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**Data Visualization Accessibility Procedure**

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Directive No: 2130-P-05.0

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*Issued by the EPA Chief Information Officer,  
Pursuant to Delegation 1-19, dated 07/07/2005*

**Data Visualization Accessibility Procedure**

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**1. PURPOSE**

This procedure addresses and establishes accessibility requirements, recommendations, and exceptions for content items developed by the United States Environmental Protection Agency (US EPA; EPA) using information and communications technologies (ICTs), geographic information systems (GIS), and business intelligence software (BIS). This procedure aims to ensure the US EPA communicates data into actionable information that can be accessed, interpreted, understood, and used by the broadest audiences possible, both within the Agency and among its stakeholders.

**2. SCOPE**

This directive applies to ICTs, GIS, and BIS used by US EPA for data visualization and analysis. These suites of software and digital services include those hosted on public and internal domains and subdomains of the US EPA as well as sites hosted by authorized third-party providers. The procedure herein compliments the Agency's ICT, GIS and BIS-specific standards, procedures, and guidance. This procedure does not replace activities established by [US EPA Web Product Review](#). Content items shared on third-party social media websites and platforms must also adhere to the [US EPA Social Media Policy](#) and [applicable guidance](#).

**3. AUDIENCE**

This procedure's audience includes members of the US EPA geospatial and data science communities as well as any other team or individual involved in EPA content production, management, and approval.

**4. BACKGROUND**

The US EPA is committed to the accurate collection and communication of data used to protect human health and the environment. This commitment ensures that the Agency's decisions and recommendations are informed by the best available evidence while promoting transparent and open government. Among its software and services, the US EPA leverages ICTs, GIS, and BIS to manage data, conduct analyses, and develop content items aimed at the broadest audience possible. This audience includes disabled, impaired, and disadvantaged peoples in accordance with Section 508 of the Rehabilitation Act as amended (29 U.S.C. 794(d)), hereafter termed Section 508.

To the extent practicable, Section 508 mandates the development, procurement, maintenance, and use of software and digital services so people with disabilities can access and use data and related information comparable to audiences outside of the Section 508 purview. Though ICTs, GIS, and BIS increasingly provide means for

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maximizing accessibility, technological limitations and/or design objectives can limit full compliance of either these products or their output. For example, many ICTs, GIS, or BIS are proprietary with specific, non-modifiable elements that may contain Section 508-incompatible features (*i.e.*, they are commercial-off-the-shelf (COTS) products). When such software or digital services best meet an Agency objective or use case, but fail to conform to one or more requirements established by the U.S. Access Board Section 508 Standards, EPA staff can request an undue burden or fundamental alteration exception per the [Section 508 Exceptions Procedure](#). Though this exception procedure applies to software and digital services, it does not inherently apply to the content items generated using approved or excepted ICTs, GIS, or BIS. Submitting individual waivers or exceptions for these content items places undue burden upon the Agency and its affiliates. Nevertheless, and as will be established by this procedure, Agency staff and affiliates must ensure that their content items maximize accessibility and alternative access for product-inaccessible functions or information, even though an Agency-wide exception may be enacted for an ICT, GIS, or BIS to avoid inefficiencies.

To enhance the Agency's mission, this procedure addresses and establishes accessibility requirements, recommendations, and exceptions for ICTs, GIS, and BIS used by the EPA for data visualization and analysis. As many of these software and digital services are self-service platforms, key considerations can be made regarding accessibility and alternate-access design. These assets may not meet full compliance with Section 508. Nevertheless, EPA staff and affiliates can and must implement best practices to ensure the US EPA communicates data effectively and to the broadest audiences possible.

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**5. AUTHORITY**

This procedure supplements federal requirements outlined within the:

- [Section 508 of the Rehabilitation Act of 1973 \(29 U.S.C. § 794d\)](#), as amended by the [Workforce Investment Act of 1998](#), Pub. L. No. 105-220, 112 Stat. 939;
- [Section 504 of the Rehabilitation Act of 1973 \(29 U.S.C. § 794\)](#);
- [Clinger-Cohen Act of 1996](#), Pub. L. No. 104-106, Division E, February 10, 1996;
- [21<sup>st</sup> Century Integrated Digital Experience Act of 2018](#), Pub. L. No. 115-336, 44 U.S.C. 3501, December 20, 2018;
- [21st Century Communications and Video Accessibility Act of 2010](#), Pub. L. No. 111-260, October 8, 2010;
- [E-Government Act of 2002](#), Pub. L. 107-347, 44 U.S.C. Chapter 36, December 17, 2002;
- [Information Quality Act of 2001](#), Section 515 of the Treasury and Government Appropriations Act of 2001, Pub. L. 106-554, 31 USC 3516).;
- [Information and Communication Technology \(ICT\) Final Standards and Guidelines](#), 36 C.F.R., Part 1194, 87 U.S.C. (2017; amended 2018);
- U.S. Web Design System ([USWDS\) Web Standards](#), January 22, 2020

The following EPA policies, procedures, and guidance expand upon the web management requirements outlined within the above legislation and compliment their related authorities:

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- [EPA Section 508 Policy](#)
- [EPA Section 508 Acquisition Procedure](#)
- [EPA Section 508 Testing Procedure](#)
- [EPA Section 508 Exception Procedure](#)
- [Enterprise Information Management Policy](#)
- [EPA Web Standards](#)
- [EPA Web Procedures and Policies](#)
- [Geospatial Data Publishing Guidance](#)

When applicable, geospatial data and geographic information must also adhere to the policies and standards outlined within the:

- [Geospatial Data Act of 2018](#)
- [Evidence Based Policymaking Act](#)
- [National Geospatial Data Policy](#)

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**6. PROCEDURE**

- A. *Consultation and Documentation.* As needed, Agency developers should consult the appropriate ICT, GIS or BIS system manager(s), Section 508 liaison(s), public affairs official(s), regional coordinator(s), technical lead(s), and/or web council member(s) regarding accessible design and alternative access. These teams can also advise on the appropriateness of a software or digital service for a given use case. Whenever possible, developers should also reference GIS and BIS technical specifications provided by product vendors, system managers(s), or program administrator(s). All actions, considerations, and consultations aimed at maximizing accessibility must be documented by developers. If requested, developers may submit this documentation to justify their good faith effort toward Section 508 compliance. Tools provided by [the EPA](#) and [the federal government](#) may aid testing of authoring tools, content items, and related output.
- B. *Understanding Accessibility Requirements & Recommendations.* Developers should reference the following resources before developing content items: [web content accessibility](#) and [related requirements](#), [authoring tool accessibility guidelines](#), and [user agent accessibility guidance](#). The General Service Administration's (GSA) resources on [Section 508 standards and exceptions](#) and [Voluntary Product Accessibility Templates®](#) (VPAT) may compliment Agency-furnished resources. The following actions provide a preliminary list of considerations that can maximize the accessibility of Agency content items:
- 1) *Providing Text Equivalent of Visual Information.* Text can serve as a substitute for data or information provided by other means, including audio, graphics, maps, and videos. Termed text equivalent of information, this feature can ensure that people with disabilities, including but not limited to people with visual impairments, can access and interpret information similarly to audiences outside of the Section 508 purview. EPA staff and their affiliates should provide text equivalent of visual information for all content developed using ICTs, GIS, or BIS in a file structure that can be read or interpreted by

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[assistive technologies](#), such as screen readers. File extensions for text-equivalent files (e.g., .csv, .txt., .xlsx, .pdf) should be indicated after the link per [EPA Web Standards](#), unless the information is an HTML file. If videos are included, subtitles or transcript must be made available. Audio-only content must have a transcript; map elements must be accompanied by explanatory text when appropriate. Certain exceptions may exist for real-time or near real-time data, wherein the most current data possible should be referenced. Data and information provided as text equivalent of visual information must also maximize Section 508 compliance. Please review the following guides for creating 508-compliant [documents](#) and [PDFs](#), including [web-ready PDFs](#), [modifying existing PDFs](#), and [providing document metadata](#).

- 2) *Deploying Alternative Text for Images, Tables, Graphics & Charts.* Alternative Text, or Alt Text, is used within HTML code to describe the appearance and purpose of a webpage or related elements. Providing Alt Text enhances information access and improves accessibility for visitors and stakeholders who cannot visually process specific content. When appropriate and possible, Agency staff and affiliates should use Alt Text for content items and their components. Such text should convey supplemental meaning that many be inferred by a sighted audience, instead of a literal description. When possible, images with text should not be embedded within content items. Text elements should be used instead of images of text. The Agency recommends W3C AltText best practices, especially [Writing for Web Accessibility](#) and [Image Concepts](#) tutorials. Please note that purely decorative images do not require Alt Text and can be coded as decorative.
  
- 3) *Ensuring Sufficient Color Contrast & Differentiated Design.* Color contrast and differentiated design refer to the qualities of an image or element in the forefront of a view when compared to a relative background. Both features can help certain audiences perceive, interact with, and interpret Agency content items. When visualizing data, Agency staff and affiliates should generate color plates that are simple and intuitive with common cartographic conventions maintained (e.g., water symbolized blue). Colors used should contrast each other without being excessively bright with symbology differentiated beyond color alone. On U.S. federal webpages, content items should strive for color contrast ratios approaching 4:5:1. Developers can test color palettes for accessible combinations using the [Accessible Color Palette Builder](#), [Colour Contrast Analyzer \(CCA\)](#), [ColorBrewer](#), [Contrast Grid](#), or other tools such as the [Google Chrome Extension WAVE Tool](#). The contrast between text and background colors can be further measured with [WebAIM's Color Contrast Checker](#). Certain exceptions may exist regarding design, including when certain Section 508-noncompliant color choices are essential for understanding context or functionality. Logos and incidental graphical elements are exempt from Section 508 compliance because they have no minimum contrast requirements. Under this exceptions, Alt Text must be used to denote the presence of a logo or adequately describe when logos or incidental graphic elements are included. Text that is part of a logo has no minimum contrast requirement so long as Alt Text is used to denote the presence of a logo.

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- 4) *Enabling Equivalent Facilitation and Flexible Symbology.* Equivalent facilitation is the use of an alternative design or technology that results in substantially equivalent or greater accessibility and usability by people with disabilities than would be provided by conformance to one or more of the requirements of revised Section 508 standards. When designing content items using GIS and BIS, developers should enable flexible sorting through symbology. This means the vector features, colors, and/or icons should readily distinguish elements. For example, if locations or facilities shown on a map are classified differently (e.g., locations of different types of federal cleanups, different types of media), then the vector features (e.g., pushpins, flags, or other identifying markers) should not rely solely on color to mark the difference between data types presented. Instead, vector icons should rely on color, shape, style, and/or texture, etc. to distinguish among data types. Designers can rely solely on color if the ICT includes filters allowing for markers of only one color to be displayed. In terms of geographic products, the Agency recommends clustering point features to allow a keyboard user to select a particular geographic area quickly. Limiting dynamic content that requires mouse movement can facilitate flexible sorting.
- C. *Adhering to EPA Web Standards and Agency “Look and Feel.”* EPA developers and users must, to the extent practicable, adhere to [EPA Web Standards](#), [Web Style Guide](#), and [“Look and Feel”](#) when designing EPA content items and related output. Content should be presented linearly with vertical scrolling with content aligned left where possible for simplicity. Regarding User Interface, buttons should be contextualized and located near the element they modify. Clickable actions should be large and form fields have ample space. Design should support mobile and touchscreen use. When these items include text, the Agency’s [web-based writing standards and guidance](#) must be consulted. Per the Safe Harbor Provision, legacy GIS and BIS and legacy GIS or BIS-generated products that conform to previous iterations of Section 508 standards are not required to be modified to comply with revised Section 508 standards. This provision only applies to the component(s) or function(s) of the GIS or BIS determined to be compliant with the original Section 508 standards, and only to the extent that such components of the ICT are not altered. The effective date of the Section 508 revision is January 21, 2018. Applications should be compliant with the Agency’s most current HTML specifications.

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**7. ROLES AND RESPONSIBILITIES**

- A. **Chief Information Officer.** The Chief Information Officer (CIO) provides leadership and reports on Agency-wide, Section 508 efforts to the EPA Administrator and provides leadership for EPA’s information management (IM) and information technology (IT) programs and policies, including software and digital services used for data visualization and analysis, including GIS and BIS.
- B. **Chief Technology and Chief Data Officers.** As IT/IM systems executives, the Chief Technology Officer (CTO) and Chief Data Officer (CDO) manage EPA’s IT architecture and enterprise-wide IT services catalog. When appropriate, the CTO and CDO collect and appropriately disseminate [accessibility recommendations and](#)

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[documentation from vendors](#), including but not limited to guidance on assistive technologies.

- C. **Geographic Information Officer.** The Geographic Information Officer (GIO) manages EPA's GIS, which encompasses mapping applications, geospatial data, and related services. The GIO provides guidance on the "Data Visualization Accessibility Procedure" to the geospatial and data science communities of practice. They also coordinate with key stakeholders to ensure the procedure is applicable and relevant within and among Agency programs. They oversee and approve updates to this procedure as necessary.
- D. **Assistant and Associate Administrators, Regional Administrators, and Laboratory Directors.** In their management capacity, Assistant and Associate Administrators, Regional Administrators, and Laboratory Directors coordinate with GIS and BIS system managers and related communities of practice (COPs) around, these managers periodically inspect public-facing content items to gauge accessibility and Section 508 compliance. When appropriate, they provide support to EPA employees using assistive technologies and connect them with appropriate guidance from GIS or BIS system manager(s).
- E. **Senior Information Officials.** Senior Information Officials (SIOs) support the accessibility and Section 508-related responsibilities of Assistant and Associate Administrators, Regional Administrators, and Laboratory Directors. When delegated by their management or as appropriate given accepted workflows, SIOs review, approve, and maintain records of legal exceptions to Section 508 and requests for class undue burden or class fundamental alterations, which cannot be otherwise delegated below the SIO level.
- F. **Information Management Officials.** In coordination with GIS and BIS system managers, Information Management Officials (IMOs) report accessibility metrics and related information from their respective offices to Assistant and Associate Administrators, Regional Administrators, and Laboratory Directors. If delegated by an SIO, IMOs designate a Section 508 liaison for their office and communicate Section 508 issues or challenges to their management. IMOs also review and adjudicate Exception Justification Forms and monitor GIS and BIS authoring tools, content items and related output with the GIO.
- G. **EPA Geospatial Advisory Committee.** As a community of experts, the EPA Geospatial Advisory Committee (EGAC) oversees governance and production of geospatial data, content items, and related output produced by the Agency. Encompassing Regional GIS Coordinators, Office and AAship GIS Leads, and EPA GeoPlatform Online (GPO) Administrators, the EGAC is responsible for implementing and supporting this procedure as directed by the GIO. The EGAC establishes priorities, develops policies, and designates authorities to GIS analysts or system administrators to ensure that the Agency's geospatial data and cartographic information maximize accessibility and Section 508 compliance. With developers, EGAC maintains records of undue burden justifications unless otherwise delegated to other GPO Administrators.

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- H. **Section 508 Leads and Liaisons.** The Agency's Section 508 Leads and Liaisons support and consultant on Section 508-related directives, guidance, and best practices. Section 508 Leads serve as subject matter experts responsible for both developing and widely circulating training opportunities and practicable materials that guide Agency ICT users on accessibility best practices. Through the Working Capital Fund, they provide recommendations on data visualization and analytical services as well as solutions when full Section 508 compliance is either situationally impossible or otherwise impracticable. Section 508 Liaisons coordinate with Section 508 Leads and maintain currency in advancement of accessibility requirements and procedures for compliance at the EPA. Section 508 Liaisons may serve as a Section 508 Lead but are not inherently required to be subject matter experts.
- I. **EPA Web Council.** Chaired by the national content and infrastructure managers, the EPA Web Council ensures that Agency web content maximizes accessibility and Section 508 compliance, including content items and related output from GIS and BIS. The Web Council clarifies exemptions for content owner and developers regarding data visualization on the web.
- J. **Senior Resource Officials.** When approving ICT and programmatic budget requests, Senior Resource Officials (SROs) ensure that adequate resources are allotted to guide staff on accessibility considerations and review Agency content for Section 508 compliance. SROs oversee resource management activities related to data visualization and analytical services in coordination with ICT content or system owner(s).
- K. **Grants Management Officers.** Grants Management Officers (GMOs) incorporate accessibility and Section 508 standards into EPA grant awards that have an ICT component. In coordination with Section 508 Leads and Liaisons, GMOs educate grantees on data visualization best practices and product requirements when using federal funds in grant awards that have an ICT component. GMOs request accessibility conformance reports (ACR) documentation from EPA grantees and grantee vendors.
- L. **Contracting Officers (COs) and Contracting Officer's Representatives (CORs):** Contracting Officers and Contracting Officer's Representatives ensure that accessibility requirements and documentation, as defined by the Section 508 standards, are incorporated into procurement documents and deliverables. Cos and CORs appropriate Section 508 standards in requirements documents, performance work statements, and statements of work for all users. They ensure that Section 508 requirements and language, specific to GIS and BIS, are included in the solicitation package, contract documentation, and deliverables; and they verify that accessibility standards outlined in contracts are met before accepting deliverables.

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**8. RELATED INFORMATION**

This procedure follows several Office of Management and Budget Circulars, Memoranda, and Strategies which outline objects for communicating data into actionable information:

- [Circular No. A-130](#), "Managing Information as a Strategic Resource", 2016.

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- [CIO Policy M-17-06](#), “Policies for Federal Agency Public Websites and Digital Services 2016”.
- [Memorandum for the Chief Acquisition Officers, Senior Procurement Executives, Chief Information Officers, and Small Agency Council Members](#), “Strategic Plan for Improving Management of Section 508 of the 345 Rehabilitation Act,” January 24, 2013.
- [Digital Government Strategy](#), “Building a 21<sup>st</sup> Century Platform to Better Serve the American People”, May 23, 2012
- Nondiscrimination in Programs or Activities Receiving Federal Assistance from the 725 Environmental Protection Agency, [40 C.F.R. Part 7](#), January 24, 2013.

This procedure follows several EPA Memoranda which detail Administrative authorities and data publishing procedures, including:

- [CIO Policy 2122.1](#), “Enterprise Architecture Policy,” December 21, 2017
- [CIO Policy 2180.1](#), “Web Governance and Management,” May 7, 2013
- [U.S. EPA Procedure](#), “Procedure for providing reasonable accommodation for EPA employees and applicants with disabilities, 2004 [October 2020].
- [Restructuring EPA's Online Presence](#), 25 February 2010
- [CIO Policy 2102.0](#), “Senior Information Officials,” July 7, 2005
- [Improving EPA's Web Site](#), 6 December 2004
- Nondiscrimination in Programs or Activities Receiving Federal Assistance from the 725 Environmental Protection Agency, [40 C.F.R. Part 7](#)

Concerning geospatial data and geographic information, the following EPA Memoranda relate specifically to ICTs including and contained within EPA GeoPlatform:

- EPA GeoPlatform memo – 2017
- [Deputy Administrator GeoPlatform memo](#)

Related EPA policies, procedures, standards, guidance, and resources are included in the [EPA Web Guide](#).

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**9. DEFINITIONS**

**Accessible:** Accessible data are made available in convenient, modifiable, and open formats that can be retrieved, downloaded, indexed, and searched by the broadest audiences possible. Formats should be machine-readable (*i.e.*, data are reasonably structured to allow automated processing), easily interpretable, and provided in multiple formats for data consumption. To the extent permitted by law, these formats should be non-proprietary and publicly available with no restrictions placed upon their use per OMB Memorandum M-13-13, “Open Data Policy – Managing Information as an Asset,” May 9, 2013. Accessible data should not discriminate against any person or group of people. For the purposes of GIS and BIS, this procedure adopts the definition of “accessibility” for Information and Communication Technologies (ICTs) defined by the United States Access Board’s (Access Board) Electronic and Information Technology Accessibility Standards (36 C.F.R. Part 1194).



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**Alternative Access, or Alternative Means of Access:** Actions, processes, services, system, or content items that make data and information available to people with disabilities when an Agency would face a significant difficulty or expense (for example, undue burden) in meeting applicable Section 508 standards.

**Assistive Technology:** Any item, piece of equipment, or system, whether acquired commercially, modified, or customized, that is commonly used to increase, maintain, or improve the functional capabilities of individuals with disabilities.

**Best Meets:** In the context of this procedure, when software or digital services and their derivative content items fail to conform to one or more requirements of the Agency's Section 508 standards yet maximize both accessibility considerations as well as EPA needs and use cases. This phrase encompasses aspects of balance, effort, and intention, as documented during product assessment or development, to ensure that EPA communicates data into actionable information which can be accessed, interpreted, understood, and used by the broadest audiences possible.

**Class Exemption for Undue Burden, or Fundamental Alteration:** Where the Agency anticipates recurring instances of undue burden or fundamental alteration for certain GIS or BIS, a class undue burden or class fundamental alteration may be requested on a program, regional, or Agency-wide basis. The purpose of granting a class exemption for undue burden or fundamental alteration is to be efficient and effective by reducing the need to document a recurring undue burden or fundamental alteration repeatedly. Class exemption designations still require that an alternative means of access be provided

**Business Intelligence Software:** Applications or digital services designed to retrieve, analyze, transform, and report data for business intelligence.

**Commercial Non-availability:** Commercial non-availability is used to describe those GIS or BIS procurements where the marketplace has no commercial products or information systems that meet any of the technical or functional standards.

**Content Items:** Applications, data, dashboards, documents, services, and other artifacts created using GIS and BIS, including but not limited to geographic information and cartographic products. Content items can include electronic materials, information, or data as well as the encoding that defines its structure, presentation, and interactions. Content items can also include official Agency communications or internal electronic content that is not public facing but which constitutes official business, for example: emergency notifications, initial or final decision adjudicating an administrative claim or proceeding, internal or external program or policy announcement, notice of benefits, program eligibility, employment opportunity, or personnel action, formal acknowledgment of receipt, survey questionnaire; template or form; educational or training materials, or intranet content designed as a webpage.

**Commercial-Off-The-Shelf (COTS):** Currently existing and commercially available software and hardware is also referred to as off-the-shelf. COTS contain pre-established and often non-modifiable functionality. The ability to customize COTS is limited.

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**Communities of Practice:** Communities composed of staff across EPA supporting content creation and publication. Communities will be encouraged to engage in discussions, develop and deliver webinars, best practices, and otherwise share knowledge.

**Data Science:** Extraction of actionable knowledge from data through a process of discovery, or hypothesis and hypothesis testing.

**Digital Services:** Digital services include the delivery of digital information (i.e., data or content) and transactional services (e.g., online forms, benefits applications) across a variety of platforms, devices, and delivery mechanisms (e.g., websites, mobile applications, and social media).

**EPA GeoPlatform Online (GPO):** The US EPA-branded instance of ArcGIS Online (AGOL) used for cartographic production and geospatial analysis. Purchased from the software provider Esri, the EPA GeoPlatform Online is for use by the US EPA and affiliated persons.

**Equivalent Facilitation.** The use of an alternative design or technology that results in substantially equivalent or greater accessibility and usability by individuals with disabilities than would be provided by conformance to one or more of the requirements of the revised Section 508 standards.

**Exceptions.** Those exceptions when GIS or BIS do not need to comply with the Revised 508 Standards to the extent specified in [Section 508 Chapter 2: Scoping Requirements E202 General Exceptions of ICT Final Standards and Guidelines](#).

**Fundamental Alteration.** A modification to GIS or BIS that would change the basic nature or purpose for which the product or its components were designed. Fundamental alteration exemptions require that developer provide an alternative means of access.

**Inclusive Design.** Inclusive Design is a methodology, born out of digital environments, that enables and draws on the full range of human diversity. Most importantly, this means including and learning from people with a range of perspectives.

**Information:** Any communication or representation of knowledge such as facts, data, or opinions in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms per OMB Circular A-130, "Managing Information as a Strategic Resource," July 26, 2016.

**Information Communication Technology:** Includes information technology and any equipment or interconnected system or subsystem of equipment, that is used in the creation, conversion, or duplication of data or information. The term electronic and information and communication technology includes, but is not limited to, telecommunications products (such as telephones, interconnected Voice over Internet Protocol (VoIP) products and Customer Premises Equipment), information kiosks and transaction machines, websites, multimedia presentations, and office equipment such as copiers and fax machines. The term does not include any equipment that contains embedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management,

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movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology.

**Information Technology:** Any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources.

**Machine-readable:** Refers to information or data in a format that can be easily processed by a computer without human intervention while ensuring no semantic meaning is lost. (<https://project-open-data.cio.gov/glossary/>)

**Official Agency Communications.** Internal agency electronic content that is not public-facing that constitutes official business and is communicated by an agency through one or more of the following: emergency notification; initial or final decision adjudicating an administrative claim or proceeding; internal or external program or policy announcement; notice of benefits, program eligibility, employment opportunity, or personnel action; formal acknowledgment of receipt; survey questionnaire; template or form; educational or training materials; or, intranet content designed as a webpage (Microsoft SharePoint, Office 365 Group, or Teams site).

**Open Standard:** Use of a standard developed or adopted by voluntary consensus standards bodies, both domestic and international. [These standards](#) include provisions requiring owners of relevant intellectual property agree to make the intellectual property available on a non-discriminatory, or reasonable royalty basis to all interested parties.

**Reasonable Accommodation.** In general, a reasonable accommodation is any change in the work environment or in the way things are customarily done that enables an individual with a disability (employee or applicant) to enjoy equal employment opportunities, benefits, and privileges.

**Shared Service.** A shared service is a business or mission function that is provided for consumption by multiple organizations within or among federal agencies.

**Software.** Programs, procedures, rules, and related data and documentation that direct the use and operation of GIS or BIS and instruct it to perform a given task or function. Software includes, but is not limited to, applications, non-Web software, and platform software.

**Undue Burden.** Significant difficulties or expenses that may result from full conformance of an ICT, GIS, BIS, or related content item with an Agency directive. In determining whether an action pertaining to data visualization would result in an undue burden, all Agency resources shall be considered as advised by the GIO and/or related communities of practice. Undue burden exemptions require that alternative means of access be provided.

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**Web Application (or Web App):** Software running on a web server which is accessed through Uniform Resource Locator (URL), also termed a web address, with an active internet connection. All web applications are websites.

**Web Area:** A group of related content housed and managed under a single topic, like Lead or Enforcement. Generally, EPA web content is organized by topic, rather than by Program/Office. Each web area has an EIC who is ultimately responsible for the maintenance of the web area's content.

**Website:** A collection of webpages and related content identified by a common domain (or subdomain) name, published on at least one web server, and accessed through a web browser with an active internet connection.

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## 10. WAIVERS

The US EPA is committed to enhancing information access for its stakeholders, including people with disabilities in accordance with Section 508 of the Rehabilitation Act. Though there are no waivers to Section 508 requirements, legal exceptions for ICTs are specified within the EPA Section 508 Exceptions Procedure regarding undue burdens, wherein:

- A. Undue burdens, significant difficulties, or expenses incurred by the Agency. In determining whether an action would result in an undue burden, the Agency shall consider all Agency resources available. If including accessibility features in ICT creates an undue burden, the ICT need not be Section 508 compliant; and
- B. Even when undue burdens are approved, alternative means of access for people with disabilities must be provided (See EPA Undue Burden and Class Undue Burden Procedures).
- C. Fundamental Alteration exceptions apply when a modification to ICT that would change the basic nature or purpose for which the product or its components were designed. Fundamental alteration exemptions require that an alternative means of access be provided.
- D. Section 508 standards do not apply to ICTs, GIS, or BIS operated by agencies as part of a national security system, following in context 40 U.S.C. 11103(a).

The purpose of granting a class undue burden or fundamental alteration exception is to be efficient and effective by reducing the need to document a recurring undue burden repeatedly. The CIO must approve all class exception requests for ICTs. Both developers and administrators outlined in the "Roles and Responsibilities" section are responsible for ensuring specific products maximize accessibility and Section 508 compliance when legal exceptions exist. In context of this procedure, such exceptions can apply to GIS, remote sensing (RS) and imagery services, web applications, cartographic software and shared services, and a broad suite of interactive, data visualization services as well as BIS. Submitting individual exceptions for content, services, and products related to these ICTs place significant burden upon the programmatic offices and creates inefficiencies that may be avoided in authorizing an agency-wide exception. Therefore, all federal ICTs must comply with Section 508 when distributed or deployed unless it meets a Section 508 legal

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exception, imposes an undue burden on the Agency, or requires of fundamental alteration to the ICT.

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**11. MATERIAL SUPERSEDED**

This Procedure supersedes the EPA Memorandum dated 30 March 2018 entitled [Request for Approval of Class Undue Burden for Interactive Geospatial and Data Visualization Software for the Environmental Protection Agency](#).

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**12. CONTACTS**

Please contact the National Geospatial Support Team ([geoservices@epa.gov](mailto:geoservices@epa.gov)). Administrators within the US EPA Office of Mission Support (OMS) Environmental Information (EI) Office of Information Management (OIM) can provide additional information for specific software and services.

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