

## Infrastructure Capabilities and Subgroups Definitions

The following definitions should be used to determine the suitability of an asset to each potential Infrastructure Capability and subgroup. They provide consistency in categorizations of assets across the enterprise. Formal definitions of complexes have not been developed because they are more site specific.

Infrastructure Capabilities	FIMS Code	Definitions	Subgroup	Definitions
Design & Certification	N-101	Design & Certification infrastructure houses the activities that enable the conceptualization and sustainment of the nuclear weapons, including data for qualifying weapons design, confirming system performance requirements, and surveilling the stockpile. It includes assets for hydrodynamics, weapons engineering, radiochemistry, and surveillance.	Hydrodynamic	The Hydrodynamic subgroup includes infrastructure related to hydrodynamic testing for validating models within multi-physics design codes and predicting nuclear weapon performance
			Weapons Engineering	The Weapons Engineering subgroup includes infrastructure related to the weapons engineering lifecycle, including concept exploration, requirements satisfaction, design, production, and certification and qualification
			Radiochemistry	The Radiochemistry subgroup includes infrastructure related to the study of radioactive materials and their interactions, including evaluating data from legacy underground testing and modeling problems in nuclear forensics and attribution
			Surveillance	The Surveillance subgroup includes infrastructure related to diagnostics and measurement of the current state of the stockpile and stockpile aging
			Other	Any infrastructure related to Design & Certification that does not fall under the other subgroups
Tests & Experiments	N-102	Tests & Experiments infrastructure houses the activities that provide data to determine weapon performance characteristics, understand material properties under extreme conditions, and contributions to formation and validation of models. It includes assets for environmental tests, high energy density physics,	Environmental Tests	The Environmental Tests subgroup includes infrastructure related to testing that simulates environmental and functional conditions, such as shock, vibration, radiation, acceleration, temperature, electrostatic, and pressure conditions
			High Energy Density Physics	The High Energy Density Physics subgroup includes infrastructure to support high energy density physics - the study of matter and radiation under extreme conditions
			Radiation Effects	The Radiation Effects subgroup includes infrastructure to support radiation effects testing on components and weapons program devices

		radiography, radiation effects, subcritical experiments, material tests, and flight tests.	<b>Subcritical Experiments</b>	The Subcritical Experiments subgroup includes infrastructure to support subcritical experiments for validating models within multi-physics design codes and predicting nuclear weapon performance
			<b>Radiography</b>	The Radiography subgroup includes infrastructure that supports radiography for certification, recertification, and assessment of the stockpile
			<b>Material Testing</b>	The Material Testing subgroup includes infrastructure that supports materials testing to study how materials in a nuclear weapon behave under conditions of temperature and pressure
			<b>Flight Tests</b>	The Flight Tests subgroup includes infrastructure related to flight testing for stockpile weapon system surveillance and qualification
			<b>Other</b>	Any infrastructure related to Tests & Experiments that does not fall under the other subgroups
<b>Simulation</b>	<b>N-103</b>	Simulation infrastructure houses activities for computer modeling and the prediction of weapon performance and material properties that are not accessible through experimentation. It includes assets for simulation, codes & models and high performance computing.	<b>Simulation Codes &amp; Models</b>	The Simulation Codes & Models subgroup includes infrastructure used to support the advanced computer codes and models used to simulate the behavior of nuclear weapons and enable certification of the stockpile
			<b>High Performance Computing</b>	The High Performance Computing subgroup includes infrastructure related to High Performance Computing, including software, hardware, and facilities of sufficient power for modeling the performance of weapon systems and components and physical processes critical to nuclear operation
			<b>Other</b>	Any infrastructure related to Simulation that does not fall under the other subgroups
<b>Plutonium</b>	<b>N-104</b>	Plutonium infrastructure houses activities for this strategic defense material, including assets for production, R&D, waste, and storage.	<b>Production</b>	The Production subgroup includes infrastructure related to the production of Plutonium
			<b>Research &amp; Development</b>	The Research & Development subgroup includes infrastructure related to research & development activities for Plutonium
			<b>Waste</b>	The Waste subgroup includes infrastructure related to the treatment, transmission, and staging of Plutonium waste
			<b>Storage</b>	The Storage subgroup includes infrastructure related to the storage of Plutonium
			<b>Other</b>	Any infrastructure related to Plutonium that does not fall under the other subgroups
<b>Enriched Uranium</b>	<b>N-105</b>	Enriched uranium infrastructure houses activities for this strategic	<b>Production</b>	The Production subgroup includes infrastructure related to the production of Enriched Uranium

		defense material, including assets for production, R&D, waste, and storage.	<b>Research &amp; Development</b>	The Research & Development subgroup includes infrastructure related to research & development activities for Enriched Uranium
			<b>Waste</b>	The Waste subgroup includes infrastructure related to the treatment, transmission, and staging of Enriched Uranium waste
			<b>Storage</b>	The Storage subgroup includes infrastructure related to the storage of Enriched Uranium
			<b>Other</b>	Any infrastructure related to Enriched Uranium that does not fall under the other subgroups
<b>Depleted Uranium</b>	<b>N-106</b>	Depleted uranium infrastructure houses activities for this strategic defense material, including assets for production, R&D, waste, and storage.	<b>Production</b>	The Production subgroup includes infrastructure related to the production of Depleted Uranium
			<b>Research &amp; Development</b>	The Research & Development subgroup includes infrastructure related to research & development activities for Depleted Uranium
			<b>Waste</b>	The Waste subgroup includes infrastructure related to the treatment, transmission, and staging of Depleted Uranium waste
			<b>Storage</b>	The Storage subgroup includes infrastructure related to the storage of Depleted Uranium
			<b>Other</b>	Any infrastructure related to Depleted Uranium that does not fall under the other subgroups
<b>Tritium</b>	<b>N-107</b>	Tritium infrastructure houses activities for this radioactive gas, including assets for production, R&D, waste, and storage.	<b>Production</b>	The Production subgroup includes infrastructure related to the production of Tritium
			<b>Research &amp; Development</b>	The Research & Development subgroup includes infrastructure related to research & development activities for Tritium
			<b>Waste</b>	The Waste subgroup includes infrastructure related to the treatment, transmission, and staging of Tritium waste
			<b>Storage</b>	The Storage subgroup includes infrastructure related to the storage of Tritium
			<b>Other</b>	Any infrastructure related to Tritium that does not fall under the other subgroups
<b>Lithium</b>	<b>N-108</b>	Lithium infrastructure house activities for this material which used in nuclear weapon components and radiation detection, including assets for	<b>Production</b>	The Production subgroup includes infrastructure related to the production of Lithium
			<b>Research &amp; Development</b>	The Research & Development subgroup includes infrastructure related to research & development activities for Lithium
			<b>Waste</b>	The Waste subgroup includes infrastructure related to the treatment, transmission, and staging of Lithium waste

		production, R&D, waste, and storage.	<b>Storage</b>	The Storage subgroup includes infrastructure related to the storage of Lithium
			<b>Other</b>	Any infrastructure related to Lithium that does not fall under the other subgroups
<b>High Explosives</b>	<b>N-109</b>	High explosives infrastructure houses activities for highly energetic materials, including assets for production, R&D, and waste, storage.	<b>Production</b>	The Production subgroup includes infrastructure related to the production of High Explosives
			<b>Research &amp; Development</b>	The Research & Development subgroup includes infrastructure related to research & development activities for High Explosives
			<b>Waste</b>	The Waste subgroup includes infrastructure related to the treatment, transmission, and staging of High Explosives waste
			<b>Storage</b>	The Storage subgroup includes infrastructure related to the storage of High Explosives
			<b>Other</b>	Any infrastructure related to High Explosives that does not fall under the other subgroups
<b>Non-Nuclear Components</b>	<b>N-110</b>	Non-nuclear component infrastructure houses activities supporting the parts and processes that do not involve nuclear or high explosive materials, including assets for radiation hardened microelectronics, power sources, neutron generators, advanced manufacturing, manufacturing R&D, and multiple non-nuclear components.	<b>Radiation-Hardened Microelectronics</b>	The Radiation-Hardened Microelectronics subgroup includes infrastructure related to the design, production, and testing of radiation-hardened microelectronics
			<b>Power Sources</b>	The Power Sources subgroup includes infrastructure related to the design and production of thermal battery, primary battery, and conversion technology power source products
			<b>Neutron Generators</b>	The Neutron Generators subgroup includes infrastructure related to the design, development, production, testing, qualification, and delivery of ferroelectric and electronic neutron generators
			<b>Manufacturing Research &amp; Development</b>	The Manufacturing Research & Development subgroup includes infrastructure related to non-nuclear component manufacturing research and development, including advanced and additive manufacturing
			<b>Multiple Non-Nuclear Components</b>	The Multiple Non-Nuclear Components subgroup includes infrastructure that supports the special manufacturing, assembly, and inspection protocols for non-nuclear weapon components and assembly processes
			<b>Other</b>	Any infrastructure related to Non-Nuclear Components that does not fall under the other subgroups
<b>Weapons Assembly &amp; Disassembly</b>	<b>N-111</b>	Weapons assembly & disassembly infrastructure houses the activities required to build, service, dismantle, and store nuclear weapons, including assets for the	<b>Bays &amp; Cells</b>	The Bays & Cells subgroup includes bays and cells used for the assembly and disassembly of nuclear weapons
			<b>Staging &amp; Storage</b>	The Staging & Storage subgroup includes infrastructure for staging and storage of nuclear weapons, nuclear weapon components, strategic reserve pits, and excess pits

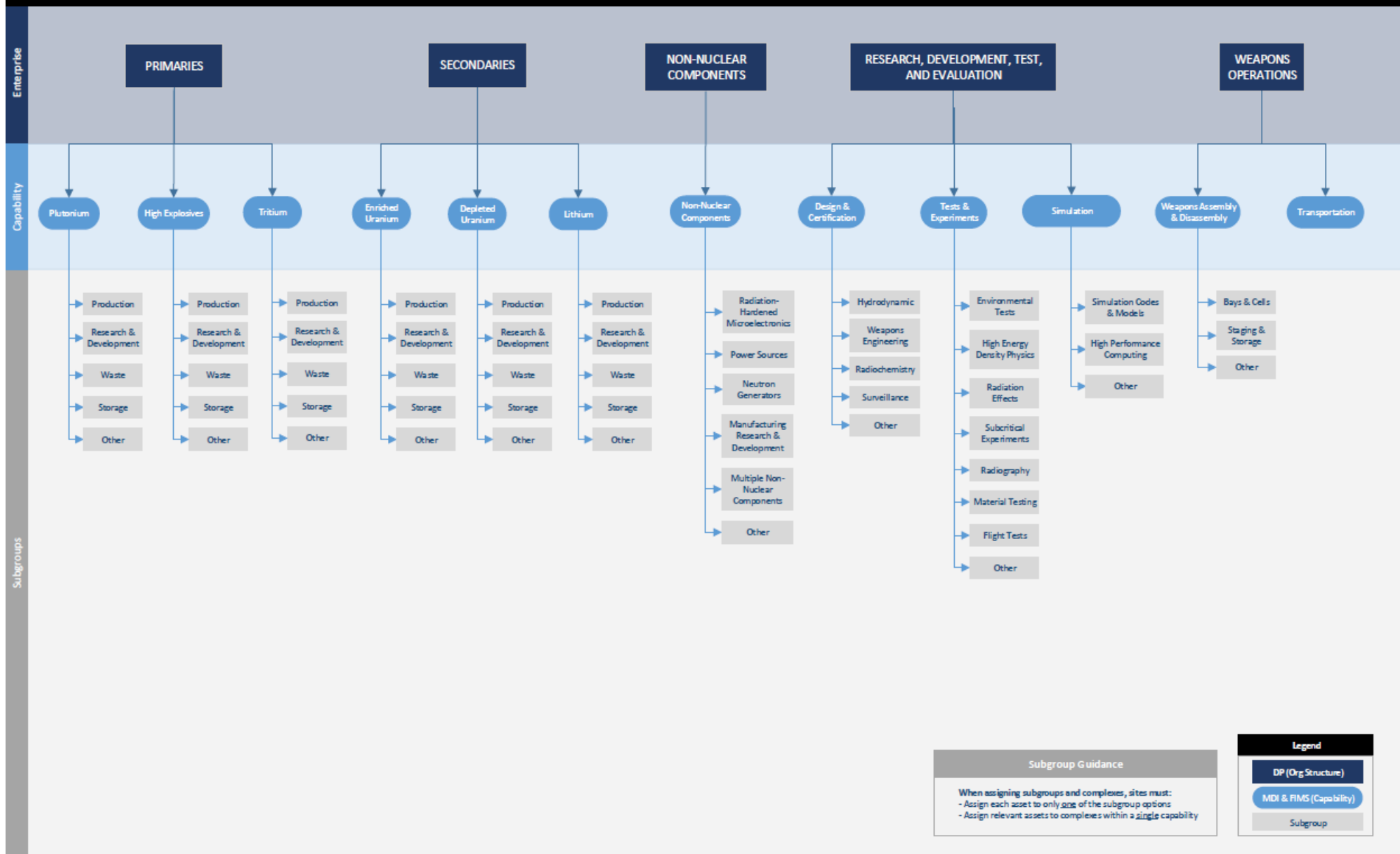
		bays & cells and storage and staging.	<b>Other</b>	Any infrastructure related to Weapons Assembly & Disassembly that does not fall under the other subgroups
<b>Transportation</b>	<b>N-112</b>	Transportation infrastructure involves the safe and secure transport of nuclear weapons, components, and materials.		
<b>IT/ Communications</b>	<b>N-113</b>	IT/Communications infrastructure houses the activities that support information technology and voice and data services, including assets for data centers, communication systems, towers, and switching stations.		
<b>Security</b>	<b>N-114</b>	Security infrastructure houses activities that contribute to the physical security of sites, including fencing, towers, ranges, guard houses, and security lights.		
<b>Mission Enabling Infrastructure</b>	<b>N-115</b>	Mission enabling infrastructure supports all mission work and is foundational to making sites habitable, including assets for power, water, emergency services, office & lab, roads & parking, storage, maintenance shops, and waste management.	<b>Power</b>	The Power subgroup includes infrastructure for the production, distribution, and storage of electricity
			<b>Water</b>	The Water subgroup includes infrastructure for the treatment, transmission, and storage of both potable and non-potable water
			<b>Emergency Services</b>	The Emergency Services subgroup includes infrastructure for facilitating emergency response measures, including specialized facilities and communication networks (e.g., fire stations, site emergency operation centers)
			<b>Office &amp; Lab</b>	The Office & Lab subgroup includes general office and lab spaces for program and administrative needs; program/mission specific office and lab space should be captured in its relevant capability
			<b>Roads &amp; Parking</b>	The Roads & Parking subgroup includes infrastructure for all roads, sidewalks, bridges, and parking
			<b>Storage</b>	The Storage subgroup includes general, multi-purpose storage infrastructure, such as general warehouses, shipping/receiving, etc.; Storage for strategic commodities (plutonium, enriched uranium, depleted uranium, tritium, lithium, high explosives) should be captured in the Storage subgroup of its relevant commodity

			<b>Maintenance Shops</b>	The Maintenance Shops subgroup includes general maintenance shops, such as machine, repair, paint shops, etc.
			<b>Waste</b>	The Waste subgroup includes infrastructure related to the treatment, transmission, and storage of site-wide, general waste, such as sewage, pumping stations, etc.; Waste for strategic commodities (plutonium, enriched uranium, depleted uranium, tritium, lithium, high explosives) should be captured in the Waste subgroup of its relevant commodity
			<b>Other</b>	Any mission-enabling infrastructure that does not fall under the other subgroups
<b>Global Security</b>	<b>N-116</b>	Global security infrastructure reduces nuclear and radiological dangers by preventing, countering, and responding to persistent and evolving threats, including assets for counter-terrorism & counter-proliferation, nonproliferation, and incident & emergency response.	<b>Counterterrorism &amp; Counter-Proliferation</b>	The Counterterrorism & Counter-Proliferation subgroup includes infrastructure related to combatting the threat of nuclear terrorism and securing nuclear weapons, materials, related technology, and knowledge to prevent their malicious use
			<b>Nonproliferation</b>	The Nonproliferation subgroup includes infrastructure related to preventing or limiting the spread of materials, technology, and expertise related to nuclear and radiological threats; developing technologies to detect nuclear proliferation worldwide; eliminating or securing inventories of surplus weapons-usable materials and infrastructure; and reducing the risk that hostile nations or terrorists could acquire nuclear weapons or weapons-usable material
			<b>Incident &amp; Emergency Response</b>	The Incident & Emergency Response subgroup includes infrastructure related to responding to nuclear incidents, locating and disabling nuclear devices, and managing consequences of nuclear detonation; Site emergency operation centers should be captured under the Emergency Services subgroup
			<b>Other</b>	Any infrastructure related to Global Security that does not fall under the other subgroups
<b>Strategic Partnership Projects</b>	<b>N-117</b>	Strategic Partnership Projects infrastructure houses work for federal agencies and non-federal entities that are outside of DOE and NNSA and involve broader national security, energy security, and scientific development missions.		

<b>DOE</b>	<b>N-118</b>	DOE infrastructure includes all non-NNSA capability codes used in FIMS for Department of Energy assets.	<b>Select the Appropriate DOE Subgroup</b>	Refer to Capability definition: DOE infrastructure includes all non-NNSA capability codes used in FIMS for Department of Energy assets
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# Infrastructure Capabilities and Subgroups Hierarchy

## INFRASTRUCTURE CAPABILITIES CHART





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