer protective gloves to prevent rips or tears. Include sturdy work shoes to protect against sharp debris, and a plastic face shield or combination of eye protection such as indirectly vented safety goggles. Maintain proper hygiene and cleanse all contaminated skin. Give prompt care to any wounds sustained, including immediate cleansing with soap and clean water. Workers should be current on all recommended vaccinations per their employer's medical direction. Be aware of submerged obstacles and uneven walking surfaces. Use grappling poles to retrieve floating bodies and follow safe lifting techniques when moving bodies

Task: Food Service and Distribution for Responders

Description:	Use forklift trucks to move pallets of food and cleaning supplies, cooking and serving hot meals, cold meals and distribution of MREs (meals ready to eat) for responders
Hazards:	Struck-by, slips, trips, electrical, carbon monoxide, lifting heavy loads, awkward postures, heat stress, and hot surfaces
Controls:	Forklift truck training. Good housekeeping practices including frequent cleaning of floors and slip resistant surfaces when available. GFCI protection for electrical circuits, proper installation and placement of generators. Training on lifting techniques, adequate help to share lifting loads. Heat resistant gloves for handling hot pans, otherwise not applicable

Task: Temporary Labor Camps

Description:	Set up temporary labor camps for responders. This is basically a construction project. It includes erecting large tents (the size of those normally seen for a large circus), driving forklift trucks, putting down wood floors, placing portable stoves, sinks, generators, showers, toilets, stringing temporary wiring and lights, setting up tables, and cots for communal living..
Hazards:	Struck-by, electrical, carbon monoxide, slips, trips, lifting heavy loads, awkward postures, heat stress
Controls:	Forklift truck training. GFCI protection for electrical circuits, proper installation and placement of generators, use of electrically safe hand tools, and heavy-duty extension cords. Good housekeeping practices including frequent cleaning of floors. Educate on proper lifting techniques.

Task: Sanitation

Description: Provide recovery workers adequate drinking water, appropriate sanitation facilities or means of access to such facilities for bodily functions and washing facilities for necessary personal sanitation.

Hazard: Workers exposed to dehydration from working in high heat and biological infection from inadequate toilet/washing facilities.

Controls: Supply appropriate supply of potable (drinking) water and individual means of dispensing the water such as a supply of paper cups, and/or provide bottled water. Provide portable toilets equipped washing facilities and supplies of soap and towels. Clean as necessary to maintain in a sanitary condition.

Task: Public Safety Agencies/Police/Fire/EMS/Coroner

Description: Directing traffic, rescuing evacuees, handling displaced pets, processing and handling evacuees, settling violent disputes, arresting criminals, performing emergency medical services for injured and ill residents, processing and handling human remains

Hazards: Vehicular traffic, drowning, excessive lifting, awkward postures, cumulative trauma disorders, violence in the workplace, bloodborne pathogens viral/bacterial illnesses transmitted by surface contact, burns, hazardous chemicals, heat stress, insect bites/stings, mammal/snake bites

Controls: Training on traffic control, use of high visibility vest, violent situations, swimming. Bloodborne pathogen exposure control plan. Workers should be current on all recommended vaccinations per their employer's medical direction. Decontamination of personnel/equipment where needed. Training on proper lifting techniques and use adequate help for lifting, sunscreen, mosquito repellant, proper hand hygiene, psychological first aid debriefing. Task specific PPE as needed to include gloves, face shield or goggles/surgical masks for splash hazards, safety vests/glasses, bulletproof vests, bunker gear, proper respirators, rubber boots.

Task: Mobilization/Demobilization (Driving)

Description: This task hazard analysis refers the process of mobilizing and demobilizing personnel and equipment to complete response objectives including reconnaissance around the site.

Hazards: The primary hazard involves driving unfamiliar/large vehicles to destinations in areas that are unfamiliar to the driver. Due to the significance of the incident, many drivers may work extended hours which increases the risk of an accident. Workers will drive into areas with unknown debris, muddy/slick roads, and various other hazards. Other hazards include; Electrical Hazards, Driving Hazards, Illumination (travel pre-dawn/post dusk) Parking (tight quarters), Inclement Weather, Stress/Fatigue, Heat/Cold Stress Structural Instability (buildings/roads), Fire Explosions

Controls: Buddy System, Current Driver's License, first aid/BBP kit, Fire extinguisher, Cell phone, cell phone booster, Power Inverter, Radio, Spare tire and fix-a-flat, Jumper cables, Water (minimum 1 bottle per hour planned to work), GPS, Map, Emergency Flares, Flash Light, spare batteries, Bottled water, nonperishable foods, such as granola bars and/or MREs, rain gear. In cold climates a blanket per person, matches or lighters and towels, extra socks, and gloves. Accomplish thorough check of vehicle prior to departure. Defensive Driving Training required.

Task: Aircraft Operations

Description:	This task hazard analysis refers to the use of aircraft during the process of an emergency response to a disaster. This applies primarily to EPA and Contractor personnel as passengers in fixed wing and rotorcraft type aircraft during flight operations over both land and water.
Hazards:	Aviation fuel, Equipment hazards (spinning rotors and/or propellers, airport and/or street traffic, etc.), Long working hours, Long travel distances (times), Illumination (travel pre-dawn and post dusk), Parking (tight quarters)
Controls:	Get proper sleep prior to traveling. If you are tired, postpone travel, or travel with a companion. En-route to airport, no travel through unsecured areas will be permitted without a buddy system. Check State Police website prior to travel to review road closures and hazards. Inspect personal vehicles PRIOR to travel to airport to verify they are in good operating condition (complete vehicle inspection checklist). Always let supervisor know when and where you are traveling. Always carry communications (cell phone or radio, and check in when possible). When in or near aircraft, follow directions of Pilot In Command at all times. Never exit aircraft while rotors or propellers are moving. Aircraft Safety Training required.

Task Name: SAMPLING / RECONNAISSANCE	TASK HAZARD ANALYSIS (THA) EPA REGION 6 WATER OPERATIONS Date: August 2017

TASK NAME

SAMPLING AND/OR RECON OPS

Task Description

This task hazard analysis refers the process of sampling or reconnaissance operations which involves water operations. This THA should be used in addition to any THA for specific tasks in the field.

Chemical Hazards	Physical Hazards	Biological Hazards	Radiological Hazards
Unknown – incident specific (see HASP)	Drowning Inclement Weather Stress/Fatigue Heat/Cold Stress/Hypothermia Injury from falling into the water (slips, trips, falls) Water conditions (water level too high or low, currents, subsurface obstructions) Operation of vessel (proper training for use of boat)	• Poisonous plants (while getting in and out of boat) • Animals, alligators • Snakes • Insects • Mosquitoes	Unknown

Minimum PPE	Other Equipment
-USCG-approved Personal Flotation Device- one type I, II, III, or IV for each person (Class A - less than 16 feet) One type I, II, or III for each person plus one Type IV available to be thrown (Class 1 – 16 feet to less than 26 feet) - appropriate footwear - clothing to provide protection from extremes of heat and cold - water resistant outer garment	-First aid kit -Fire extinguisher -Cell phone -Radio -BBP kit -Maps -Water -GPS -Binoculars -Signaling device (whistle, bell) -Visual distress signals
Minimum Training	
24 Hour HAZWOPER & 8hr Annual Refresher If operating the boat – proper training and/or license for type/size of boat being used; boat safety training required for all operators/passengers.	

Applicable FLD/ OSHA REGS	Safety Considerations
-FLD 02 Inclement Weather -FLD 05 Heat Stress Prevention & Monitoring -FLD 06 Cold Stress -FLD07 Wet Feet -FLD 10 Manual Lifting of Heavy Objects -FLD 15 Remote Areas -FLD18 Operation and Use of Boats -FLD 19 Working Over or Near Water -FLD 22 Heavy Equipment Operation -FLD 32 Fire Extinguisher -FLD41 Hand and Emergency Signals -FLD 44 Biological Hazard	**ACCOUNTABILITY -** CHECK IN or PHONE IN when you are expected to arrive. **Public** - Be aware that sleeplessness, anxiety, anger, hyperactivity, mild depression, or lethargy is normal for response from victims. **Hypothermia – Core body temp below 95 F.** Immersion in water, especially flowing water, can sap heat away from the body. Prolonged immersion in water at 50 degrees F can lead to death in as little as one hour, and water temperatures near freezing can cause death in as little as 15 minutes. Replace wet clothing with dry, and get to a warm place as soon as possible. **Hyperthermia**/heat-related problems, including heat stroke, heat exhaustion, heat cramps, and fainting. Drink plenty of fluids, wear light-colored, loose- fitting clothing, avoid caffeine, and **DO NOT WAIT TO GET THIRSTY**. **STRESS/FATIGUE** Follow work/rest ration 2:1; do not drive Fatigue dulls concentration and slows reaction time. If possible, take breaks to stretch your body. Drink plenty of water (it will be hot). Avoid the following: 1.Overloading, overpowering, and improper trim, 2. High speed turns, especially in rough water, 3. failure to keep a sharp lookout for obstructions, 4. Going out in bad weather,5. standing in a moving boat, 6. having too much weight too high in the boat, 7. leaks in the fuel system, 8. going too far offshore

Sampling Procedures
Sampling apparatus and equipment should be weighted and the weight marked on the outside surface for convenience in balancing the load in a boat. I will also make it easier to calculate the total load being placed in a boat and to avoid overloading. In figuring the load on the boat, remember to add the estimated weight of samples to be gathered on the trip.

U.S. EPA CLASS A VESSEL UTILIZATION FORM

In signing below, I certify that I, as the Vessel Captain, am a government employee, I am current on all required watercraft training, and that all necessary/required travel authorizations have been approved including the completion/submission of a Float Plan.

Vessel Identification/Description:_____

Name of Vessel Captain/Phone Number:_____

Vessel Captain Signature/Date:_____

Pre-Trip Vessel Safety Checklist

____ The Vessel status is "In-Service" ("Out-Of-Service" vessels will be red tagged on the trailer hitch).

____ Trailer/Towing

- Brakes, Brakes lights and other lights are operational (if equipped)
- Tires in good condition (sufficient tread, properly inflated)
- Trailer frame in good condition
- Tow ball and coupler are the correct sizes, bolted-on tightly, and locked and secured properly
- The trailer is loaded evenly (front to rear/side to side)
- The trailer safety chains are attached to the frame of the tow vehicle. (crisscrossing under the coupler)
- Towing vehicle has large towing review mirrors and sufficient towing capacity for the trailer in-tow

____ Vessel Crew Has Completed Required Training Course(s)

____ A FLOAT PLAN has Been Filed for the Trip (An Onshore Person Has Been Designated to Check Out/In with)

____ Sufficient Fuel Onboard

- Permanent fuel tanks properly ventilated
- Portable fuel tanks in good condition, sealed, and free of leaks

____ Weather Forecast Checked and Weather Sufficient for Safe Boat Operation

____ Safety Equipment/Boat Safety Kit Onboard

Kit includes:

- Fire Extinguisher (B-1), Signal Flares, Signal Mirror, Signal Whistle
- Type V PFD cushion for throwing
- Manual bailer, Dock Line
- Air horn, Flash Light
- First Aid Kit – (Ensure kit is complete)

____ Personal Flotation Devices (PFD) for Each Person Onboard

____ Fire Deterrent Systems/Ventilation

- Backfire Flame Control in place (Gas powered Inboard/Outboard or Inboard Motors)
- Ventilation system operable (Gasoline powered engine in closed compartment – Run blower for 5 minutes before starting engine)

____ Navigation Lights Are Operable (If operation at night or in fog is possible)

- All boats must be able to display navigation lights between sunset and sunrise and in conditions of reduced visibility

(red port light, green starboard light, white masthead/stern light or a white all around light

- Boats 16 feet or more in length must have properly installed, working navigation lights and an all- around anchor light capable of being lit independently from the red/green/white "running" lights.

____ Anchor and Anchor Line Present and in Good Condition

____ Overall Condition/Deck

- Hull/Deck in good condition
- Free from fire hazards
- Bilge Clean
- Engine size does not exceed capacity plate/rating of boat

____ Electrical / Fuel Systems in Good Condition

- Protected from rain or water spray
- Wiring in good condition, properly installed and no exposed areas or deteriorated insulation
- Batteries secured and terminals covered to prevent accidental arcing
- If installed, self-circling or kill switch mechanism in proper working order

____ Emergency Communications Available (*e.g.,* Cell Phone or Radio)
NOTE: CELL PHONE COVERAGE MAY NOT EXIST

EPA Region 6 Boat Safety Form

Date:	Time:	Hull#:
Company/Agency:		

This form must be filled out prior to EVERY launch of a boat into the water. The responsibility of completing this form lies with EVERYONE who operates and rides in a boat during this response. Please turn in all completed forms to the Safety Officer in the Incident Command Post at the end of every work day. The following must be covered with all passengers during the pre-launch brief:

First, the Captain is responsible for the safety of the passengers and equipment on the boat. This includes being aware of the area around the boat and maintaining a high level of alertness.

Second, its passengers are responsible for watching for hazards in and around the boat and alerting the Captain to these conditions.

Third, all occupants are to don PFDs.

Fourth, boats must meet the minimum U.S. Coast Guard safety requirements for recreational vessels. The following safety gear must be on board at all times while operating. Discuss and point out the following items on board:

- B-1 type approved fire extinguisher.
- Cell Phone/Radio Communication
- Sound producing device (horn or whistle)

Fifth, the location of passengers inside the air boat is dependent upon the number of passengers, their weight/size and the vessel's operating conditions. The final seating arrangement shall be decided by the Captain and discussed with all passengers based on these and other factors.

SIGNATORY AGREEMENT

My signature acknowledges that I have been briefed on, understand and will fully comply with guidance on this form. I agree to wear any required safety equipment as well as ensure my personal safety and the safety of my fellow passengers at all times.

Passenger: _____ _____
print signature

Passenger: _____ _____
print signature

Passenger: _____ _____
print signature

Captain: _____ _____
print signature

HEALTH AND SAFETY PLAN

GENERAL INFORMATION		
	Company/Facility Name or Site Location:	**Hurricane Harvey Response** **Texas South Coastal Areas**
	Description of Activities:	**Mobilization, Reconnaissance, Sampling, Demobilization**
	Date(s)	**Beginning August 28, 2017**
	Personnel:	**(See ICS Form 204 and IAP)**

EMERGENCY INFORMATION			
	Non-911, Non-Emergency Phone: (Direct to police, fire, and hospital)	**Corpus Christi Police:** (361) 886-2600 **Corpus Christi Fire:** (361) 826-3932 **Hospital: (361) 761-1000**	
	Site Specific Emergency Responder Procedures:	**Dial 911 in case of an emergency**	
	Medical Facilities: (Name & Address)	**Hospital:** **Doctors Regional Emergency Center** **3315 South Alameda Street** **Corpus Christi, Texas 78411**	**Medical Center**
	Directions to Local Medical Facilities:	**(see attached maps and directions)**	

EPA RESOURCESS		Name	Work Phone	Cell
	R6 SHEMP Manager:	**Kendra Gomez**	**214-665-7225**	**214-205-7643**
	Workmen's Comp Manager:	**Yolanda Nixon**	**214-665-2738**	**214-402-0230**
	Safety Officer:	**David Eppler**	**214-665-6529**	**214-733-4676** **214-587-2678**

HAZARDS / SAFETY				
	Applicable JHA(s): **(attached)**	**Sampling/Reconnaissance,**		
	Check Potential Hazards:			
	☐ **Radiation**	☒ **Toxics**	☒ **Fire/Explosion**	☐**Corrosives**
	☐ **O_2 Deficiency**	☐ **Noise**	☒ **Physical**	☒**Biological**
	☐ **Dusts**	☒ **Heat/Cold Stress**	☒**Other: Drowning**	
	Hazard Description:	**Elevated water levels due to substantial flooding of low lying areas.** **Drowning, Hypothermia** **Floating debris and 'wrack lines'.** **Orphan containers.** **Contaminated water (gasoline, oil, biologics, other chemicals)**		
	Safety / Monitoring Equipment Required: **(list equipment)**	**Appropriate Personal Floatation Device (PFD), Level D equipment including: safety glasses, steel toe boots and/or rubbers boots, hearing protection, hard hat, safety road vest.**		
	Accident Prevention:	**All site safety procedures shall be followed. Boat Safety training mandatory for boat operations. Areas with potential exposure to chemical, physical, and explosive hazards shall be avoided if at all possible. Team members shall not enter confined spaces or areas with potential unexploded ordinance. In case of emergency, all inspection staff shall exit the area and allow site personnel to contain and manage the incident.**		
	Safety Supplies:	**(reference attached JHAs)**		

			FS-6700-7 (2/98)
U. S. Environmental Protection Agency TASK HAZARD ANALYSIS (THA)	1. WORK PROJECT/ACTIVITY	2. LOCATION	3. UNIT
	UTILITY VEHICLE USE	Corpus Christi Area	Reconaisance
	4. NAME OF AUTHOR	5. JOB TITLE	6. DATE PREPARED
	DAVID EPPLER	SAFETY OFFICER	10/20/2016

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
PRE-OPERATION INSPECTION	Mechanical failure affecting controls & operation	1. Conduct pre-trip inspection prior to use. Use the T-CLOC safety check a. T= Tires and Wheels b. C = Controls and Cables c. L= Lights and Electrics d. O= Oil and Fuel e. C = Chain/Driveshaft, Chassis and Suspension 2. Inform other riders of any medical/physical conditions that may affect performance. 3. Provide training to familiarize user with the UTV. Conduct proficiency test ride. 4. Conduct/prepare UTV inspection checklist monthly 5. Perform maintence check and service by qualified mechanic annually.
Fueling UTV	Spills, fire.	1. Allow motor and exhaust to cool before fueling and use funnel, gas can spout or nozzle. 2. Place nozzle against tank to ground nozzle when fueling. 3. Have working fire extinguisher (5# ABC or larger) on UTV at all times. 4. No smoking within 50 feet of fuel area.

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE

LOADING / UNLOADING / HAULING:	UTV falling on operator or off trailer causing potential serious injury or damage to property, employee, and public	1. UTV shall be loaded with approved ramps onto a tilt bed trailer, drive UTV on ramp and use PPE, do not lift. 2. Secure UTV to trailer by: a. Put in gear & set parking brake b. Use approved anchor or ratchet tie-downs on all four corners for each UTV on a trailer. c. Connect tie-down straps to an approved anchor attachment on vehicles or trailers. d. Periodically check tie-down straps to ensure that they are secure and in good condition. e. Do not use frayed/worn straps 3. Use care when loading and unloading to avoid damage to vehicle, ATV, trailer, and operator. 4. Use a trailer and tow vehicle of adequately rated capacity and capability. 5. Only certified operators can tow trailers.
Starting UTV	Runaways, starting, and underway	6. Trailers over 1500 lbs. GVW shall be equipped with brakes. 7. Secure pin in tilt bed trailer before leaving front of trailer. 8. UTVs shall not be transported in pickup trucks. 1. Closely follow the UTV owners manual for start up procedures. 2. Start on a flat surface as possible 3. Make sure UTV throttle is not stuck open and machine is on a level of ground as possible.

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
GENERAL OPERATION OF UTV's .	Debris, hit by tree limbs, sunburn, hypothermia, strains, heat exhaustion	1. All employees must have a valid government issued drivers license and must follow their agency training. 2. Wear all personal protective equipment as required. 3. Dress and be prepared for all weather conditions. Layer clothing, use rain gear as needed, or use sunscreen as needed. 4. Maintain physical fitness and conditioning. 5. Carry plenty of drinking water prior to use and take frequent breaks during hot weather.

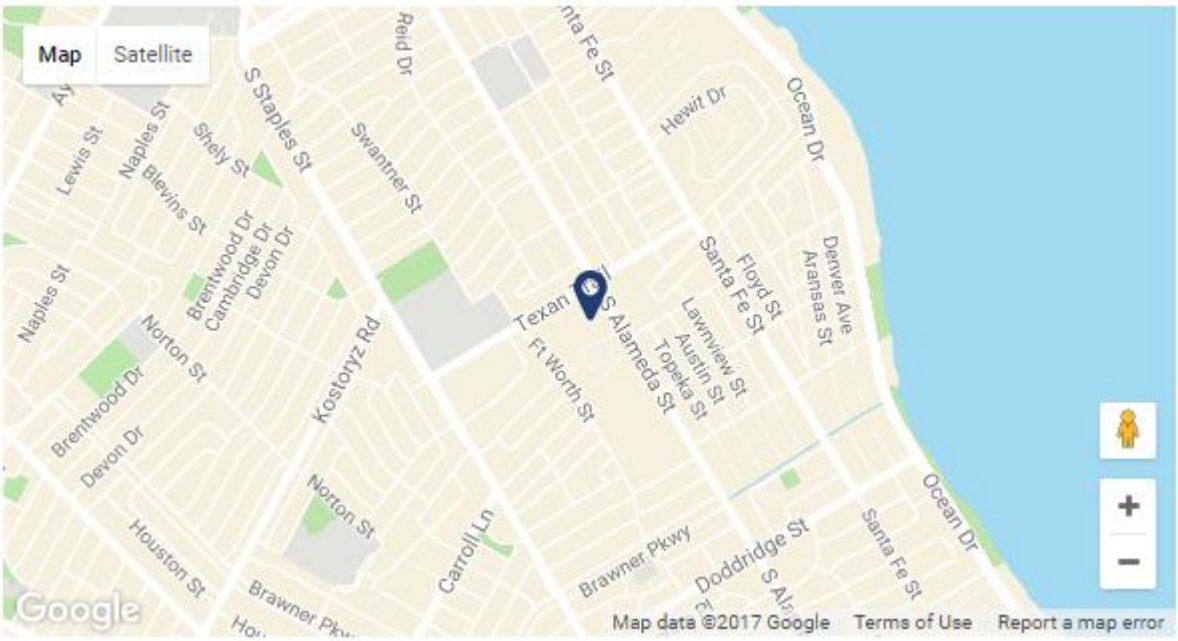
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
Accelerating UTV:	Falling from vehicle, running into objects, ejecting cargo	1. Use proper riding positions, grasp steering wheel firmly with both hands. All passengers must have and use safety belts. 2. Use smooth throttle control. Maintain control of vehicle. 3. Always keep legs and arms inside the vehicle. 4. Maintain a safe and slow speed for the conditions. 5. Never operate the UTV on hills too steep for the UTV or for your abilities. Travel staight up hill to the maximum extent practicable. 6. If UTV begins to tip, quickly turn the front wheels down hill, if possible, dismount on the up hill side. 7. Know and heed owner's manual slope limitations. 8. Ensure load is balanced and correctly distributed for the UTV. Perform load calculations for any cargo. 9. All loads must be secured with tie downs, bungee cords, or straps in an even manner. Do not exceed GVWR for the vehicle. 10. In ATV areas, keep watch for other riders traveling at fast rates of speed. Always have lights on. 11. WARNING!!!! If you have to take a sudden evasive action to avoid a collision, while carrying a secured load of gear or water, you greatly increase your risk for rollover or flipping of the UTV.
Stopping, cornering UTV, riding over obstacles	Being thrown from UTV, rollover, putting feet or arms outside vehicle.	1. Wear all required personal protective equipment (ppe). 2. Wear seat belts at all times. 3. Limit speed to conditions. 3. Loads shall not exceed GVWR of the UTV. 4. Keeps arms and legs inside vehicle at all times.

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
Riding distance	Running out of fuel, break downs.	1. Know how much fuel you have and approximately how long you can ride with amount of fuel in vehicle. (Never carry extra fuel on back of the UTV) 2. Do "pre-ride", "during", and "after operation" inspections. 3. Always carry a radio and provide for frequent checks 4. File a DETAILED travel plan with supervisor. If on Unit other than your home Unit, let the Unit know that you are there, and notify the Unit when you leave and expect to return. 5. Know machine and location of fuel valve. 6. Do not plan a trip involving travel after dark unless involved in search and rescue. If riding after dark, secure supervisor's permission first.
Following distance	Flying rocks, debris and dust.	1.Use the SIPDE process to recognize factors affecting risk a.S = Scan/Search b. I= Identify Hazards c. P = Predict what may happen d. D= Decide what to do e. E= Execute your decision 2. Proper following distance (minimum 2 second rule) to avoid rocks, debris and dust thrown by machine in front of you. 3. Wear appropriate PPE.
Fatigue	Loss of control, hitting objects, disorientation	1. Take frequent stretch breaks. 2. Drink adequate fluids, eat something. 3. Return another day to complete the job.
Towing UTV	Damage to machine, injury to operator.	1. UTV must be in neutral to prevent burning up transmission and belt. 2. Drive at slower speeds. 3. Wear all PPE. 4. Tow broken down machine forward only. 5. Never use a winch on the disabled UTV to tow. Use a tow strap.

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
Water crossings / wet muddy roads	Slipping off road, becoming submerged in deep water, drowning.	1. Maintain safe speed based on road conditions, and allow for increased stopping distances. Avoid riding on wet, muddy trails. 2. Only cross water if no other alternative, and use extreme caution. Cross streams at designated crossings if possible and watch for and do not cross streams during storm event flows. 3. Stay off frozen streams and lakes.
Operation in Rough Terrain, Steep Slopes, ETC	Personal injury or death, damage to UTV	4. Avoid spinning tires. 1. Slow down when in rough terrain 2. Avoid traversing side slopes that are steep, slippery, rocky, or very bumpy. 3. Go straight up or down a slope. 4. Always keep feet inside the vehicle. Maintain proper balance and do not overload the vehicle. Albwable cargo weight should be reduced appropriately when traveling in rough or steep terrain. 5. Stay on designated trails where possible. 6. If in unfamiliar rough terrain, dismount UTV and scout travel route on foot.

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
Responding to emergencies	Medical problem, injury, fire, break down	1. Ensure operator is physically fit to operate UTV. 2. Carry an individual first-aid kit. 3. Perform pre-trip stretching. 4. Do not ride with back problems /pain, or if experiencing numbness in hands, wrist, and arms. 5. Maintain current first-aid training. 6. Use ICS for search and rescue organization 7. Plan/ conduct radio check-ins, detailed itinerary, and effective accountabilty of individual rider based on: field conditions including trip distance, remoteness, exposure to hazards, workplace security concerns, and number of UTVs and employees in the vacinity of the project/travel area. 8. Supervisors or Incident Commander will assign employees to work in pairs if possible, based on a project specific analysis of the job hazards, and risks. 9. All UTV riders must use seat belt if installed. 10. Operators should be trained in the use of fire extinuisher s. 11. Immediately notify supervisor of injury or damage to UTV. 12. When using a UTV at night, exercise caution and keep speeds low. Watch for low hanging limbs and rocks or dips in trail. 14. Ask for additional help when needed.

Doctors Regional Emergency Center
3315 South Alameda Street
Corpus Christi, Texas 78411
(361) 761 -1000



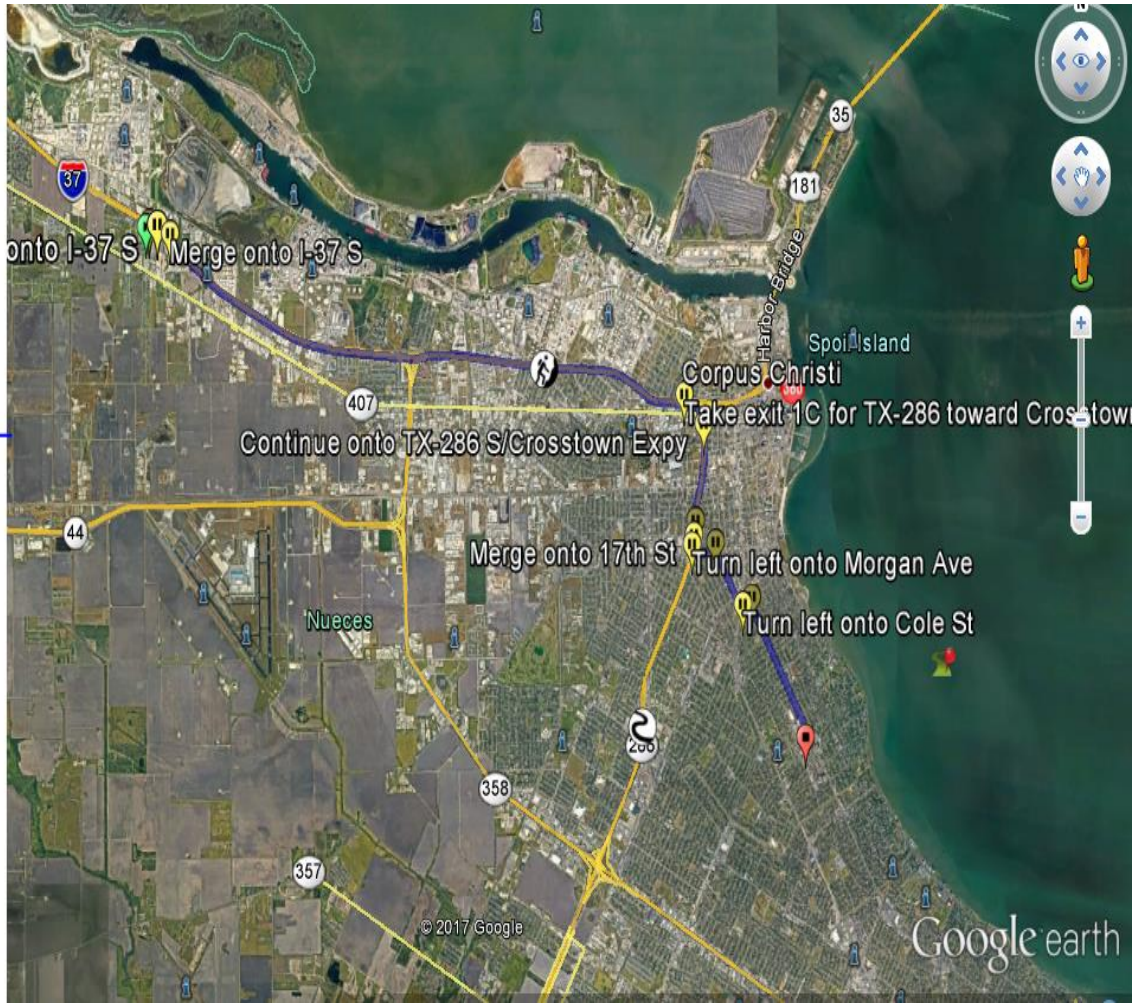
A 2001 Suntide Rd
Corpus Christi, TX 78409

B 3315 S Alameda St
Corpus Christi, TX 78411

Suggested routes

I-37 S	11.0 miles, 17 min
I-37 S and Santa Fe St	11.4 miles, 19 min
TX-358 E	14.1 miles, 19 min

A 2001 Suntide Rd

1. Head **north** on **Suntide Rd**
   223 ft
2. Turn **right** onto **I-37 Frontage Rd**
   0.1 mi
3. Take the ramp on the **left** onto **I-37 S**
   0.2 mi
4. Merge onto **I-37 S**
   6.6 mi
5. Take exit **1C** for **TX-286** toward **Crosstown Expy**
   0.4 mi
6. Continue onto **TX-286 S/Crosstown Expy**
   0.9 mi
7. Take the exit toward **Morgan Ave/19th St**
   0.1 mi
8. Merge onto **17th St**
   486 ft
9. Turn **left** onto **Morgan Ave**
   0.3 mi
10. Slight **right** onto **S Brownlee Blvd**
    0.7 mi
11. Turn **left** onto **Cole St**
    0.1 mi
12. Turn **right** at the 1st cross street onto **S Alameda St**
    1.4 mi

B 3315 S Alameda St