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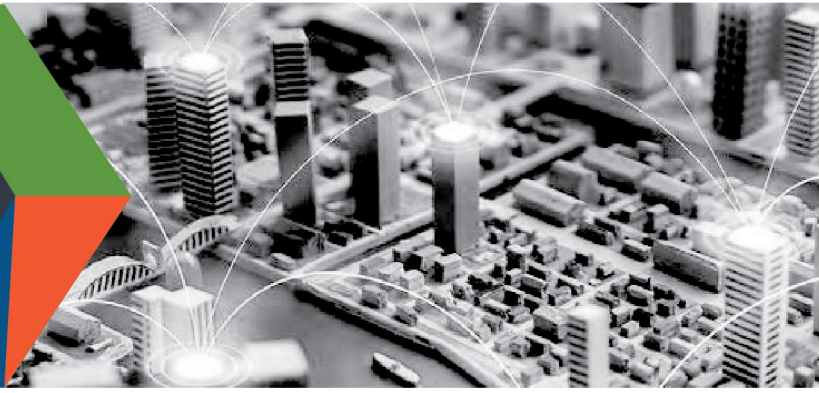

Guidance on the Essential Critical Infrastructure Workforce: Ensuring Community and National Resilience in COVID-19 Response

Version 3.0 (April 17, 2020)

THE IMPORTANCE OF ESSENTIAL CRITICAL INFRASTRUCTURE WORKERS

Functioning critical infrastructure is imperative during the response to the COVID-19 emergency for both public health and safety as well as community well-being. Certain critical infrastructure industries have a special responsibility in these times to continue operations.

This advisory guidance and accompanying list are intended to support state, local, tribal, territorial and industry partners in identifying the critical infrastructure sectors and the essential workers needed to maintain the services and functions Americans depend on daily and that need to be able to operate resiliently during the COVID-19 pandemic response.

This document gives advisory guidance on defining essential critical infrastructure workers. Promoting the ability of such workers to continue to work during periods of community restriction, access management, social distancing, or closure orders/directives is crucial to community resilience and continuity of essential functions. The term "workers" as used in this guidance is intended to apply to both employees and contractors performing the described functions.

CISA will continually solicit and accept feedback on the list and will evolve the list in response to stakeholder feedback. We will also use our various stakeholder engagement mechanisms to work with partners on how they are using this list and share those lessons learned and best practices broadly. Feedback can be sent to CISA.CAT@CISA.DHS.GOV.

CONSIDERATIONS FOR GOVERNMENT AND BUSINESS

This list was developed in consultation with federal agency partners, industry experts, and State and local officials, and is based on several key principles:

1. Response efforts to the COVID-19 pandemic are locally executed, state managed, and federally supported.
2. Everyone should follow guidance from the Centers for Disease Control and Prevention (CDC), as well as state and local government officials, regarding strategies to limit disease spread.
3. Employers must comply with applicable Occupational Safety and Health Administration (OSHA) requirements for protecting critical infrastructure workers who remain on or return to the job during the COVID-19 pandemic. As the nation relies on these workers to protect public health, safety, and community well-being, they must be protected from exposure to and infection with the virus so that they can continue to carry out

their responsibilities. OSHA has guidance and enforcement information for workplaces at www.osha.gov/coronavirus.

4. Businesses and government agencies may continue to implement organization-specific measures, which protect the workforce while meeting mission needs.
5. Workers should be encouraged to work remotely when possible and focus on core business activities. In-person, non-mandatory activities should be delayed until the resumption of normal operations.
6. When continuous remote work is not possible, businesses should enlist strategies to reduce the likelihood of spreading the disease. This includes, but is not limited to, physically separating staff, staggering work shift hours or days, and other social distancing measures. While the CDC recommends that everyone wear a cloth face cover to contain respiratory droplets when around others, critical infrastructure employers must consider how best to implement this public health recommendation for source control in the workplace. For example, employers may provide disposable facemasks (e.g., surgical masks) instead of cloth face coverings when workers would need to wear masks for extended periods of time (e.g., the duration of a work shift) or while performing tasks in which the face covering could become contaminated.
7. Consider the impact of workplace sick leave policies that may contribute to an employee decision to delay reporting medical symptoms. Sick employees should not return to the workplace until they meet the criteria to stop home isolation.
8. Critical infrastructure has an obligation to limit to the extent possible the reintegration of in-person workers who have experienced an exposure to COVID-19 but remain asymptomatic in ways that best protect the health of the worker, their co-workers, and the general public. An analysis of core job tasks and workforce availability at worksites can allow the employer to match core activities to other equally skilled and available in-person workers who have not experienced an exposure. CDC guidance on safety practices for critical infrastructure workers is maintained at https://www.cdc.gov/coronavirus/2019-ncov/community/critical-workers/implementing-safety-practices.html
9. All organizations should implement their business continuity and pandemic plans or put plans in place if they do not exist. Delaying implementation is not advised and puts at risk the viability of the business and the health and safety of the workers.
10. Reliance on technology and just-in-time supply chains means that certain workers must be able to access certain sites, facilities, and assets to ensure continuity of functions. The vast majority of our economy relies on technology and therefore information technology (IT) and operational technology (OT) workers for critical infrastructure operations are essential. This includes workers in many roles, including workers focusing on management systems, control systems, and Supervisory Control and Data Acquisition (SCADA) systems, and data centers; cybersecurity engineering; and cybersecurity risk management.
11. Government workers, such as emergency managers, and the business community need to establish and maintain lines of communication.
12. Essential critical infrastructure workers need continued and unimpeded access to sites, facilities, and equipment within quarantine zones, containment areas, or other areas where access or movement is limited to perform functions for community relief and stability; for public safety, security and health; for maintaining essential supply chains and preserving local, regional, and national economic well-being.
13. Essential critical infrastructure workers need sustained access to designated quarantine, containment, or

restricted areas; and should be exempted from curfews, shelter-in-place orders, and transportation restrictions or restrictions on movement.

14. Whenever possible, local governments should consider adopting specific state guidance on essential workers to reduce potential complications of workers crossing jurisdictional boundaries. When this is not possible, local jurisdictions should consider aligning access and movement control policies with neighboring jurisdictions to reduce the burden of cross-jurisdictional movement of essential critical infrastructure workers.

IDENTIFYING ESSENTIAL CRITICAL INFRASTRUCTURE WORKERS

The following list of identified essential critical infrastructure workers is intended to be overly inclusive reflecting the diversity of industries across the United States.

HEALTHCARE / PUBLIC HEALTH

- Workers, including laboratory personnel, that perform critical clinical, biomedical and other research, development, and testing needed for COVID-19 or other diseases.
- Healthcare providers including, but not limited to, physicians; dentists; psychologists; mid-level practitioners; nurses; assistants and aids; infection control and quality assurance personnel; pharmacists; physical, respiratory, speech and occupational therapists and assistants; social workers; optometrists; speech pathologists; chiropractors; diagnostic and therapeutic technicians; and radiology technologists.
- Workers required for effective clinical, command, infrastructure, support service, administrative, security, and intelligence operations across the direct patient care and full healthcare and public health spectrum. Personnel examples may include, but are not limited, to accounting, administrative, admitting and discharge, engineering, accrediting, certification, licensing, credentialing, epidemiological, source plasma and blood donation, food service, environmental services, housekeeping, medical records, information technology and operational technology, nutritionists, sanitarians, respiratory therapists, etc.
    - Emergency medical services workers.
    - Prehospital workers included but not limited to urgent care workers.
    - Inpatient & hospital workers (e.g. hospitals, critical access hospitals, long-term acute care

hospitals, long-term care facilities, inpatient hospice, ambulatory surgical centers, etc.).
    - Outpatient care workers (e.g. end-stage-renal disease, Federally Qualified Health Centers, Rural Health Clinics, community mental health clinics, organ transplant/procurement centers, and other ambulatory care settings/providers, comprehensive outpatient rehabilitation facilities, etc.).
    - Home care workers (e.g. home health care, at-home hospice, home dialysis, home infusion, etc.).
    - Workers at Long-term care facilities, residential and community-based providers (e.g. Programs of All-Inclusive Care for the Elderly (PACE), Intermediate Care Facilities for Individuals with Intellectual Disabilities, Psychiatric Residential Treatment Facilities, Religious Nonmedical Health Care Institutions, etc.).
    - Workplace safety workers (i.e., workers who anticipate, recognize, evaluate, and control workplace conditions that may cause workers' illness or injury).
- Workers needed to support transportation to and from healthcare facility and provider appointments.
- Workers needed to provide laundry services, food services, reprocessing of medical equipment, and waste management.
- Workers that manage health plans, billing, and health information and who cannot work remotely.
- Workers performing cybersecurity functions at healthcare and public health facilities and who cannot work remotely.
- Workers performing security, incident management, and emergency operations functions at or on behalf of healthcare entities including healthcare coalitions, who cannot practically work remotely.
- Childcare, eldercare, and other service providers for essential healthcare personnel.
- Vendors and suppliers (e.g. imaging, pharmacy, oxygen services, durable medical equipment, etc.).
- Workers at manufacturers (including biotechnology companies and those companies that have shifted production to medical supplies), materials and parts suppliers, technicians, logistics and warehouse operators, printers, packagers, distributors of medical products and equipment (including third party logistics providers, and those who test and repair), personal protective equipment (PPE), isolation barriers, medical gases, pharmaceuticals (including materials used in radioactive drugs), dietary supplements, blood and blood products, vaccines, testing materials, laboratory supplies, cleaning, sanitizing, disinfecting or sterilization supplies (including dispensers), sanitary goods, personal care products, pest control products, and tissue and paper towel products.
- Donors of blood, bone marrow, blood stem cell, or plasma, and the workers of the organizations that operate and manage related activities.
- Pharmacy staff, including workers necessary to maintain uninterrupted prescription, and other workers for pharmacy operations.
- Workers in retail facilities specializing in medical good and supplies.
- Public health and environmental health workers, such as:
    - Workers specializing in environmental health that focus on implementing environmental controls, sanitary and infection control interventions, healthcare facility safety and emergency preparedness planning, engineered work practices, and developing guidance and protocols for appropriate PPE to prevent COVID-19 disease transmission.
    - Public health/ community health workers (including call center workers) who conduct community-based public health functions, conducting epidemiologic surveillance and compiling, analyzing, and communicating public health information, who cannot work remotely.
- Human services providers, especially for at risk populations such as:
    - Home delivered meal providers for older adults, people with disabilities, and others with chronic

health conditions.
    - Home-maker services for frail, homebound, older adults.
    - Personal assistance services providers to support activities of daily living for older adults, people with disabilities, and others with chronic health conditions who live independently in the community with supports and services.
    - Home health providers who deliver health care services for older adults, people with disabilities, and others with chronic health conditions who live independently in the community with supports and services.
- Government entities, and contractors that work in support of local, state, and federal public health and medical mission sets, including but not limited to supporting access to healthcare and associated payment functions, conducting public health functions, providing medical care, supporting emergency management, or other services necessary for supporting the COVID-19 response.
- Mortuary service providers, such as:
    - Workers performing mortuary funeral, cremation, burial, cemetery, and related services, including funeral homes, crematoriums, cemetery workers, and coffin makers.
    - Workers who coordinate with other organizations to ensure the proper recovery, handling, identification, transportation, tracking, storage, and disposal of human remains and personal effects; certify cause of death; and facilitate access to mental and behavioral health services to the family members, responders, and survivors of an incident.

LAW ENFORCEMENT, PUBLIC SAFETY, AND OTHER FIRST RESPONDERS

- Public, private, and voluntary personnel (front-line and management, civilian and sworn) in emergency management, law enforcement, fire and rescue services, emergency medical services (EMS), and security, public and private hazardous material responders, air medical service providers (pilots and supporting technicians), corrections, and search and rescue personnel.
- Personnel involved in provisioning of access to emergency services, including the provisioning of real-time text, text-to-911, and dialing 911 via relay.
- Personnel that are involved in the emergency alert system (EAS) ((broadcasters, satellite radio and television, cable, and wireline video) and wireless emergency alerts (WEA).
- Workers at Independent System Operators and Regional Transmission Organizations, and Network Operations staff, engineers and technicians to manage the network or operate facilities.
- Workers at emergency communication center, public safety answering points, public safety communications centers, emergency operation centers, and 911 call centers.
- Fusion Center workers.
- Workers, including contracted vendors, who maintain, manufacture, or supply equipment and services supporting law enforcement, fire, EMS, and response operations (to include electronic security and life safety security personnel).
- Workers and contracted vendors who maintain and provide services and supplies to public safety facilities, including emergency communication center, public safety answering points, public safety communications centers, emergency operation centers, fire and emergency medical services stations, police and law enforcement stations and facilities.
- Workers supporting the manufacturing, distribution, and maintenance of necessary safety equipment and uniforms for law enforcement and all public safety personnel.

- Workers supporting the operation of firearm, or ammunition product manufacturers, retailers, importers, distributors, and shooting ranges.
- Public agency workers responding to abuse and neglect of children, spouses, elders, and dependent adults.
- Workers who support weather disaster and natural hazard mitigation and prevention activities.
- Security staff to maintain building access control and physical security measures.

FOOD AND AGRICULTURE

- Workers supporting groceries, pharmacies, convenience stores, and other retail (including unattended and vending) that sells human food, animal and pet food and pet supply, and beverage products, including retail customer support service and information technology support staff necessary for online orders, pickup, and delivery.
- Restaurant carry-out and quick serve food operations, including dark kitchen and food prep centers, carry-out, and delivery food workers.
- Food manufacturer workers and their supplier workers including those employed at food ingredient production and processing facilities; aquaculture and seafood harvesting facilities; livestock, poultry, seafood slaughter facilities; pet and animal feed processing facilities; human food facilities producing by-products for animal food; beverage production facilities; and the production of food packaging.
- Farmers, farm and ranch workers, and agribusiness support services to include those employed in auction and sales; grain and oilseed handling, storage, processing, and distribution; animal food, feed, and ingredient production, packaging, and distribution; manufacturing, packaging, and distribution of veterinary drugs; and truck delivery and transport.
- Farmers, farm and ranch workers, and support service and supplier workers producing food supply domestically and for export, to include those engaged in raising, cultivating, harvesting, packing, storing, or delivering to storage or to market or to a carrier for transportation to market any agricultural or horticultural commodity for human consumption; agricultural inspection; fuel ethanol facilities; biodiesel and renewable diesel facilities; storage facilities; and other agricultural inputs.
- Workers and firms supporting the distribution of food, feed, and beverage and ingredients used in these products, including warehouse workers, vendor-managed inventory controllers, and blockchain managers.
- Workers supporting the sanitation and pest control of all food manufacturing processes and operations from wholesale to retail.
- Workers supporting the growth and distribution of plants and associated products for home gardens.
- Workers in cafeterias used to feed workers, particularly worker populations sheltered against COVID-19.
- Workers in animal diagnostic and food testing laboratories.
- Government, private, and non-governmental organizations' workers essential for food assistance programs (including school lunch programs) and government payments.
- Workers of companies engaged in the production, storage, transport, and distribution of chemicals, medicines, vaccines, and other substances used by the food and agriculture industry, including seeds, pesticides, herbicides, fertilizers, minerals, enrichments, and other agricultural production aids.
- Animal agriculture workers to include those employed in veterinary health (including those involved in supporting emergency veterinary or livestock services); raising, caring for and management of animals for food; animal production operations; livestock markets; slaughter and packing plants, manufacturers, renderers, and associated regulatory and government workforce.

- Transportation supporting animal agricultural industries, including movement of animal medical and reproductive supplies and materials, animal vaccines, animal drugs, feed ingredients, feed and bedding, live animals, animal by-products, and deceased animals for disposal.
- Workers who support sawmills and the manufacture and distribution of fiber and forest products, including, but not limited to timber, paper, and other wood and fiber products, as well as manufacture and distribution of products using agricultural commodities.
- Workers engaged in the manufacture and maintenance of equipment and other infrastructure necessary for agricultural production and distribution.

ENERGY

- Workers supporting the energy sector, regardless of the energy source (including, but not limited to, nuclear, fossil, hydroelectric, or renewable), segment of the system, or infrastructure the worker is involved in, who are needed to construct, manufacture, repair, transport, permit, monitor, operate engineer, and maintain the reliability, safety, security, environmental health, and physical and cyber security of the energy system, including those who support construction, manufacturing, transportation, permitting, and logistics.
- Workers and contractors supporting energy facilities that provide steam, hot water or chilled water from central power plants to connected customers.
- Workers conducting energy/commodity trading/scheduling/marketing functions who can't perform their duties remotely.
- Workers supporting the energy sector through renewable energy infrastructure (including, but not limited to, wind, solar, biomass, hydrogen, ocean, geothermal, and hydroelectric) and microgrids, including those supporting construction, manufacturing, transportation, permitting, operation and maintenance, monitoring, and logistics.
- Workers and security staff involved in nuclear re-fueling operations.
- Workers providing services related to energy sector fuels (including, but not limited to, petroleum (crude oil), natural gas, propane, liquefied natural gas (LNG), compressed natural gas (CNG), natural gas liquids (NGL), other liquid fuels, nuclear, and coal) and supporting the mining, processing, manufacturing, construction, logistics, transportation, permitting, operation, maintenance, security, waste disposal, storage, and monitoring of support for resources.
- Workers providing environmental remediation and monitoring, limited to immediate critical needs technicians.
- Workers involved in the manufacturing and distribution of equipment, supplies, and parts necessary to maintain production, maintenance, restoration, and service at energy sector facilities across all energy sector segments.

Electricity Industry

- Workers who maintain, ensure, restore, or who are involved in the development, transportation, fuel procurement, expansion, or operation of, the generation, transmission, and distribution of electric power, including call centers, utility workers, engineers, retail electricity, construction, maintenance, utility telecommunications, relaying, and fleet maintenance technicians who cannot perform their duties remotely.
- Workers at coal mines, production facilities, and those involved in manufacturing, transportation,

permitting, operation, maintenance, and monitoring at coal sites.

- Workers who produce, process, ship, and handle coal used for power generation and manufacturing.
- Workers in the electricity industry including but not limited to those supporting safety, construction, manufacturing, transportation, permitting, operation/maintenance, engineering, physical and cyber security, monitoring, and logistics
- Workers needed for safe and secure operations at nuclear generation including, but not limited to, those critical to the broader nuclear supply chain, the manufacture and delivery of parts needed to maintain nuclear equipment, the operations of fuel manufacturers, and the production and processing of fuel components used in the manufacturing of fuel.
- Workers at fossil fuel (including but not limited to natural gas, refined, distillate, and/or coal), nuclear, and renewable energy infrastructure (including, but not limited to wind, solar, biomass, hydrogen, geothermal, and hydroelectric), and microgrids, including those supporting safety, construction, manufacturing, transportation, permitting, operation, maintenance, monitoring, and logistics.
- Workers at generation, transmission, and electric black start facilities.
- Workers at Reliability Coordinator, Balancing Authority, local distribution control centers, and primary and backup Control Centers, including, but not limited to, independent system operators, regional transmission organizations, and local distribution control centers.
- Workers that are mutual assistance/aid personnel, which may include workers from outside of the state or local jurisdiction.
- Vegetation management and traffic control for supporting those crews.
- Instrumentation, protection, and control technicians.
- Essential support personnel for electricity operations.
- Generator set support workers, such as diesel engineers used in power generation, including those providing fuel.

Petroleum Industry

- Workers who support onshore and offshore petroleum drilling operations; platform and drilling construction and maintenance; transportation (including helicopter operations), maritime transportation, supply, and dredging operations; maritime navigation; well stimulation, intervention, monitoring, automation and control, extraction, production; processing; waste disposal, and maintenance, construction, and operations.
- Workers in the petroleum industry including but not limited to those supporting safety, construction, manufacturing, transportation, permitting, operation/maintenance, engineering, physical and cyber security, monitoring, and logistics.
- Workers for crude oil, petroleum, and petroleum product storage and transportation, including pipeline, marine transport, terminals, rail transport, storage facilities, racks, and road transport for use as end- use fuels such as gasoline, diesel fuel, jet fuel, and heating fuels or feedstocks for chemical manufacturing.
- Petroleum and petroleum product security operations center workers and workers who support maintenance and emergency response services.
- Petroleum and petroleum product operations control rooms, centers, and refinery facilities.
- Retail fuel centers such as gas stations and truck stops, and the distribution systems that support them.
- Supporting new and existing construction projects, including, but not limited to, pipeline construction.
- Manufacturing and distribution of equipment, supplies, and parts necessary for production, maintenance, restoration, and service of petroleum and petroleum product operations and use, including end-users.

- Transmission and distribution pipeline workers, including but not limited to pump stations and any other required, operations maintenance, construction, and support for petroleum products.

Natural Gas, Natural Gas Liquids (NGL), Propane, and Other Liquid Fuels

- Workers who support onshore and offshore drilling operations, platform and drilling construction and maintenance; transportation (including helicopter operations); maritime transportation, supply, and dredging operations; maritime navigation; natural gas and natural gas liquid production, processing, extraction, storage and transportation; well intervention, monitoring, automation and control; waste disposal, and maintenance, construction, and operations.
- Workers in the natural gas, NGL, propane, and other liquid fuels industries including but not limited to those supporting safety, construction, manufacturing, transportation, permitting, operation/maintenance, engineering, physical and cyber security, monitoring, and logistics.
- Transmission and distribution pipeline workers, including compressor stations and any other required operations maintenance, construction, and support for natural gas, natural gas liquid, propane, and other liquid fuels.
- Workers at Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) facilities.
- Workers at natural gas, propane, natural gas liquids, liquified natural gas, liquid fuel storage facilities, underground facilities, and processing plants and other related facilities, including construction, maintenance, and support operations personnel.
- Natural gas processing plants workers and those who deal with natural gas liquids.
- Workers who staff natural gas, propane, natural gas liquids, and other liquid fuel security operations centers, operations dispatch and control rooms and centers, and emergency response and customer emergencies (including leak calls) operations.
- Workers supporting drilling, production, processing, refining, and transporting natural gas, propane, natural gas liquids, and other liquid fuels for use as end-use fuels, feedstocks for chemical manufacturing, or use in electricity generation.
- Workers supporting propane gas service maintenance and restoration, including call centers.
- Workers supporting propane, natural gas liquids, and other liquid fuel distribution centers.
- Workers supporting propane gas storage, transmission, and distribution centers.
- Workers supporting new and existing construction projects, including, but not limited to, pipeline construction.
- Workers supporting ethanol and biofuel production, refining, and distribution.
- Workers in fuel sectors (including, but not limited to nuclear, coal, and gas types and liquid fuels) supporting the mining, manufacturing, logistics, transportation, permitting, operation, maintenance, and monitoring of support for resources.
- Workers ensuring, monitoring, and engaging in the physical security of assets and locations associated with natural gas, propane, natural gas liquids, and other liquid fuels.
- Workers involved in the manufacturing and distribution of equipment, supplies, and parts necessary to maintain production, maintenance, restoration, and service of natural gas, propane, natural gas liquids, and other liquid fuels operations and use, including end-users.

WATER AND WASTEWATER

Workers needed to operate and maintain drinking water and wastewater and drainage infrastructure, including:

- Operational staff at water authorities.

- Operational staff at community water systems.
- Operational staff at wastewater treatment facilities.
- Workers repairing water and wastewater conveyances and performing required sampling or monitoring, including field staff.
- Operational staff for water distribution and testing.
- Operational staff at wastewater collection facilities.
- Operational staff and technical support for SCADA Control systems.
- Chemical equipment and personal protection suppliers to water and wastewater system.
- Workers who maintain digital systems infrastructure supporting water and wastewater operations.

TRANSPORTATION AND LOGISTICS

- Workers supporting or enabling transportation and logistics functions, including truck drivers, bus drivers, dispatchers, maintenance and repair technicians, warehouse workers, truck stop and rest area workers, driver training and education centers, Department of Motor Vehicle (DMV) workers, enrollment agents for federal transportation worker vetting programs, towing and recovery services, roadside assistance workers, intermodal transportation personnel, and workers that construct, maintain, rehabilitate, and inspect infrastructure, including those that require cross-jurisdiction travel.).
- Workers supporting the distribution of food, fuels, pharmaceuticals and medical material (including materials used in radioactive drugs), and chemicals needed for water or water treatment and energy maintenance.
- Workers supporting operation of essential highway infrastructure, including roads, bridges, and tunnels (e.g., traffic operations centers and moveable bridge operators).
- Workers of firms providing services, supplies, and equipment that enable warehouse and operations, including cooling, storing, packaging, and distributing products for wholesale or retail sale or use, including cold- and frozen-chain logistics for food and critical biologic products.
- Mass transit workers providing critical transit services and performing critical or routine maintenance to mass transit infrastructure or equipment.
- Workers supporting personal and commercial transportation services including taxis, delivery services, vehicle rental services, bicycle maintenance and car-sharing services, and transportation network providers.
- Workers, including police, responsible for operating and dispatching passenger, commuter, and freight trains and maintaining rail infrastructure and equipment.
- Maritime transportation workers, including port authority and commercial facility personnel, dredgers, port workers, security personnel, mariners, ship crewmembers, ship pilots, tugboat operators, equipment operators (to include maintenance and repair, and maritime-specific medical providers), ship supply workers, chandlers, and repair company workers. Refer to the United States Coast Guard's Marine Safety Information Bulletin "Maintaining Maritime Commerce and Identification of Essential Maritime Critical Infrastructure Workers" for more information.
- Workers, including truck drivers, railroad employees, maintenance crews, and cleaners, supporting transportation of chemicals, hazardous, medical, and waste materials that support critical infrastructure, capabilities, functions, and services, including specialized carriers, crane and rigging industry workers.
- Bus drivers and workers who provide or support intercity, commuter, and charter bus service in support of other essential services or functions.

- Automotive repair, maintenance, and transportation equipment manufacturing and distribution facilities (including those who repair and maintain electric vehicle charging stations).
- Transportation safety inspectors, including hazardous material inspectors and accident investigator inspectors.
- Manufacturers and distributors (to include service centers and related operations) of lighting and communication systems, specialized signage and structural systems, emergency response equipment and support materials, printers, printed materials, packaging materials, pallets, crates, containers, and other supplies needed to support manufacturing, packaging staging and distribution operations, and other critical infrastructure needs.
- Postal Service, parcel, courier, last-mile delivery, and shipping and related workers, to include private companies, who accept, process, transport, and deliver information and goods.
- Workers who supply equipment and materials for maintenance of transportation equipment.
- Workers who repair and maintain vehicles, aircraft, rail equipment, marine vessels, bicycles, and the equipment and infrastructure that enables operations that encompass movement of cargo and passengers.
- Workers who support air transportation for cargo and passengers, including operation distribution, maintenance, and sanitation. This includes air traffic controllers, flight dispatchers, maintenance personnel, ramp workers, fueling agents, flight crews, airport safety inspectors and engineers, airport operations personnel, aviation and aerospace safety workers, security, commercial space personnel, operations personnel, accident investigators, flight instructors, and other on- and off-airport facilities workers.
- Workers supporting transportation via inland waterways, such as barge crew, dredging crew, and river port workers for essential goods.
- Workers critical to the manufacturing, distribution, sales, rental, leasing, repair, and maintenance of vehicles and other transportation equipment (including electric vehicle charging stations) and the supply chains that enable these operations to facilitate continuity of travel-related operations for essential workers.
- Warehouse operators, including vendors and support personnel critical for business continuity (including heating, ventilation, and air conditioning (HVAC) and electrical engineers, security personnel, and janitorial staff), e-commerce or online commerce, and customer service for essential functions.

PUBLIC WORKS AND INFRASTRUCTURE SUPPORT SERVICES

- Workers who support the construction, maintenance, or rehabilitation of critical infrastructure.
- Workers supporting construction materials production, testing laboratories, material delivery services, and construction inspection.
- Workers who support the operation, inspection, and maintenance of essential public works facilities and operations, including bridges, water and sewer main breaks, fleet maintenance personnel, construction of critical or strategic infrastructure, traffic signal maintenance, emergency location services for buried utilities, maintenance of digital systems infrastructure supporting public works operations, and other emergent issues.
- Workers such as plumbers, electricians, exterminators, builders (including building and insulation), contractors, HVAC Technicians, landscapers, and other service providers who provide services, including temporary construction, that are necessary to maintaining the safety, sanitation, and essential operation

of residences, businesses and buildings, such as hospitals and senior living facilities.
- Workers personnel, who support operations that ensure, the availability of and access to needed facilities, transportation, energy, and communications through activities such as road and line clearing.
- Workers who support the effective removal, storage, and disposal of residential, industrial, and commercial solid waste and hazardous waste, including at landfill operations.
- Workers who support the operation, inspection, and maintenance of essential dams, locks, and levees.
- Workers who support the inspection and maintenance of aids to navigation and other government-provided services that ensure continued maritime commerce.

COMMUNICATIONS AND INFORMATION TECHNOLOGY

Communications

- Maintenance of communications infrastructure, -- including privately owned and maintained communication systems, -- supported by technicians, operators, call centers, wireline and wireless providers, cable service providers, satellite operations, Internet Exchange Points, Points of Presence, Network Access Points, back haul and front haul facilities, and manufacturers and distributors of communications equipment.
- Government and private sector workers, including government contractors, with work related to undersea cable infrastructure and support facilities, including cable landing sites, beach manhole vaults and covers, submarine cable depots, and submarine cable ship facilities.
- Government and private sector workers, including government contractors, supporting Department of Defense internet and communications facilities.
- Network Operations staff, engineers, and technicians to include IT managers and staff, HVAC and electrical engineers, security personnel, software and hardware engineers, and database administrators that manage the network or operate facilities.
- Workers responsible for infrastructure construction and restoration, including but not limited to engineers, technicians, and contractors for construction and engineering of fiber optic cables, buried conduit, small cells, other wireless facilities, and other communications sector-related infrastructure. This includes permitting, construction of new facilities, and deployment of new technology as required to address congestion or customer usage due to unprecedented use of remote services.
- Installation, maintenance, and repair technicians that establish, support, or repair service as needed.
- Central office personnel to maintain and operate central office, data centers, and other network office facilities, including critical support personnel assisting front line workers.
- Customer service and support staff, including managed and professional services, as well as remote providers of support to transitioning workers to set up and maintain home offices, who interface with customers to manage or support service environments and security issues including payroll, billing, fraud, logistics, and troubleshooting.
- Workers providing electronic security, fire, monitoring, and life safety services, and who ensure physical security, cleanliness, and the safety of facilities and personnel, including those who provide temporary licensing waivers for security personnel to work in other States or Municipalities.
- Dispatchers involved with service repair and restoration.
- Retail customer service personnel at critical service center locations to address customer needs, including new customer processing, distributing and repairing equipment, and addressing customer issues, in order to support individuals' remote emergency communications needs

- Supply chain and logistics personnel to ensure goods and products are available to provision these front-line workers.
- External Affairs personnel to assist in coordinating with local, state, and federal officials to address communications needs supporting COVID-19 response, public safety, and national security.
- Workers responsible for ensuring that persons with disabilities have access to and the benefits of various communications platforms, including those involved in the provision of telecommunication relay services, closed captioning of broadcast television for the deaf, video relay services for deaf citizens who prefer communication via American Sign Language over text, and audio-description for television programming.

Information Technology

- Workers who support command centers, including, but not limited to, Network Operations Command Centers, Broadcast Operations Control Centers, and Security Operations Command Centers.
- Data center operators, including system administrators, HVAC and electrical engineers, security personnel, IT managers and purchasers, data transfer solutions engineers, software and hardware engineers, and database administrators for all industries, including financial services.
- Workers who support client service centers, field engineers, and other technicians and workers supporting critical infrastructure, as well as manufacturers and supply chain vendors that provide hardware and software, support services, research and development, information technology equipment (to include microelectronics and semiconductors), HVAC and electrical equipment for critical infrastructure, and test labs and certification agencies that qualify such equipment (to include microelectronics, optoelectronics, and semiconductors) for critical infrastructure, including data centers.
- Workers needed to preempt and respond to cyber incidents involving critical infrastructure, including medical facilities; state, local, tribal, and territorial (SLTT) governments and federal facilities; energy and utilities; banks and financial institutions; securities and other exchanges; other entities that support the functioning of capital markets, public works, critical manufacturing, food, and agricultural production; transportation; and other critical infrastructure categories and personnel, in addition to all cyber defense workers who can't perform their duties remotely.
- Suppliers, designers, transporters, and other workers supporting the manufacture, distribution, provision, and construction of essential global, national, and local infrastructure for computing services (including cloud computing services and telework capabilities), business infrastructure, financial transactions and services, web-based services, and critical manufacturing.
- Workers supporting communications systems, information technology, and work from home solutions used by law enforcement, public safety, medical, energy, public works, critical manufacturing, food and agricultural production, financial services, education, and other critical industries and businesses.
- Workers required in person to support Software as a Service businesses that enable remote working, performance of business operations, distance learning, media services, and digital health offerings, or required for technical support crucial for business continuity and connectivity.

OTHER COMMUNITY- OR GOVERNMENT-BASED OPERATIONS AND ESSENTIAL FUNCTIONS

- Workers to ensure continuity of building functions, including but not limited to security and environmental controls (e.g., HVAC), the manufacturing and distribution of the products required for these functions, and the permits and inspections for construction supporting essential infrastructure.

- Elections personnel to include both public and private sector elections support.
- Workers supporting the operations of the judicial system, including judges, lawyers, and others providing legal assistance.
- Workers who support administration and delivery of unemployment insurance programs, income maintenance, employment service, disaster assistance, workers' compensation insurance and benefits programs, and pandemic assistance.
- Federal, State, and Local, Tribal, and Territorial government workers who support Mission Essential Functions and communications networks.
- Trade Officials (FTA negotiators; international data flow administrators).
- Workers who support radio, print, internet and television news and media services, including, but not limited to front line news reporters, studio, and technicians for newsgathering, reporting, and publishing news.
- Workers supporting Census 2020.
- Weather forecasters.
- Clergy for essential support.
- Workers who maintain digital systems infrastructure supporting other critical government operations.
- Workers who support necessary permitting, credentialing, vetting, and licensing for essential critical infrastructure workers and their operations.
- Customs and immigration workers who are critical to facilitating trade in support of the national emergency response supply chain.
- Educators supporting public and private K-12 schools, colleges, and universities for purposes of facilitating distance learning or performing other essential functions.
- Workers at testing centers for emergency medical services and other healthcare workers.
- Staff at government offices who perform title search, notary, and recording services in support of mortgage and real estate services and transactions.
- Residential and commercial real estate services, including settlement services.
- Workers supporting essential maintenance, manufacturing, design, operation, inspection, security, and construction for essential products, services, supply chain, and COVID-19 relief efforts.
- Workers performing services to animals in human care, including zoos and aquariums.

CRITICAL MANUFACTURING

- Workers necessary for the manufacturing of metals (including steel and aluminum), industrial minerals, semiconductors, materials and products needed for medical supply chains and for supply chains associated with transportation, aerospace, energy, communications, information technology, food and agriculture, chemical manufacturing, nuclear facilities, wood products, commodities used as fuel for power generation facilities, the operation of dams, water and wastewater treatment, processing and reprocessing of solid waste, emergency services, and the defense industrial base. Additionally, workers needed to maintain the continuity of these manufacturing functions and associated supply chains, and workers necessary to maintain a manufacturing operation in warm standby.
- Workers necessary for the manufacturing of materials and products needed to manufacture medical equipment and PPE.
- Workers necessary for mining and production of critical minerals, materials and associated essential supply chains, and workers engaged in the manufacture and maintenance of equipment and other

infrastructure necessary for mining production and distribution.

- Workers who produce or manufacture parts or equipment that supports continued operations for any essential services and increase in remote workforce, including computing and communication devices, semiconductors, and equipment such as security tools for Security Operations Centers (SOCs) or data centers.
- Workers manufacturing or providing parts and equipment that enable the maintenance and continued operation of essential businesses and facilities.

HAZARDOUS MATERIALS

- Workers who manage hazardous materials associated with any other essential activity, including but not limited to healthcare waste (medical, pharmaceuticals, medical material production, and testing operations from laboratories processing and testing kits) and energy (including nuclear facilities).
- Workers who support hazardous materials response and cleanup.
- Workers who maintain digital systems infrastructure supporting hazardous materials management operations.

FINANCIAL SERVICES

- Workers who are needed to provide, process, and maintain systems for processing, verification, and recording of financial transactions and services, including payment, clearing, and settlement; wholesale funding; insurance services; consumer and commercial lending; public accounting; and capital markets activities.
- Workers who are needed to maintain orderly market operations to ensure the continuity of financial transactions and services.
- Workers who are needed to provide business, commercial, and consumer access to bank and non-bank financial services and lending services, including ATMs, lending and money transmission, lockbox banking, and to move currency, checks, securities, and payments (e.g., armored cash carriers).
- Workers who support financial operations and those staffing call centers, such as those staffing data and security operations centers, managing physical security, or providing accounting services.
- Workers supporting production and distribution of debit and credit cards.
- Workers providing electronic point of sale support personnel for essential businesses and workers.

CHEMICAL

- Workers supporting the chemical and industrial gas supply chains, including workers at chemical manufacturing plants, laboratories, distribution facilities, and workers who transport basic raw chemical materials to the producers of industrial and consumer goods, including hand sanitizers, food and food additives, pharmaceuticals, paintings and coatings, textiles, building materials, plumbing, electrical, and paper products.
- Workers supporting the safe transportation of chemicals, including those supporting tank truck cleaning facilities and workers who manufacture packaging items.
- Workers supporting the production of protective cleaning and medical solutions, PPE, chemical consumer and institutional products, disinfectants, fragrances, and packaging that prevents the contamination of food, water, medicine, among others essential products.

- Workers supporting the operation and maintenance of facilities (particularly those with high risk chemicals and sites that cannot be shut down) whose work cannot be done remotely and requires the presence of highly trained personnel to ensure safe operations, including plant contract workers who provide inspections.
- Workers (including those in glass container manufacturing) who support the production and transportation of chlorine and alkali manufacturing, single-use plastics, and packaging that prevents the contamination or supports the continued manufacture of food, water, medicine, and other essential products.

DEFENSE INDUSTRIAL BASE

- Workers who support the essential services required to meet national security commitments to the federal government and U.S. Military, including, but are not limited to, space and aerospace workers, nuclear matters workers, mechanical and software engineers (various disciplines), manufacturing and production workers, IT support, security staff, security personnel, intelligence support, aircraft and weapon system mechanics and maintainers, and sanitary workers who maintain the hygienic viability of necessary facilities.
- Personnel working for companies, and their subcontractors, who perform under contract or sub-contract to the Department of Defense (DoD) and the Department of Energy (DoE) (on nuclear matters), as well as personnel at government-owned/contractor operated facilities, and who provide materials and services to the DoD and DoE (on nuclear matters), including support for weapon systems, software systems and cybersecurity, defense and intelligence communications, surveillance, sale of U.S. defense articles and services for export to foreign allies and partners (as authorized by the U.S. government), and space systems and other activities in support of our military, intelligence, and space forces.

COMMERCIAL FACILITIES

- Workers who support the supply chain of building materials from production through application and installation, including cabinetry, fixtures, doors, cement, hardware, plumbing (including parts and services), electrical, heating and cooling, refrigeration, appliances, paint and coatings, and workers who provide services that enable repair materials and equipment for essential functions.
- Workers supporting ecommerce through distribution, warehouse, call center facilities, and other essential operational support functions, that accept, store, and process goods, and that facilitate their transportation and delivery.
- Workers in hardware and building materials stores necessary to provide access to essential supplies, consumer electronics, technology and appliances retail, and related merchant wholesalers and distributors.
- Workers distributing, servicing, repairing, installing residential and commercial HVAC systems, boilers, furnaces and other heating, cooling, refrigeration, and ventilation equipment.
- Workers supporting the operations of commercial buildings that are critical to safety, security, and the continuance of essential activities, such as on-site property managers, building engineers, security staff, fire safety directors, janitorial personnel, and service technicians (e.g., mechanical, HVAC, plumbers, electricians, and elevator).
- Management and staff at hotels and other temporary lodging facilities that provide for COVID-19 mitigation, containment, and treatment measures or provide accommodations for essential workers.

RESIDENTIAL/SHELTER FACILITIES AND SERVICES

- Workers providing dependent care services, particularly those whose services ensure essential workers can continue to work.
- Workers who support food, shelter, and social services, and other necessities of life for needy groups and individuals, including in-need populations and COVID-19 responders including travelling medical staff.
- Workers in animal shelters.
- Workers responsible for the leasing of residential properties to provide individuals and families with ready access to available housing.
- Workers responsible for handling property management, maintenance, and related service calls who can coordinate the response to emergency "at-home" situations requiring immediate attention, as well as facilitate the reception of deliveries, mail, and other necessary services.
- Workers performing housing and commercial construction related activities, including those supporting government functions related to the building and development process, such as inspections, permitting, and plan review services that can be modified to protect the public health, but fundamentally should continue and enable the continuity of the construction industry (e.g., allow qualified private third-party inspections in case of federal government shutdown).
- Workers performing services in support of the elderly and disabled populations who coordinate a variety of services, including health care appointments and activities of daily living.
- Workers responsible for the movement of household goods.

HYGIENE PRODUCTS AND SERVICES

- Workers who produce hygiene products.
- Workers in laundromats, laundry services, and dry cleaners.
- Workers providing personal and household goods, repair, and maintenance.
- Workers providing disinfection services for all essential facilities and modes of transportation and who support the sanitation of all food manufacturing processes and operations from wholesale to retail.
- Workers necessary for the installation, maintenance, distribution, and manufacturing of water and space heating equipment and its components.
- Support required for continuity of services, including commercial disinfectant services, janitorial and cleaning personnel, and support personnel functions that need freedom of movement to access facilities in support of front-line workers.
- Workers supporting the production of home cleaning, pest control, and other essential products necessary to clean, disinfect, sanitize, and ensure the cleanliness of residential homes, shelters, and commercial facilities.
- Workers supporting agriculture irrigation infrastructure.
- Workers supporting the production of home cleaning and pest control products.