



State of New Jersey

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2023 Hazardous Materials On-Site and In Transit **Vulnerability Assessments** **Use and Limitations, Terms and Conditions**

Background

In coordination with the New Jersey State Police, Office of Emergency Management (OEM), the Department of Environmental Protection's (DEP) Office of Environmental and Public Health Analysis (EPHA) has updated and enhanced hazardous materials information for state and local OEM planning and preparedness purposes. The information includes distinct vulnerability analyses for hazardous materials on-site at facilities throughout New Jersey and transported on New Jersey freight railways and State highways. The on-site vulnerability analyses rely on 2020 data submitted by facilities to DEP and NJDOH in compliance with applicable state and federal laws. The DEP is providing these vulnerability analyses only to State, county, and local OEMs who sign the State's this confidentiality agreement to use for planning and preparedness purposes, especially for the development of Emergency Operating Plans (EOPs).

Please read carefully below to understand the use and limitations of these vulnerability analyses and the terms and conditions, embodied in this "2023 Hazardous Materials On-Site and In Transit Vulnerability Assessments Use and Limitations, Terms and Conditions" (hereafter referred to as the "Agreement").

Vulnerability Analyses Development

1. On Site Data Source(s) and Analysis

To develop the on-site vulnerability analyses, DEP obtained hazardous material information reported by

required facilities to the following program areas:

- DEP's Worker and Community Right to Know (CRTK)
- DEP's Release and Pollution Prevention Report (RPPR)
- DEP's Toxic Catastrophe Prevention Act (TCPA)
- DEP's Discharges of Petroleum and Other Hazardous Substances (DPHS)¹
- DOH's CRTK

The DEP and DOH CRTK programs collect information on different facilities as mandated by the [New Jersey Worker and Community Right To Know Act](#). DEP enforces the community provisions of the Act in the private sector (except for labeling), while the DOH enforces all provisions of the Act in public workplace and RTK labeling in private workspaces. The different DEP programs require State Tier II facilities to report varying levels of details on the chemical hazardous materials manufactured, used and/or stored based on their authorizing legislation. In many cases, these program inventories overlap, covering the same facilities. The more detailed information collected under RPPR, TCPA and DPCC is kept confidential as it relates to trade secrets or constitutes security information, while the CRTK information collected is made publicly available. EPHA staff linked the DEP program datasets together to generate one comprehensive inventory with the most detailed information available on each facility. Two "final" chemical inventories for the 2020 reporting year – the combined DEP dataset and the DOH CRTK dataset – were provided to a third-party contractor to conduct a Worst-Case Hazard Analysis.

Specifically, AristaTek, Inc. of Laramie WY was hired to analyze these two inventories, along with data submitted directly to [E-Plan](#), which hosts EPA data derived from state CRTK submission. Using these datasets, AristaTek Inc., through modeling, applied various HAZMAT hazards and exposure scenarios to understand the potential off-site consequences of a catastrophic chemical release on public health and safety. Specifically, analyses for each facility included toxic clouds (pools and puffs), flammable clouds, asphyxiating clouds, enhanced flammability clouds, blast and heat effects from fireballs, heat effects from pool fires, shrapnel, and general standoffs for Boiling Liquid Expanding Vapor Explosions (BLEVEs), initial isolation zones based on the US DOT Emergency Response Guidebook, blast effects from explosive materials, rocketing cylinders, and cryogenic isolation zones. AristaTek Inc. analyzed all chemicals at the

¹ Previously known as Discharge Prevention, Containment, and Countermeasures (DPCC).

NJ facilities, and then generated worst-case facility reports for each facility using chemical inventory selection criteria developed for this Vulnerability Assessment, dispersion modelling, and hazard analysis to highlight specific “worst-case” hazards in more detail for the chemical presenting the greatest impact at each facility. Each worst-case analysis is customizable based on criteria such as container size, maximum daily quantity, average daily quantity, etc. The analysis results are compatible with offline HAZMAT and mapping software for New Jersey first responders using platforms like PEAC, CAMEO, ArcMap, etc. Using Geographic Information System (GIS) analysis, facility locations were identified and shown with the highest value based on all chemicals reported at the facility, along with additional facility information such as company name, emergency contact, hazard classifications, chemical inventory, and quantity on hand.

EPHA staff then identified and applied updated data on sensitive receptors (e.g., daycare centers, assisted living facilities, etc.) and infrastructure (e.g., parks, transportation, water facilities) located within the vulnerability zones to the worst-case reports for each facility. Providing these reference points allows State and local emergency managers, first responders, and planners to better develop mitigation strategies to prevent or reduce public health and safety impacts in accordance with the State Mitigation Plan, State and local Emergency Operations Plans and local Emergency Response Plans.

All this information was compiled into analyses called the “Onsite Vulnerability analyses,” which consists of maps, GIS files, Excel spreadsheets, reports, and documentation. In addition, the DEP will provide a spreadsheet containing the modeling analyses for all chemicals at the facilities completed by AristaTek, Inc. to determine worst-case assessments.

2. Highway Transit Data Source(s) and Analysis

DEP utilized the New Jersey Office of GIS' publicly available [Next Gen 911 roads dataset](#) for this analysis. Specifically, EPHA staff looked at Route Numbers 1-599, which covers all state, interstate, U.S., and major county highways in New Jersey. NJDOT also provided draft 2022 truck stops locations. The State does not know the specifics on hazardous substances transported on each highway, and that some truck routes may not be mapped. Local knowledge of highway and truck stop locations, traffic patterns and capacity/use is essential to understanding whether to include highway vulnerabilities in local EOPs and planning activities.

EPHA staff combined the highway and truck stop data and used GIS analysis to estimate a vulnerability zone surrounding each highway and truck stop location. The vulnerability zone is based on the Department

of Transportation Emergency Response Guides (ERG) immediate isolation zone. Since the hazardous material being transported can vary, a worst-case scenario, based on sulfur dioxide, was used to estimate potential vulnerability. The Toxic Inhalation Hazard isolation zone for trucks transporting sulfur dioxide is 3,000 feet.

As with the other vulnerability assessments discussed above, EPHA staff then identified and applied updated data on sensitive receptors and critical infrastructure located within the vulnerability zones. The output of the analysis is called “In Transit Highway Vulnerability analyses” and consists of maps, GIS files, reports, and documentation.

3. Railroad Transit Data Source(s) and Analysis

DEP utilized the New Jersey Department of Transportation's (NJDOT) publicly available [railroad dataset](#) for this analysis. EPHA staff also identified freight rail bridge interconnections using the State's 2015 land use/land cover data that identifies bridges over water. These datasets may miss some existing freight railroad and bridges and include inactive railroad lines. Also, the State does not know the specifics on hazardous substances are transported on these railways. Local knowledge of freight rail line and bridge locations and use is essential to understanding whether to include railroad vulnerabilities in EOPs and planning activities.

EPHA staff completed four vulnerability analyses using this data; one for all freight railroads, one for those specific lines that transport Bakken crude oil (based on information submitted under Emergency Order Docket No. DOT-OST-2014-0067), one identifying the worst-case population impact in each municipality with a rail line and one specific to the freight rail bridge interconnections.

Using GIS, EPHA staff estimated a vulnerability zone surrounding the railroads. The vulnerability zone is based on the Department of Transportation Emergency Response Guides (ERG) immediate isolation zone. For railroads transporting Bakken Crude Oil, the vulnerability zone is ½ mile, which is taken from the Public Safety, Evacuation, Fire, section of ERG 128. Since the State does not know what specific substances are transported for non-Bakken Crude Oil freight, a worst-case scenario, based on chlorine or sulfur dioxide, was used to estimate potential vulnerability. The vulnerability zone was taken from Table 3 of the ERG for Six Common TIH Gases. The isolation zone for rail tank cars transporting chlorine or sulfur dioxide is 3,000 feet. Therefore, the vulnerability zone for all other freight railroads as well as the rail bridge interconnection analysis is 3,000 feet.

As with the other vulnerability assessments discussed above, EPHA staff then identified and applied updated data on sensitive receptors and critical infrastructure located within the vulnerability zones. The output of the analysis is called “In Transit Rail Vulnerability analyses” and consists of maps, GIS files, reports, and documentation.

Use and Limitations

DEP applied the best of its abilities using information from various governmental agency sources according to those agency’s procedures and standards to compile these vulnerability assessments; however unintentional inaccuracies may exist in the original information or the final vulnerability analyses.

These vulnerability analyses may contain sensitive information such as the locational reference (street/cross street, longitude, latitude) to water system infrastructure (e.g., drinking water intakes, pump stations, treatment plants, storage tanks, etc.) and reports or documents that provide operational details (e.g., quantities of chemicals stored, location of chemicals). For domestic security reasons, the vulnerability analyses are considered sensitive and must be safeguarded in accordance with the Terms and Conditions below.

The vulnerability analyses are not intended for regulatory use. Instead, they are planning resources to help state and local OEM better plan for hazardous materials incidents and develop Emergency Operating Plans. As such, these vulnerability analyses should be used only as a “starting point” for emergency planning and not supplant local knowledge of hazardous materials, highway or rail transit location and use, or other vulnerabilities. Local knowledge must be used to develop and finalize information needed for emergency planning.

These vulnerability analyses are intended to help local OEMs consider the most immediate vulnerabilities and gain situational awareness for planning purposes. In the event of a real hazardous materials incident, the actual vulnerability zone must be calculated using modeling tools once the details of the incident are understood. Details such as time of day, weather, and the amount of chemical released all help to determine the actual hazard and vulnerability zone.

Terms and Conditions

These vulnerability analyses are privileged, confidential and sensitive and are intended for distribution to Federal, State and County Emergency Management Coordinators and Emergency Planning Officials Coordinators. These individuals are the “Holder” of these vulnerability analyses.

Access to these vulnerability analyses is “need-to-know” meaning access must be necessary for the conduct of one's official duties. These vulnerability analyses are not to be disseminated in any manner orally, visually, or electronically to any person that is not need-to-know. The Holder will provide access to the vulnerability analyses based on need-to-know. Where there is uncertainty as to a person's need-to-know status, the holder will request dissemination instructions from their next-level supervisor or the OEM coordinator.

These vulnerability analyses are not for show, display, copy, transfer, or in any other way to be made available to the public. The vulnerability analyses are not to be made accessible under the New Jersey Open Public Records Act (OPRA). In accordance with Executive Order # 21 :1A - Governor James E. McGreevey - July 8, 2002, <http://www.state.nj.us/infobank/circular/eom21.shtml>, under the Domestic Security exemption, “Any government record where the inspection, examination or copying of that record would substantially interfere with the State's ability to protect and defend the State and its citizens against acts of sabotage or terrorism, or which, if disclosed, would materially increase the risk or consequences of potential acts of sabotage or terrorism.” Consistent with the terms and spirit of Executive Order 21: 1A disclosure of these vulnerability analyses and/or any work product generated is prohibited and such work product is also privileged, confidential and sensitive and must be redacted from all documents in response to OPRA, or any other requests for government records. Hereafter, the term vulnerability analyses include their associated work products.

The Holder is bound by this Agreement to use best efforts and utmost diligence to safeguard the vulnerability analyses and to protect against its disclosure, misuse, loss, and theft until such time as specified by the State. This may include limiting access to or display of the vulnerability analyses paper maps to areas only available to those that need-to-know and storing the electronic versions in secure locations, which may require restricting access to computers, firewall protection, intrusion detection systems, and other security.

The Holder will ensure documentation and procedures to safeguard the vulnerability analyses. Such documentation and procedures should address, but are not limited to, the following:

- A. Establish a listing of individuals by title, who will have access, date access is provided, and reasons for need-to-know.
- B. Confirmation that these individuals receive a confidentiality briefing to include discussion of the following:
 - 1. Be advised of the privileged, confidential, sensitive nature of these vulnerability analyses.
 - 2. Be advised that unauthorized disclosure, retention, or negligent handling of these vulnerability analyses could cause significant harm to public health and safety.
 - 3. Be advised not to disclose vulnerability analyses without verification that the recipient has been approved for access.
 - 4. Be advised not to discuss these vulnerability analyses outside of the work site.
 - 5. Be advised not to reveal their computer password if the vulnerability analyses can be accessed from their computer.
 - 6. Be advised of the approved method of access, display, and on-site storage of vulnerability analyses.

The Holder further agrees not to release or provide the vulnerability analyses to any subcontractor unless the subcontractor has been determined to qualify as “need-to-know” and is treated as “Holder” and executes a signed Agreement.

The Holder will notify the State immediately upon the discovery of any unauthorized use or disclosure of the vulnerability analyses and will cooperate with the State in every reasonable way to assist in regaining possession and prevent further unauthorized use or disclosure.

The DEP has made every effort to present the vulnerability analyses in a clear and understandable way. Access to these vulnerability analyses is provided without warranty of any kind and the user is responsible for understanding the accuracy limitations. The State of New Jersey is not responsible for the misuse or misinterpretation of the information presented. Under no circumstances shall the State of New Jersey be liable for any actions taken or omissions made based upon reliance on any information contained herein from whatever source nor shall the State be liable for any other consequences from any such reliance.

The vulnerability analyses shall be deemed to be the exclusive property of the State. The State is making the vulnerability analyses available to State and local holders only and is not transferring rights or ownership to the information.

Disclosure or use of the vulnerability analyses in violation of this Agreement may cause the State irreparable harm. By signing below, the Holder acknowledges reading and understanding the Information Development and Use and Limitations, and is agreeing to abide by the Terms and Conditions of this Agreement including the following provisions with respect to the treatment, duty of care, protection, and disclosure of the vulnerability analyses: (a) only use the vulnerability analyses as provided by this Agreement; (b) will not disclose the vulnerability analyses to the public; (c) only disclose the vulnerability analyses to individuals who have a need-to-know, and are advised by, the Holder of the obligations of this Agreement; (d) treat the vulnerability analyses with the same degree of care that it would afford to its own privileged, confidential, sensitive information, but no less than reasonable care; (e) have no right, title, or interest in the vulnerability analyses except as provided for in this Agreement; and (f) notify the State within twenty-four hours after its discovery of any loss or unauthorized disclosure or use of the vulnerability analyses.

Date: _____ By: _____

Title: _____

County/Municipality: _____

Email Address: _____