

Core Framework Themes

Cadastral – ISO Planning, Cadastre – DOI, Bureau of Land Management (BLM) – Cadastral data describe the geographic extent of past, current, and future right, title, and interest in real property, and the framework to support the description of that geographic extent. The geographic extent includes survey and description frameworks such as the Public Land Survey System, as well as parcel-by-parcel surveys and descriptions.

Elevation Terrestrial – ISO Elevation – DOI, USGS – This data contains georeferenced digital representations of terrestrial surfaces, natural or manmade, which describe vertical position above or below a datum surface. Data may be encapsulated in an evenly spaced grid (raster form) or randomly spaced (triangular irregular network, hypsography, single points). The elevation points can have varying horizontal and vertical resolution and accuracy.

Geodetic Control – ISO Location – DOC, NOAA – Geodetic control provides a common reference system for establishing coordinates for all geographic data. All NSDI framework data and users' applications data require geodetic control to accurately register spatial data. The National Spatial Reference System is the fundamental geodetic control for the United States.

Governmental Units – ISO Boundaries – DOC, USCB – These data describe, by a consistent set of rules and semantic definitions, the official boundary of federal, state, local, and tribal governments as reported/certified to the U.S. Census Bureau by responsible officials of each government for purposes of reporting the Nation's official statistics.

Hydrography – ISO Inland Waters – DOI, USGS – This data theme includes surface water features such as lakes, ponds, streams and rivers, canals, oceans, and coastlines. Each hydrography feature is assigned a permanent feature identification code (Environmental Protection Agency Reach Code) and may also be identified by a feature name. Spatial positions of features are encoded as centerlines and polygons. Also encoded is network connectivity and direction of flow.

Ortho Imagery – ISO Imagery, Base Maps, Earth Cover – DOI, USGS – This dataset contains georeferenced images of the Earth's surface, collected by a sensor in which image object displacement has been removed for sensor distortions and orientation, and terrain relief. For very large surface areas, an Earth curvature correction may be applied. Digital orthoimages encode the optical electromagnetic spectrum as discrete values modeled in an array of georeferenced pixels. Digital orthoimages have the geometric characteristics of a map, and image qualities of a photograph.

Transportation – ISO Transportation – Department of Transportation, Bureau of Transportation Statistics – Transportation data are used to model the geographic locations, interconnectedness, and characteristics of the transportation system within the United States. The transportation system includes both physical and non-physical components representing all modes of travel that allow the movement of goods and people between locations.

Supplemental Data Themes

Baseline (Maritime) – ISO Oceans – Co-leaders – DOC, NOAA and DOI, Minerals Management Service (MMS) – Baseline represents the line from which maritime zones and limits are measured. Examples of these limits include the territorial sea, contiguous zone, and exclusive economic zone. The spatial extent of the baseline is defined as "ordinary low water," interpreted as mean lower low water, as depicted on National Ocean Service nautical charts and/or appropriate supplemental information.

Biological Resources – ISO Biota – DOI, U.S. Geological Survey (USGS) – This dataset includes data pertaining to or descriptive of (nonhuman) biological resources and their distributions and habitats, including data at the suborganismal (genetics, physiology, anatomy, etc.), organismal (subspecies, species, systematics), and ecological (populations, communities, ecosystems, biomes, etc.) levels.

Buildings and Facilities – ISO Structure – General Services Administration – The facility theme includes federal sites or entities with a geospatial location deliberately established for designated activities; a facility database might describe a factory, military base, college, hospital, power plant, fishery, national park, office building, space command center, or prison. Facility data is submitted from several agencies, since there is no one party responsible for all the facilities in the Nation, and facilities encompass a broad spectrum of activities. The FGDC promotes standardizing on database structures and schemas to the extent practical.

Cadastral (Offshore) – ISO Planning, Cadastre – DOI, MMS – Offshore Cadastre is the land management system used on the Outer Continental Shelf. It extends from the baseline to the extent of United States jurisdiction. Existing coverage is currently limited to the conterminous United States and portions of Alaska. Maximum extent of United States jurisdiction is not yet mathematically calculated.

Climate – ISO Climatology, Meteorology, Atmosphere – Co-leaders, Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) and DOC, NOAA – Climate data describe the spatial and temporal characteristics of the Earth's atmosphere/hydrosphere/land surface system. These data represent both model-generated and observed (either in situ or remotely sensed) environmental information, which can be summarized to describe surface, near surface and atmospheric conditions over a range of scales.

Cultural and Demographic Statistics – ISO Society – DOC, U.S. Census Bureau (USCB) – These geospatially referenced data describe the characteristics of people, the nature of the structures in which they live and work, the economic and other activities they pursue, the facilities they use to support their health, recreational and other needs, the environmental consequences of their presence, and the boundaries, names and numeric codes of geographic entities used to report the information collected.

Cultural Resources – ISO Society – DOI, National Park Service – The cultural resources theme includes historic places such as districts, sites, buildings, and structures of significance in history, architecture, engineering, or culture. Cultural resources also encompass prehistoric features as well as historic landscapes.

Earth Cover – ISO Imagery, Base Maps, Earth Cover – DOI, USGS – The Earth Cover theme uses a hierarchical classification system based on observable form and structure, as opposed to function or use. This system transitions from generalized to more specific and detailed class divisions, and provides a framework within which multiple land cover and land use classification systems can be cross-referenced. This system is applicable everywhere on the surface of the Earth. This theme differs from the Vegetation and Wetlands themes, which provide additional detail.

Elevation Bathymetric – ISO Elevation – Co-leaders – DOC, NOAA (U.S. waters outside channels) and US Army Corps of Engineers (USACE) (inland waterways) – The bathymetric data for Inland and Intercoastal waterways is highly accurate bathymetric sounding information collected to ensure that federal navigation channels are maintained to their authorized depths. Bathymetric survey activities support the Nation's critical nautical charting program. This data is also used to create Electronic Navigational Charts. The bathymetric sounding data supports the elevation layer of the geospatial data framework.

Federal Land Ownership Status – ISO Planning, Cadastre – DOI, BLM – Federal land ownership status includes the establishment and maintenance of a system for the storage and dissemination of information describing all title, estate or interest of the federal government in a parcel of real and mineral property. The ownership status system is the portrayal of title for all such federal estates or interests in land.

Flood Hazards – ISO Environment – Federal Emergency Management Agency – National Flood Insurance Program has prepared flood hazard data for approximately 18,000 communities. The primary information prepared for these communities is for the 1 percent annual chance (100-year) flood, and includes documentation of the boundaries and elevations of that flood.

Geographic Names – ISO Location – DOI, USGS – This dataset contains data or information on geographic place names deemed official for federal use by the U.S. Board on Geographic Names as pursuant to Public Law 80-242. Geographic Names information includes both the official place name (current, historical, and aliases) and locative direct (i.e., geographic coordinates) and indirect (i.e., State and County where place is located) geospatial identifiers and categorized as populated places, schools, reservoirs, parks, streams, valleys, and ridges.

Geologic – ISO Geoscientific Information – DOI, USGS – The geologic spatial data theme includes all geologic mapping information and related geoscience spatial data (including associated geophysical, geochemical, geochronologic, and paleontologic data) that can contribute to the National Geologic Map Database as pursuant to Public Law 106-148.

Housing – ISO Society – Department of Housing and Urban Development (HUD) – HUD's database maintains geographic data on homeownership rates, including many attributes such as HUD revitalization zones, location of various forms of housing assistance, first-time homebuyers, underserved areas, and race. Data standards have not yet been formalized.

International Boundaries – ISO Boundaries – Department of State – International boundary data include both textual information to describe, and GIS digital cartographic data to depict, both land and maritime international boundaries, other lines of separation, limits, zones, enclaves/exclaves and special areas between States and dependencies.

Law Enforcement Statistics – ISO Society – Department of Justice – Law enforcement statistics describe the occurrence of events (including incidences, offenses and arrests) geospatially located, related to ordinance and statutory violations and the individuals involved in those occurrences. Also included are data related to deployment of law enforcement resources and performance measures.

Marine Boundaries – ISO Boundaries – Co-leaders – DOC, NOAA and DOI, MMS – Marine boundaries depict offshore waters and seabeds over which the United States has sovereignty and jurisdiction.

Offshore Minerals – ISO Economy – DOI, MMS – Offshore minerals include minerals occurring in submerged lands. Examples of marine minerals include oil, gas, sulfur, gold, sand and gravel, and manganese.

Outer Continental Shelf Submerged Lands – ISO Oceans – DOI, MMS – This data includes lands covered by water at any stage of the tide, as distinguished from tidelands, which are attached to the mainland or an island and cover and uncover with the tide. Tidelands presuppose a high-water line as the upper boundary; whereas submerged lands do not.

Public Health – ISO Health – Department of Health and Human Services – Public health themes relate to the protection, improvement and promotion of the health and safety of all people. For example, public health databases include spatial data on mortality and natality events, infectious and notifiable diseases, incident cancer cases, behavioral risk factor and tuberculosis surveillance, hazardous substance releases and health effects, hospital statistics and other similar data.

Public Land Conveyance (patent) Records – ISO Planning, Cadastre – DOI, BLM – Public land conveyance data are the records that describe all past, current, and future, right, title, and interest in real property. This is a system of storage, retrieval and dissemination of documents describing the right, title, and interest of a parcel.

Shoreline – ISO Oceans – DOC, NOAA – Shorelines represent the intersection of the land with the water surface. The shoreline shown on NOAA Charts represents the line of contact between the land and a selected water elevation. In areas affected by tidal fluctuations, this line of contact is the mean high water line.

Soils – ISO Geoscientific Information – USDA, NRCS – Soil data consist of georeferenced digital map data and associated tabular attribute data. The map data describe the spatial distribution of the various soils that cover the Earth's surface. The attribute data describe the proportionate extent of the various soils as well as the physical and chemical characteristics of those soils. The physical and chemical properties are based on observed and measured values, as well as model-generated values. Also included are model-generated assessments of the suitability or limitations of the soils to various land uses.

Transportation (Marine) – ISO Transportation – USACE – The Navigation Channel Framework consists of highly accurate dimensions (geographic coordinates for channel sides, centerlines, widenings, turning basins, and River Mile Markers) for every federal navigation channel maintained by USACE. The Navigation Framework will provide the basis for the marine transportation theme of the geospatial data framework.

Vegetation – ISO Biota – USDA, U.S. Forest Service – Vegetation data describe a collection of plants or plant communities with distinguishable characteristics that occupy an area of interest. Existing vegetation covers or is visible at or above the land or water surface and does not include abiotic factors that tend to describe potential vegetation.

Watershed Boundaries – ISO Inland Waters – Co-leaders: DOI, USGS and USDA, NRCS – This data theme encodes hydrologic, watershed boundaries into topographically defined sets of drainage areas, organized in a nested hierarchy by size, and based on a standard hydrologic unit coding system.

Wetlands – ISO Inland Waters – DOI, Fish and Wildlife Service – The wetlands data layer provides the classification, location, and extent of wetlands and deepwater habitats. There is no attempt to define the proprietary limits or jurisdictional wetland boundaries of any federal, state, or local agencies.

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