

Geospatial Data Management Plan

August 2026

HOUSTON-GALVESTON AREA COUNCIL

Data Analytics and Research Department

*Prepared in cooperation with the
Texas Commission on Environmental Quality
under the authorization of the Texas Clean Rivers Act*

Table of Contents

Introduction	1
Geospatial Services.....	1
Data Sharing.....	2
Geospatial Applications	3
Mapping and Cartographic Products	3
System Resources.....	4
System Architecture.....	4
Hardware	5
Software	5
Programming Languages	6
Data.....	6
Personnel	6
Training.....	7
Budget	7
Data Maintenance, Manipulation, and Use	7
Quality Assurance/Quality Control.....	7
Data Limitations	7
Data Development Protocol.....	8
Data Input	8
Data Dictionary.....	8
<i>Figure 2: Elements of CSDGM Standards</i>	9
Data Conversion	9
Coordinate Systems.....	10
Data Validation	10
Data Quality Control.....	10
Equipment Quality Control.....	10
Genealogy	11
Migration/Transfer	11
Data Security & Access.....	11

Archives/Backup	11
Disaster Recovery.....	11
Appendices.....	13
Appendix 1 Data Source Information Sheet.....	13
Appendix 2 Data Log Sheet.....	14
Appendix 3 Hardware	15
FTP Server.....	15
Mapping Application Servers	15
Desktop PC (Primarily used for GIS analysis).....	15
Plotters, Printers and Scanners.....	18
Appendix 4 Software	18
Geographic Information Systems (GIS)	18
Data Management.....	18
Programming.....	18
Office Productivity Software	18
Graphics and Desktop Publishing	18
Operating Systems	19
Appendix 5 Data List	19
H-GAC Spatial Data Warehouse (CE SDE) Dataset	19
H-GAC Spatial Data Warehouse (Global SDE) Dataset	27
C&E Non-Spatial Data	36
Appendix 6 Data Dictionary	37
Appendix 7 H-GAC GIS Data and Mapping Applications	40

Introduction

The Data Management Plan (The Plan) outlines the standard policies and procedures for data management within the Houston-Galveston Area Council (H-GAC) Data Analytics and Research (DAR) Department. The Plan covers the management of both tabular (non-geographic) and spatial (geographic) datasets. Its primary purpose is to ensure the efficient access and maintenance of these datasets within the DAR Geospatial/Geographic Information Systems (GIS) environment.

GIS technology provides a systematic means to capture, manipulate, analyze, store and display spatially referenced data. GIS supports a wide variety of applications ranging from site assessments, environmental planning, urban planning, and spatial analysis to support organizational strategies. In general, GIS supports the overall departmental goals of guiding regional planning, enhancing the quality of the region's natural environment, and public education through outreach programs. The DAR GIS team supports various programs within the H-GAC through data development, spatial analysis, geospatial applications development, cartography in support of departmental goals.

The Plan is considered a dynamic working document which responds to changing technology, funding, staffing, and project requirements. Consequently, the Plan is reviewed annually and amended as needed.

Geospatial Services

The following section explains the geospatial services provided by the H-GAC DAR GIS team as it relates to the sharing of data, development of geospatial applications, cartography, and underlying GIS resources. The DAR GIS team is responsible for the development of data and sharing of many publicly viable datasets, developing geospatial applications, cartography, and coordination of maintenance of underlying geospatial hardware and software for H-GAC.

The DAR GIS team maintains a centralized geospatial warehouses (Global SDE and C&E SDE), cloud-based data sharing platform, an online mapping platform for web-based geospatial applications (Mapping Application), and an FTP download site (Data Clearinghouse). The SDEs utilize ESRI's ArcSDE software running on a Microsoft SQL Server RDBMS. The cloud-based data sharing platform, ArcGIS HUB (H-GAC Regional Data Hub) is used ArcGIS online and delivers data sharing and site creation capabilities. The mapping application uses ESRI's ArcGIS.com & ArcGIS Server platform running on .NET. The Data Clearinghouse is an FTP server (h-gac.sharefile.com) that provides DAR with storage space where it can post publicly available datasets for downloading. The SDEs, Mapping Application, and Data Clearinghouse platforms are installed by the H-GAC Data Services department (Data Services), with Data Services maintaining only the lower-level technology components such as the physical

hardware, software installation, and low-level server and RDBMS functions. All upgrades and maintenance are coordinated by the DAR GIS Manager. All geospatial content stored in the SDEs, the Data Clearinghouse, and Mapping Application, are the responsibility of the DAR GIS staff. However, other departments such as Data Service and Transportation departments maintain some of the other GIS data such as transportation and 911 address and stored in a separate SDE that everybody in H-GAC has access to them. A detailed schematic of the geospatial technical architecture and how the various systems are interconnected can be found in the *System Architecture* section below.

Data Sharing

The Global and C&E SDE serves as the primary internal repository for geospatial data, metadata, and other information relevant to the activities and goals of the DAR department. GIS manger and database administrator within DAR GIS program are provided *Editor* access to data in the SDEs. All other users have only viewer access to data in the SDEs. H-GAC staffs without *Editor* access to the SDE server can access a copy of the geospatial data through a network drives that house imported versions of the original SDE data to develop GIS layers for project specific editing. This system ensures that the original formatting of geospatial data on the SDEs remains unchanged. All user access privileges are assigned by the DAR GIS Manager based upon business needs, GIS skills, and role within the organization. No users outside of the DAR department have editor level access to any GIS data in the SDEs, and in some instances there are datasets that are viewable by only some department GIS users (such as restricted Clean Rivers program data is only viewable to users from Community and Environmental Planning department). Instructions for connecting to the SDEs are provided to authorized users.

Datasets determined to be viable for publication to the public are published to the H-GAC Regional Data Hub (The ArcGIS online Hub site - <https://gishub-h-gac.hub.arcgis.com/>), thereby allowing the general public widespread access to this information via the internet. Members of the public may view metadata and download any of the datasets that are posted to the Hub site. In some instances, these datasets are used in web-based interactive mapping applications and can be accessed online via the Mapping Server's services directory, or accessible via the Data Clearinghouse for downloading. The data sharing for downloading through the Data Clearinghouse is facilitated through H-GAC's ShareFile system. All public DAR GIS data, applications, cartographic products, and the DAR map services directory can be accessed via "Regional Data, Imagery and Research" section under "Programs and Services" of the H-GAC website. A screenshot of the website can be found in Appendix 7.

Geospatial Applications

The DAR department has made a strategic decision to incorporate internet-based mapping applications into its deliverables for many programs and projects. Before, the results of most projects consisted of a large-format map printed on a plotter up to 48"x36" in diameter. This form of cartography, although still useful in many settings, did not allow programs to communicate results to the public or external organizations that had an interest in our analysis results. By taking results from DAR projects and coupling this with base map data and imagery, DAR has been able to share the results of projects to a far greater audience and has created opportunities whereby map layers published on the DAR mapping server can be utilized in other organizations mapping applications.

Currently there are two platforms upon which DAR provides web-based mapping solutions.

The first platform is based on the JavaScript programming technology, and all mapping applications developed using this platform run on various operational systems including Windows, MacOS, ISO, and Android. This platform is intended to provide users with a graphics rich user interface where the map can be navigated, layers turned on/off, and information obtained on each feature. In some instances, features have links to additional resources such as photos of monitoring stations, external websites, and detailed reports. This mapping application allows the users to display its information on different screen-size devices including desktops, laptops, tablets, and mobile phones.

The second platform utilizes the capabilities of the ArcServer and Arcgis.com platform to allow users to directly access map layers published on the mapping server. This method of delivery is called 'streaming' and allows end users access to individual map layers and geoprocessing tools published on the server. Typical users of this method of delivery are other GIS users using ArcGIS Pro/ArcMap GIS, where they can connect directly to our ArcServer platform for read-only access and view our map layers. Other instances where Arcgis.com's users may utilize this method are where they include our map layers in their own mapping applications.

Mapping and Cartographic Products

The DAR department produces a variety of static cartographic maps for the region because of project activities and for general usage. To facilitate the sharing of these maps in an electronic format, DAR has placed maps with their respective topics under "Programs and Services" section of the homepage as shown in Appendix 7.

System Resources

System Architecture

The DAR department uses an integrated architecture to support the development, analysis, and dissemination of spatial information. The diagram below illustrates this system architecture at a high level. The goal of the overall system is to allow for a streamlined workflow to develop/maintain data, optimize the data for use in online applications, and the consumption of applications via multiple platforms.

Currently the DAR GIS platform supports sharing of geospatial data via ArcGIS Hub and ArcServer mapping server platform. These allow end users internally or externally to consume map layers and geoprocessing tools via GIS desktop, mobile, tablet, or interactive applications.

In some instances, applications are configured with public feedback and volunteer GIS workflows that allow the DAR GIS team to obtain information for the public on various geographic features in the region. This public feedback loop allows DAR to investigate feedback and verify its validity prior to incorporating the information into the data warehouse.

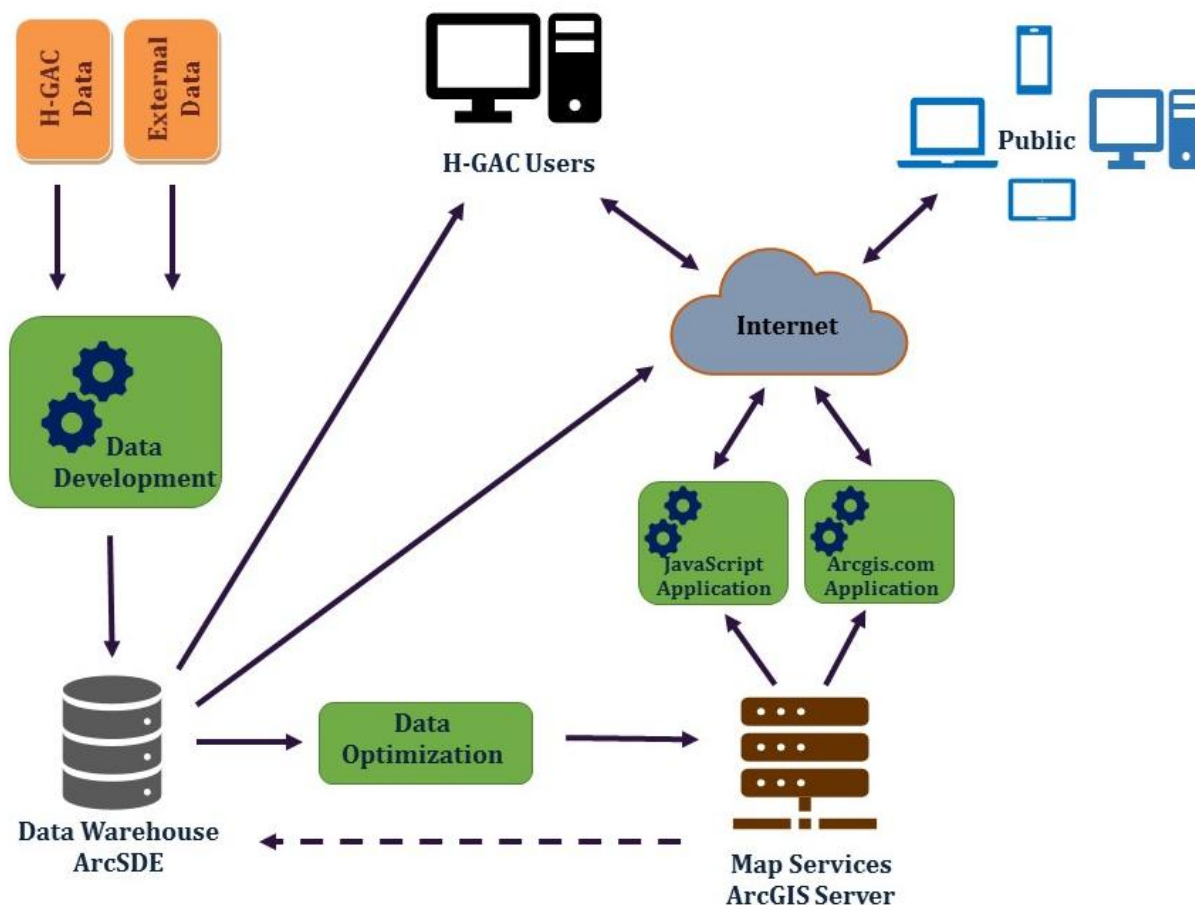


Figure 1: H-GAC Geospatial System Architecture

Hardware

The configuration of the hardware used by staff that performs GIS and data Management work is a distributed network. This network consists of several PC's which are connected to central file servers. The department also uses a central web mapping server for online mapping applications.

A complete listing of departmental hardware is found in Appendix 3.

Software

The DAR department relies upon the H-GAC Data Services department (Data Services) for its end user workstation configuration, installation, and maintenance. Each workstation for users comes with the Microsoft Office software package which includes Outlook (e-mail), Word (word processing), Excel (spreadsheets), PowerPoint (presentations), and in some instances Access (desktop database) should the user require desktop database capabilities. Each workstation is pre-configured and setup to operate within the H-GAC internal network and has access to central servers for file storage.

The DAR GIS staff utilizes ESRI's ArcGIS 10.6.1 and ArcGIS Pro 3.3.5 platforms for all geospatial analysis and mapping needs. In addition, as needed, the staff also utilizes the SAS and google earth engine platforms for further analysis and data development as deemed necessary. SAS is used for statistical analysis and modeling of tabular data. Whereas google earth engine is used for remote sensing data processing and analysis. The ESRI ArcGIS 10.6.1 and ArcGIS Pro 3.3.5 platforms include integrated Python programming capabilities, which allows for the creation of programming scripts or batch programs to improve efficiency and documentation of processes. The Python programming language is an Open-Source platform and is freely distributable.

The software products currently used to accomplish the department's data management objectives are listed in Appendix 4.

Programming Languages

Programming services will be provided on an as needed and resource available basis. All programming efforts will follow a standard procedure from needs assessment, program planning, development and testing, to refinement and documentation. The principal programming languages to be used in task automation and project customization will depend on the nature of the need and the current state of the technology. At this time, all web-based GIS applications are developed using the ESRI ArcGIS Server platform, and user interface components to that platform are developed using the ESRI JavaScript API. Automated data development and analysis workflows utilize the Python programming language, and the SAS programming platform as needed.

Data

Department staff members will be consulted annually to determine priority needs for data management. Based on this consultation, specific data sets will be acquired or further developed for the various program areas represented in the department. The current list of department-specific data sets is shown in Appendix 5.

A separate database lists all datasets regularly obtained from external sources, contact information, as well as the frequency of the datasets' availability, and their cost. This database is developed using Microsoft Excel and is available to the DAR GIS team for tracking when updates to dataset may be available.

Personnel

The Data Management staff will be responsible for the maintenance and development of the SDE, mapping server, geospatial applications, Regional GIS Data Hub page, and Data Clearinghouse. These data management responsibilities cover a wide range from original data creation, acquisition and integration, data archiving and distribution. Additional

responsibilities include enhancing the geographic extent, feature attributes, and metadata of the datasets.

The DAR GIS team is comprised of 30 full-time GIS and data analysis professionals. The DAR GIS team supports all programs across the H-GAC, which include Clean Rivers/Water Quality, Sustainability, Economic Development, Solid Waste, Ped/Bike, Socio-Economic Modeling, Transportation, Public Services, Human Services, and special projects.

H-GAC's Data Services Department plays an indirect role in the implementation and maintenance of The Plan. The Data Services Department is responsible for managing the underlying hardware and network upon which DAR stores GIS data and implements GIS-based applications.

Training

Training for all users of the system is a critical part of The Plan. DAR staff directly responsible for data management will attend conferences, seminars, and software/hardware training courses as needed. H-GAC users of the system will be trained and/or receive technical support by the DAR GIS Manager and other subject matter experts.

Budget

Budgetary requirements to sustain data management efforts will be reviewed annually.

Data Maintenance, Manipulation, and Use

Quality Assurance/Quality Control

QA/QC is designed to standardize screening, documentation, entry, output, analysis, correction, and updating of data in the system. QA/QC will document those responsible for data and system maintenance.

Data Limitations

Prior to the integration of data within the SDEs and posting to the Data Clearinghouse, a review of the data set will be completed to determine predefined data limitations such as missing values, different sampling frequencies, multiple measurements, analytical uncertainty, censored or unavailable data, and duplicated data with existing data sets.

After reviewing the data set, a report will be generated which records any errors detected and any corrections that may be necessary. Data input validation, such as topological validation to ensure spatial relationships between features (e.g., non-overlapping polygons and correct line intersections), and attribute validation to check for out-of-range values or incorrect formats, are also incorporated to ensure the understanding of the limitations of the datasets.

Data Development Protocol

The DAR GIS staff works to update existing dataset, acquire new data, and perform geospatial analysis in support of various H-GAC programs. All new data generated from the result of an analysis is a candidate to be stored not only in the SDE as a new dataset, but also as a layer with a mapping application should the need arise. All data development and analysis are done internally to H-GAC, and at times leverages outside resources such as consultants, other non-profits whom H-GAC is partnering with.

The DAR GIS staff uses a hybrid approach to conducting geospatial analysis. Much of the analysis being performed may need to be re-processed later as new versions of datasets become available, or as inputs to the analysis models are updated themselves. Thus, to minimize the time spent re-running analysis models, the DAR GIS staff utilizes the ESRI ArcGIS platform in conjunction with SAS and Python to develop repeatable and documented workflows. This approach saves more time than interactive methods whereby a user must remember the process to follow, and then execute each step in the analysis independently.

For version control, DAR adopts a systematic approach by appending the year to the end of the layer names. This ensures a clear, chronological record of changes and updates, allowing for easy tracking of different versions of the datasets. For example, a model parcel layer from 2022 would be labeled as Model_Parcels_2022, while a similar dataset from the following year would be named Model_Parcels_2023. This method streamlines the management of datasets across multiple years and ensures consistency throughout the project lifecycle.

Documentation related to data management efforts such as system evolution, structure, and procedures for use will be compiled and made available for the end user. Documentation will be made available online and in hard copy format.

Data Input

Standard conventions for data input will be determined on a per project and/or individual data set basis. To ensure Year 2000 Compliance, all data sets with date/time fields will include a four-digit year (YYYY). Either of the following formats will be used: International Standard Date notation where the date field is represented as MM/DD/YYYY (Month/Day/Year), or an ordinal format where the date field is represented as YYYYDDD.

Data Dictionary

A department-specific list of all data available in the SDE can be found in Appendix 5.

Metadata

Metadata is data about the original source, quality, content, history, condition, and other characteristics of the geospatial data. All GIS datasets generated by H-GAC have been fully documented as per Federal Geographic Data Committee (FGDC) compliant metadata and

follow Content Standards for Digital Geospatial Metadata (CSDGM) for all geospatial data. Similarly, data obtained from outside sources and used by H-GAC will include FGDC-compliant metadata from the source agency. Datasets without a known history and documented quality will be identified as provisional and used only when noted as such. The diagram below illustrates elements of the CSDGM standards. This standard is applied to all Point, Line, Polygon, Raster, and Tabular data that are stored in the SDEs. The DAR GIS data manager and/or point of contact (designee) has the authorized access to edit/change the metadata when a new dataset is created or updated in the SDEs. Metadata for each dataset in the DAR SDE is stored with the datasets and can be viewed by GIS users via their GIS desktop software. Any data provided for public download via the Data Clearinghouse also has a metadata html page that can be viewed via internet browsers.

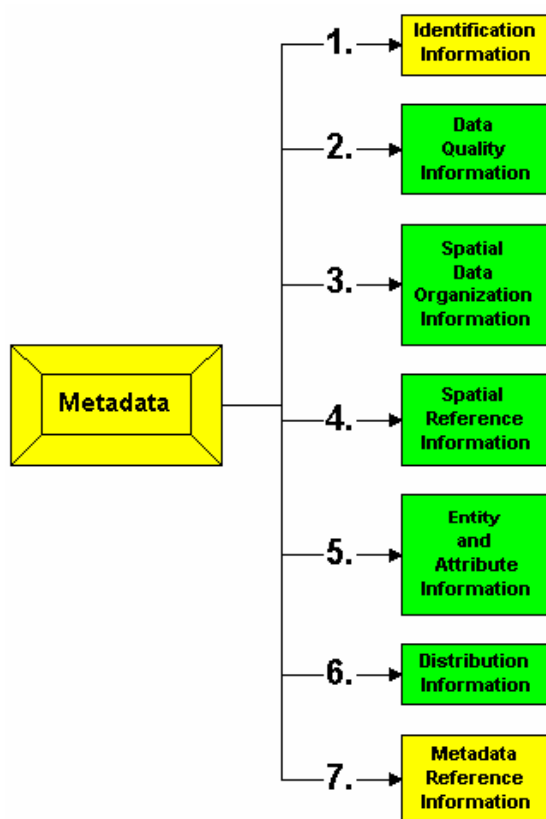


Figure 2: Elements of CSDGM Standards

Data Conversion

Data to be imported into the SDEs from hard copy, digital or by manual data entry, will follow a uniform conversion protocol to comply with the structure of current data sets. The type of data being converted will determine the protocol. All data is stored in ESRI geodatabase format within the SDEs, and when posted to the Data Clearinghouse the data is stored in the

ESRI File Geodatabase file format, unless there is a specific requirement to provide the data in another format such as Shapefile or GIS Coverage.

Coordinate Systems

The Texas Stateplane Coordinate System, North American Datum 1983 (NAD83) will be the standard for geographic data at H-GAC. This coordinate system is based on the Cartesian coordinate system, or rectangular coordinates. When receiving geographic data from other sources the data will be transformed into the Stateplane Coordinate System to ensure compatibility with current data sets.

Ensuring consistency in coordinate systems and projections across layers prevents misalignment issues. When publishing mapping services for use in web-based GIS mapping applications, the Web Mercator Auxiliary Sphere projection is used for all Data Frame projections. However, the underlying GIS data within these mapping services still use the Texas Stateplane Coordinate System, North American Datum 1983 (NAD83) projection.

Data Validation

Data Quality Control

When data is received from any source, documentation will be created to include the source name, date received, format of data and a brief description of the contents. Data will be loaded onto the system from the media received and a review of the data will be made along with any corrections being made to the source documentation. An analysis will be made to determine the means of data entry into the system whether it is only a stand-alone database, a number of linked tables, or a geographic database. The data will be converted to the appropriate format for integration with the current system whether it is a conversion into MS Access, Excel, SAS, or ESRI ArcGIS. The data will be visually examined to determine its validity and accuracy. Error handling techniques like flagging and reporting issues during data processing help alert users to problems requiring manual intervention, while methods such as interpolation can handle missing data. Duplication detection and removal are important to avoid redundancy. In cases where errors are detected, manual correction through editing tools can be applied, while version control is useful for tracking changes and allowing rollbacks to earlier, error-free versions. If the data is invalid it will be corrected (if possible) by incorporating above techniques and the data will be incorporated into the SDEs, and then if applicable, posted to the Data Clearinghouse and used in conjunction with existing data. A QA/QC report of all procedures and a detailed description of how the data was incorporated into the current system (from the date received to the date of integration) will be generated.

Equipment Quality Control

All printers, workstations, and server hardware and operating systems are maintained by the Data Services department, unless otherwise noted in Appendix 3.

Genealogy

Upon receipt of data from outside sources, all data will be screened for integrity and completeness. After the preliminary evaluation of the data, a log of the data source, type and completeness is created and maintained with the associated data. A description of the data and the responsible personnel are documented.

Migration/Transfer

A copy of every DAR generated GIS dataset will be housed in the SDEs which DAR GIS staff manage the contents and structure of datasets. The underlying hardware and network connections for the SDEs are maintained by the Data Services Department. Datasets that are of public interest will be placed in the Data Clearinghouse for public access. Transfer from the SDEs to the Data Clearinghouse will occur on an as needed basis following department QA/QC measures and is handled by the DAR GIS team.

Data Security & Access

Data placed on the Data Clearinghouse will be available to those with Internet browsing and/or FTP capability. Data requests for non-public data from other agencies and the public will be evaluated on an individual basis. When the data requests are received, a preliminary evaluation of the deliverable will be determined and a timeline and cost if applicable will be provided to the requesting agency or individual.

GIS and tabular data will be secure through directory permissions. H-GAC will employ Firewall or Proxy Server Technology to filter and severely restrict access to internal networks and database systems. Virus protection will be implemented to ensure system and data integrity.

Archives/Backup

Each week the DAR GIS team runs a schedule backup program to store a copy of all SDE datasets on a portable hard drive with resides in a secure location within the H-GAC office. In addition, Data Services backs up and archives SDE data and server configuration at regular intervals.

Disaster Recovery

In the event of a disaster, the DAR department will have access to all SDE data which is stored on the portable hard drive. The DAR GIS team will restore or provide needed data to GIS

users from this portable hard drive until such as time that Data Services can restore the SDEs onto either a new server or a temporary server.

Appendices

Appendix 1 Data Source Information Sheet

Data Title:

Source Agency:

Contact:

Title:

Address

Phone:

Data Description:

Data source:

Date created:

Accuracy:

Media:

Data items:

Description of data:

Format (specify what software)

Map:

Tabular:

Image:

Text:

Retrieval Procedure:

Command(s):

Appendix 2 Data Log Sheet

Date received: _____

Report Prepared by: _____

Source Name and Phone: _____

Format: _____

Media: _____

Check the following steps to determine the validity of the data:

1. What is the extent of the geographic area? _____

2. Structure (Circle One) Vector Raster

3. Scale? _____

4. Projection and Datum? _____

1. Do any of the key fields have missing values? If so which parameters have missing values? Yes ___ No ___

2. Any known duplicate records? Yes ___ No ___

Appendix 3 Hardware

FTP Server

h-gac.sharefile.com

Mapping Application Servers

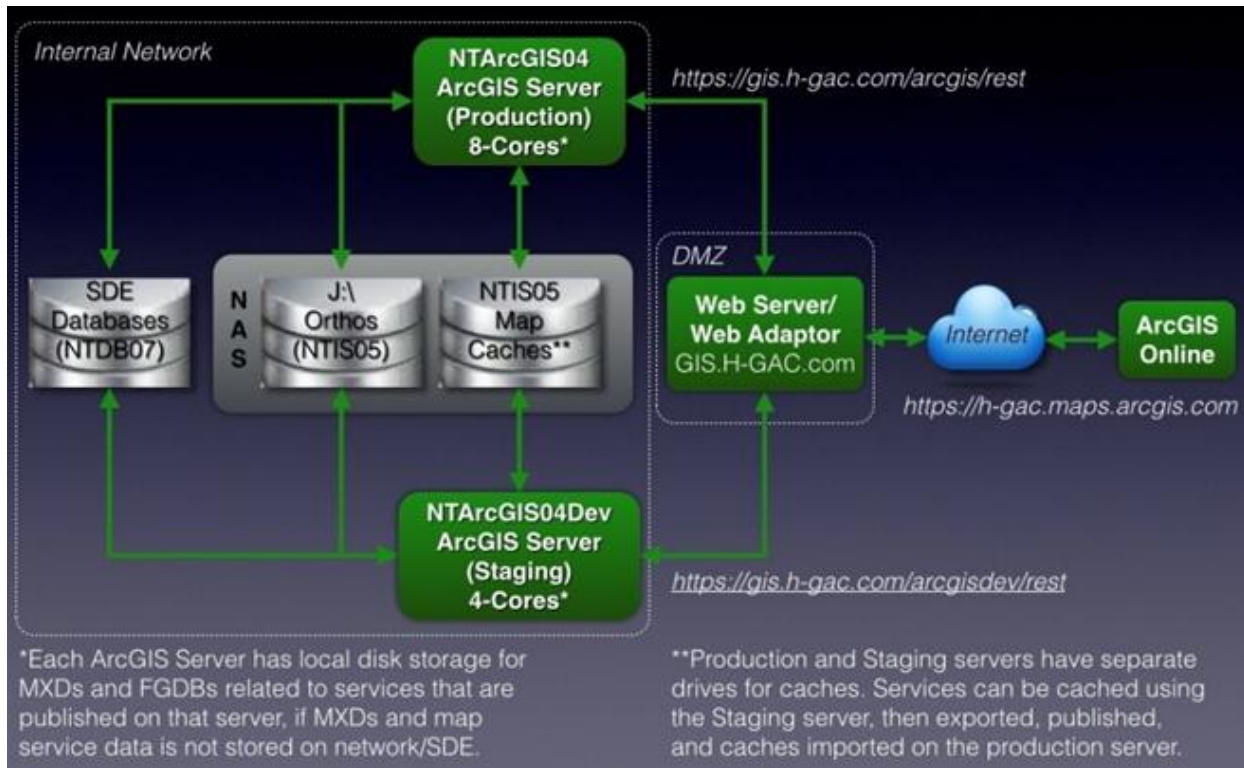


Figure 3: H-GAC ArcGIS Enterprise Architecture

Desktop PC (Primarily used for GIS analysis)

CPU Name	Computer Memory	Computer Model	Computer O/S Name	Computer Manufacturer
Intel Xeon CPU E3-1245 v6 @ 3.70GHz	16 GB	Precision Tower 3620	Microsoft Windows 10 Pro for Workstations	Dell Inc.
Intel Xeon CPU E3-1245 v6 @ 3.70GHz	64 GB	Precision Tower 3620	Microsoft Windows 10 Pro for Workstations	Dell Inc.
Intel Core i5-8500 CPU @ 3.00GHz	8 GB	OptiPlex 7060	Microsoft Windows 10 Pro N	Dell Inc.

Intel Xeon E-2186G CPU @ 3.80GHz	16 GB	Precision 3630 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Core i7-8700 CPU @ 3.20GHz	32 GB	OptiPlex 7060	Microsoft Windows 10 Pro	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	16 GB	OptiPlex 5070	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	16 GB	OptiPlex 5070	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	16 GB	OptiPlex 5070	Microsoft Windows 11 Pro	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	8 GB	OptiPlex 5070	Microsoft Windows 10 Pro	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	32 GB	OptiPlex 7070	Microsoft Windows 11 Pro	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	64 GB	OptiPlex 7070	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	32 GB	OptiPlex 7070	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	32 GB	OptiPlex 7070	Microsoft Windows 11 Pro	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	32 GB	OptiPlex 7070	Microsoft Windows 11 Enterprise	Dell Inc.
12th Gen Intel Core i7-12700KF	64 GB	System Product Name	Microsoft Windows 11 Pro	ASUS
AMD Ryzen 9 7950X 16-Core Processor	128 GB	System Product Name	Microsoft Windows 11 Enterprise	ASUS
13th Gen Intel Core i9-13900KF	128 GB	System Product Name	Microsoft Windows 11 Enterprise	ASUS
13th Gen Intel Core i9-13900KF	128 GB	System Product Name	Microsoft Windows 11 Pro	ASUS
12th Gen Intel Core i7-12700	32 GB	Precision 3660	Microsoft Windows 11 Enterprise	Dell Inc.
13th Gen Intel Core i9-13900KF	128 GB	System Product Name	Microsoft Windows 11 Pro	ASUS
13th Gen Intel Core i9-13900KF	128 GB	System Product Name	Microsoft Windows 11 Pro	ASUS

Intel Core i9-14900KF	128 GB	System Product Name	Microsoft Windows 11 Pro	ASUS
Intel Core i9-14900KF	128 GB	System Product Name	Microsoft Windows 11 Enterprise	ASUS
Intel Core i9-14900K	128 GB	MS-7E06	Microsoft Windows 11 Pro	Micro-Star International Co., Ltd.
Intel Xeon w3-2423	256 GB	Precision 5860 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Xeon w3-2423	64 GB	Precision 5860 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Core Ultra 9 285	32 GB	Dell Pro Max Tower T2 FCT2250	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Core Ultra 9 285	256 GB	30HTS0QM0 0	Microsoft Windows 11 Pro	LENOVO
Intel Xeon Silver 4114 CPU @ 2.20GHz	32 GB	Precision 7820 Tower	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Xeon Silver 4114 CPU @ 2.20GHz	16 GB	Precision 7820 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Xeon Silver 4114 CPU @ 2.20GHz	32 GB	Precision 7820 Tower	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Xeon Silver 4114 CPU @ 2.20GHz	16 GB	Precision 7820 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Xeon E-2186G CPU @ 3.80GHz	16 GB	Precision 3630 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	16 GB	OptiPlex 5070	Microsoft Windows 11 Enterprise	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	16 GB	OptiPlex 5070	Microsoft Windows 10 Pro	Dell Inc.
Intel Core i7-9700 CPU @ 3.00GHz	16 GB	OptiPlex 5070	Microsoft Windows 11 Pro	Dell Inc.
Intel Xeon Silver 4216 CPU @ 2.10GHz	32 GB	Precision 7820 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.

Intel Xeon Silver 4216 CPU @ 2.10GHz	64 GB	Precision 7820 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Xeon Silver 4216 CPU @ 2.10GHz	64 GB	Precision 7820 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.
Intel Xeon Silver 4216 CPU @ 2.10GHz	32 GB	Precision 7820 Tower	Microsoft Windows 11 Pro for Workstations	Dell Inc.

Plotters, Printers and Scanners

HP Designjet T920 Postscript Plotter

- This plotter is used by all H-GAC staff for large format printing of maps and schematics.

Appendix 4 Software

Geographic Information Systems (GIS)

ESRI ArcGIS (ver 10.6.1) – Computer mapping and database manipulation capable of using ArcView, ArcInfo, and ArcEditor licenses as needed.

ArcGIS Pro 3.0.3 – Geospatial data analysis and visualization

ESRI ArcGIS Server (ver 10.2, SP3) – Internet Mapping Application Server.

ESRI ArcSDE (ver 10.2, SP1) – Spatial data warehouse.

Google Earth Engine – Google Earth

Data Management

Microsoft Access (365) - Relational Database.

SQL Server (2012) - Relational Database.

Programming

Microsoft Visual Studio – Web Mapping Development Tool.

Web AppBuilder for ArcGIS (ver 1.8) – Web-based GIS application development tool

SAS (ver 9.4) – Data development and statistical analytics.

Python 3.1.2 - Python Programming language for data analysis

Office Productivity Software

Microsoft Office 365 - Word, Excel, Access, PowerPoint, publisher, InfoPath and Outlook.

Graphics and Desktop Publishing

Adobe Illustrator (ver 8.01) – Graphics

Adobe Photoshop (ver 5.0) – Graphics

Camtasia Studio (ver 7.0) – Screen capture and video tutorial production

Operating Systems

Windows 11 Enterprise- PC working environment/Operating System

Windows 2012 & 2016 - Server Operating Systems

Appendix 5 Data ListH-GAC Spatial Data Warehouse (CE SDE) Dataset

<u>Layer Name</u>	<u>Geometry Type</u>
<u>CE.CE ADMIN.HGAC 8 County Water</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Closed Landfill Inventory</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC CRP Watersheds</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Galveston Bay Estuary Program Watersheds</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Watershed Signs</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Basins</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Watersheds</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Watershed Insets</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County CRP Lakes</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County CRP Streams</u>	<u>Polyline</u>
<u>CE.CE ADMIN.HGAC 15 County Aquifer Recharge Zones</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Harris County Zones 58</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Recycle Centers</u>	<u>Point</u>
<u>CE.CE ADMIN.Harris County FCD Watersheds</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Harris County FCD Sub Watersheds</u>	<u>Polygon</u>
<u>CE.CE ADMIN.CRP Project Areas</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County CRP Stream End Points</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Grocery Stores</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Brownfield Sites</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Superfund NPL Sites</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Superfund NPL Sites Pts</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Libraries</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Airports</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Parks</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC Other CRP Monitoring Stations</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Plats</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Landfill Areas</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Landfill Areas Historical</u>	<u>Polygon</u>

<u>CE.CE ADMIN.HGAC 13 County Landfills</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Landfills Historical</u>	<u>Point</u>
<u>CE.CE ADMIN.LivableCenters</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County MPC</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC Streams Segments 2016</u>	<u>Polyline</u>
<u>CE.CE ADMIN.HGAC Lakes Segments 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC Streams AUs 2016</u>	<u>Polyline</u>
<u>CE.CE ADMIN.HGAC Lakes AUs 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC Region WWTF Outfalls FY17</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Water Detailed 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties TX Veterans 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs Vulnerable 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Tracts 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs Veterans 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISDs 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Zips 2016</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2016</u>	<u>Point</u>
<u>CE.CE ADMIN.Zips 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Tracts 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2017</u>	<u>Point</u>
<u>CE.CE ADMIN.Congressional Districts 115th ACS 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISDs 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Congressional Districts 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs Vulnerable 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Model Buildings 2017</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County FoodWaste Composters</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County NHDPlusV2 Catchment Boundary</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Model Parcels 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Census Tracts 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Census Places pt 2015</u>	<u>Point</u>
<u>CE.CE ADMIN.Counties 2015</u>	<u>Polygon</u>

<u>CE.CE ADMIN.BGs Vulnerable 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Census Places 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Zips 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2014</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2014</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Census Places 2014</u>	<u>Point</u>
<u>CE.CE ADMIN.Zips 2014</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Census Tracts 2014</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Recycling and HHW Centers</u>	<u>Point</u>
<u>CE.CE ADMIN.Landfill Areas</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Closed Landfill Inventory</u>	<u>Point</u>
<u>CE.CE ADMIN.Landfills</u>	<u>Point</u>
<u>CE.CE ADMIN.Recycling Centers</u>	<u>Point</u>
<u>CE.CE ADMIN.Model Buildings 2017 events</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Service Area Boundaries 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Service Area Boundaries Domestic 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.MS4 Permitted Areas 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Service Area Boundaries 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Service Area Boundaries 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Service Area Boundaries 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Service Area Boundaries</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Service Area Boundaries 2025</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Service Area Boundaries 2019</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Service Area Boundaries 2013</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Service Area Boundaries 2014</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Service Area Boundaries 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Service Area Boundaries 2017</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Service Area Boundaries 2023</u>	<u>Polygon</u>

<u>CE.CE ADMIN.HGAC 14 County OSSF Unpermitted 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County OSSF Permits 2024</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County OSSF Permits 2022</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County OSSF Permits 2025</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County OSSF Permits 2023</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 14 County OSSF Unpermitted 2026</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 14 County OSSF Unpermitted 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County OSSF Permits 2018</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 14 County OSSF Unpermitted 2025</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County NCTCOG OSSF Permits 2025</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 14 County OSSF Unpermitted 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County OSSF Permits 2020</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County OSSF Permits 2026</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County OSSF Permits 2017</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County OSSF Permits</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County OSSF Permits 2019</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County OSSF Permits 2021</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Domestic 2025</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Domestic 2022</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2021</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfall Domestic 2019</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County Wastewater Outfall Domestic 2018</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Domestic 2024</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2023</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2020</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Domestic 2021</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2017</u>	<u>Point</u>

<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Domestic 2023</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Historical</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2024</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Pre2017</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2025</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2022</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls 2019</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County Wastewater Outfalls Domestic 2020</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County NHDPlus Streams</u>	<u>Polyline</u>
<u>CE.CE ADMIN.Congressional Districts 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Zips 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs Vulnerable 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2018</u>	<u>Point</u>
<u>CE.CE ADMIN.TexasStateSenate 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Tracts 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateHouse 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISD 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County MS Building Footprints 2015</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Transmission Lines FEMA</u>	<u>Polyline</u>
<u>CE.CE ADMIN.HGAC 15 County CRP Monitoring Stations 2021</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2008</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations Historical</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2017</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2011</u>	<u>Point</u>

<u>CE.CE ADMIN.HGAC 15 County CRP Monitoring Stations 2020</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2013</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2012</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2015</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2016</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2014</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 15 County CRP Monitoring Stations 2019</u>	<u>Point</u>
<u>CE.CE ADMIN.HGAC 13 County CRP Monitoring Stations 2010</u>	<u>Point</u>
<u>CE.CE ADMIN.Model Parcels 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Model Buildings 2020</u>	<u>Point</u>
<u>CE.CE ADMIN.LivableCenters pt 2021</u>	<u>Point</u>
<u>CE.CE ADMIN.BGs Vulnerable 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2020</u>	<u>Point</u>
<u>CE.CE ADMIN.Tracts 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateHouse 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateSenate 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Congressional Districts 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Zips 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISDs 2020</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Soils 2018</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Soils 2012</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 15 County Soils 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Soils 2010</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Model Buildings 2022</u>	<u>Point</u>
<u>CE.CE ADMIN.Model Parcels 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.LivableCenters Recommendations</u>	<u>Polyline</u>
<u>CE.CE ADMIN.Critical Facilities 2022</u>	<u>Point</u>
<u>CE.CE ADMIN.Counties 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Congressional Districts 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISDs 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2021</u>	<u>Point</u>

<u>CE.CE ADMIN.BGs Vulnerable 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateSenate 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Zips 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateHouse 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Tracts 2021</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Region Critical Urban Freight Corridors 2023</u>	<u>Polyline</u>
<u>CE.CE ADMIN.Model Buildings 2023</u>	<u>Point</u>
<u>CE.CE ADMIN.Model Parcels 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Parks 2024 poly</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Texas Stream Team Monitoring Sites 2018</u>	<u>Point</u>
<u>CE.CE ADMIN.Texas Stream Team Monitoring Sites 2020</u>	<u>Point</u>
<u>CE.CE ADMIN.Texas Stream Team Monitoring Sites 2022</u>	<u>Point</u>
<u>CE.CE ADMIN.Texas Stream Team Monitoring Sites 2016</u>	<u>Point</u>
<u>CE.CE ADMIN.Texas Stream Team Monitoring Sites 2024</u>	<u>Point</u>
<u>CE.CE ADMIN.CRP Monitoring Stations WRIM</u>	<u>Point</u>
<u>CE.CE ADMIN.Model Parcels 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Model Buildings 2024</u>	<u>Point</u>
<u>CE.CE ADMIN.LivableCenters 2025</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Congressional Districts 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Zips 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateHouse 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs Vulnerable 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISDs 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Tracts 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2022</u>	<u>Point</u>
<u>CE.CE ADMIN.TexasStateSenate 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2022</u>	<u>Polygon</u>
<u>CE.CE ADMIN.LivableCenters Recommendations 2025</u>	<u>Polyline</u>
<u>CE.CE ADMIN.BGs 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISDs 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Tracts 2023</u>	<u>Polygon</u>

<u>CE.CE ADMIN.TexasStateSenate 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs Vulnerable 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Congressional Districts 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateHouse 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2023</u>	<u>Point</u>
<u>CE.CE ADMIN.Zips 2023</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TCEQ AU Line IR Impairments 2024</u>	<u>Polyline</u>
<u>CE.CE ADMIN.TCEQ AU Poly IR Impairments 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateSenate 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places poly 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Congressional Districts 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.ISDs 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Zips 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TexasStateHouse 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Places pt 2024</u>	<u>Point</u>
<u>CE.CE ADMIN.Tracts 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.Counties 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.BGs Vulnerable 2024</u>	<u>Polygon</u>
<u>CE.CE ADMIN.WRIM Stations</u>	<u>Point</u>
<u>CE.CE ADMIN.Watershed Based Plans</u>	<u>Polygon</u>
<u>CE.CE ADMIN.CRP Watershed Segments WRIM</u>	<u>Polygon</u>
<u>CE.CE ADMIN.TMDL Watersheds</u>	<u>Polygon</u>
<u>CE.CE ADMIN.HGAC 13 County Airports ParcelIDs RC</u>	<u>Enterprise Geodatabase Relationship Class</u>
<u>CE.CE ADMIN.HGAC 13 County Parks Features RC</u>	<u>Enterprise Geodatabase Relationship Class</u>
<u>CE.CE ADMIN.HGAC 13 County Parks Parcels RC</u>	<u>Enterprise Geodatabase Relationship Class</u>
<u>CE.CE ADMIN.HGAC 13 County Parks Awards RC</u>	<u>Enterprise Geodatabase Relationship Class</u>
<u>CE.CE ADMIN.HGAC 13 County Airports ParcelIDs</u>	<u>Enterprise Geodatabase Table</u>
<u>CE.CE ADMIN.HGAC 13 County Parks Features</u>	<u>Enterprise Geodatabase Table</u>
<u>CE.CE ADMIN.HGAC 13 County Parks Parcels</u>	<u>Enterprise Geodatabase Table</u>
<u>CE.CE ADMIN.HGAC 13 County Parks Awards</u>	<u>Enterprise Geodatabase Table</u>
<u>CE.CE ADMIN.LivableCenters Recommendations 2025 table</u>	<u>Enterprise Geodatabase Table</u>

H-GAC Spatial Data Warehouse (Global SDE) Dataset

<u>Layer Name</u>	<u>Geometry Type</u>
<u>Global.GLOBAL ADMIN.HGAC Ex Offender Resources</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC CoH Council Districts UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC School Districts UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Gulf Coast ETPS</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Career Offices</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Workforce Solutions Offices</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Commissioner Precincts UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Regional Employers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC ZIP Codes UI Claims TWC</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Community Nursing Homes</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC UI Claimants</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Hire Red White and You Employers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.CoH Public Libraries</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC ZIP Codes UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Demo Jobs</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC ZIP Codes Area NAICS Hexagon</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC AEL Providers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC State House Districts UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Re Entry Resources</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Counties UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC ZIP Codes Jobs</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC US House Districts UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC ZIP Codes Demo</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Workforce Centers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Workforce DARS</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Counties UI Claims TWC</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Workforce Solutions VR Offices</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC State Senate Districts UI Claims</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Parole Offices</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Pre 2021</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses 2022</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Consumers 2019</u>	<u>Point</u>

<u>Global.GLOBAL ADMIN.DataAxle Businesses 2023</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Consumers 2022</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses 2019</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses 2020</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses 2024</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Suspect 2021</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses 2025</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Consumers 2020</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Nix 2025</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Suspect 2022</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Pre 2025</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Suspect 2018</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Nix 2023</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses 2014</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Consumers 2025</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Nix 2020</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Consumers 2024</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Pre 2024</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Nix 2016</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Pre 2026</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Suspect 2015</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Nix 2019</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Nix 2017</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Suspect 2020</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Nix 2022</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses 2017</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Consumers 2018</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Consumers 2021</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Consumers 2015</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Consumers 2016</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Pre 2020</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Suspect 2019</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Consumers 2023</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses 2026</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Suspect 2014</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Nix 2026</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Consumers 2014</u>	<u>Point</u>

<u>Global.GLOBAL ADMIN.DataAxle Businesses Suspect 2023</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Nix 2018</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Nix 2015</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Consumers 2026</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses 2016</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses 2018</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Pre 2019</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Suspect 2017</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Pre 2023</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses 2015</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Consumers 2017</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Suspect 2016</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Nix 2021</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.DataAxle Businesses Pre 2022</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Pre 2018</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC BlockGroups 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Urban Areas 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Places 2020 Pts</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Zip Codes 2002</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Zip Codes 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Zip Codes 2005</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Tracts 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Tracts 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Zip Codes 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Blocks 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas BlockGroups 1990</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas BlockGroups 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Tracts 1990</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Urban Areas 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Blocks 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC BlockGroups 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Urban Areas 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Metropolitan Statistical Area</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Urban Areas 1990</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Places 2010 Pts</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Tracts 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Zip Codes 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Places 2010</u>	<u>Polygon</u>

<u>Global.GLOBAL ADMIN.Texas Tracts 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC BlockGroups 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC RAZ</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Tracts 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Urban Areas 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Urban Areas 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Places 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Places 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Tracts 1970</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Places 2000 Pts</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Texas Blocks 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Zip Codes 2005</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Tracts 1990</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas BlockGroups 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas BlockGroups 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Tracts 1980</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Blocks 2000</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Tracts 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC BlockGroups 1990</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Blocks 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Metro MTA Tax Area</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Brazos Transit District Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Conroe Transit Bus Stops</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Fort Bend Transit Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Harris County Transit Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Regional Transit Agencies</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Metro BRT Lines</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Island Transit Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Island Transit Bus Stops</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Metro LRT Stations</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Transit Stops</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Brazos Transit District Park and Rides</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Connect Transit Bus Stops</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Colorado Valley Transit Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.The Woodlands Township Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Metro Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Connect Transit Bus Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Conroe Transit Bus Routes</u>	<u>Polyline</u>

<u>Global.GLOBAL ADMIN.Metro Bus Stops</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Metro Park and Rides</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Metro Transit Centers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Metro LRT Lines</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Galveston County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Jefferson County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Harris County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Montgomery County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 13C</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Fort Bend County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Washington County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2014 Fort Bend County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Waller County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Austin County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Walker County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Brazoria County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Matagorda County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Liberty County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Grimes County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.LiDAR Building Footprints 2018 Chambers County</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Counties Political</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Political Boundary 15C</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Political</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Coastline 15C</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Voting Tabulation Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas State Senate Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas US House Districts</u>	<u>Polygon</u>

<u>Global.GLOBAL ADMIN.HGAC Tax Increment Reinvestment Zones</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC City Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Political Boundary</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.US State Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Area Codes</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.GCR911ECD Counties Political</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas State House Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Election Precincts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Coastline Boundary</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC City Ordinance Areas</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC State Senate Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC City ETJ Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.GCR911ECD Counties Coastline</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Coastline Boundary 15C</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC City Council District Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Political 15C</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Political Boundary</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Coastline Boundary</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Election Precincts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Counties Coastline</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas COG Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.World Country Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Counties Coastline</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC State House Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC US House Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Commissioner Precincts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Buy PO EndUsers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Buy Active EndUsers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Freshwater Saltwater Boundary</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC HUC 06 Basins</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas HUC 10 Watersheds</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Galveston Bay Surge MOM</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Major Rivers</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Reserviors</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Major Rivers 15C</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Major Lakes and Reservoirs</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Levees</u>	<u>Polyline</u>

<u>Global.GLOBAL ADMIN.Matagorda Bay Surge MOM</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Dams</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Floodplains DFIRM Q3 2010</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Major Aquifers</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas HUC 02 Regions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Gulf Of Mexico</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Water</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Floodplains NFHL 2020</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Water Detailed</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Major Rivers</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Texas Coastal Bathymetry Contour</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Texas Coastal Vignette</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC HUC 10 Watersheds</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC HUC 02 Regions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas HUC 04 Subregions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Floodplains NFHL 2015</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas HUC 08 Subbasins</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC HUC 08 Subbasins</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC HUC 12 Subwatersheds</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Minor Aquifers</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas HUC 06 Basins</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Coastal Bathymetry</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Texas HUC 12 Subwatersheds</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Water 15C</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Sea Level Rise</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC HUC 04 Subregions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Strava Bike Usage 2019</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Strava Bike Usage 2020</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Strava Bike Usage 2017</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Strava Bike Usage 2018</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Wastewater Outfalls</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Texas Surface Water Rights Divers ion</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Texas National Forests</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas TCEQ Regions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas TFT Adoption Sites</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Texas Natural Regions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Wetlands</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Eco Regions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas National Parks</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC NWR Areas</u>	<u>Polygon</u>

<u>Global.GLOBAL ADMIN.Texas Groundwater Conservation Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Parks</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Beach Access Points</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC 15 Minute Quad</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC LiDAR Grid 2018 HCFC D Extent</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC 1 Degree Quad</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Control Stations</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC 7point5 Minute Quad</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Contours 2 Feet</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC LiDAR Breakline</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC LiDAR Grid 2014</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC LiDAR Grid 2018 Full Extent</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC LiDAR Grid 2008</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC DOQQ Grid</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC LiDAR Contours 1 Foot</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Contours 5 Feet</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Lambert Grid</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC LiDAR Spot Elevation</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Lambert Grid Product</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Seaports</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Airport Runways</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Ship Channel</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Texas Highways</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Highway Milemarkers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Aripport Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Navigable Waterway Lines</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Southeast Harris Proposed Ped Bike Facilities</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC MSWF Managed Lanes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC State Highways</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Southeast Harris Transit Feasibility Study Hexagons</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC TAZ 5217</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC FM Roads</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Art of Transportation</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Airport System</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Major Roads</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Bike Ped Network 8C</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Sidewalks Final</u>	<u>Polyline</u>

<u>Global.GLOBAL ADMIN.HGAC Raillines Detailed</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Regional tma bike network</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Sidewalks Preliminary</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC MSWF Traffic Management Strategies</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Raillines</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Southeast Harris Intersection Profiles</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Southeast Harris Corridor Profiles</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC TAZ 2954</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Flex Zones</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Major Roads 15C</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Ike Track</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Dolly Track</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.Texas Hurricane Evacuation Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Ike Storm Surge Model</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Dolly Observations</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Evacuation Routes</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Evacuation Zip Codes</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Ike High Water Measurements</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Hurricane Ike Observations</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Historical Major Tropical Storm Tracks</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC School Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Education Service Regions</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Eligible Training Providers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Texas School Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Schools</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Higher Education Boundaries</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.Texas Senate Board of Education Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC Adult Education Literacy Providers</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.HGAC Learning Centers</u>	<u>Point</u>

<u>Global.GLOBAL ADMIN.HGAC School District Board Districts</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.RGMP RTP2045 Intersection Interchange Projects</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.RGMP RTP2045 Roadway Projects</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.RGMP HGAC Freight Network</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC StarMap Sidewalks</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC StarMap Centerlines</u>	<u>Polyline</u>
<u>Global.GLOBAL ADMIN.HGAC StarMap ZipCodes</u>	<u>Polygon</u>
<u>Global.GLOBAL ADMIN.HGAC StarMap Addresses</u>	<u>Point</u>
<u>Global.GLOBAL ADMIN.Island Transit Bus Stops 1 ATTA CHREL</u>	<u>Enterprise Geodatabase Relationship Class</u>
<u>Global.GLOBAL ADMIN.InfoGroup Businesses Nix 2014</u>	<u>Enterprise Geodatabase Table</u>
<u>Global.GLOBAL ADMIN.Island Transit Bus Stops 1 ATTA CH</u>	<u>Enterprise Geodatabase Table</u>

C&E Non-Spatial Data

Ambient Surface Water Quality Monitoring

Wastewater Self-reporting Data

Parcel-Based Land Use, Attributes, and Valuation (9 counties)

Census Data

Appendix 6 Data Dictionary

Data Dictionary
Houston-Galveston Area Council
Community and Environmental Planning Department

General Information		
Thematic Layer Name		
Feature Class		
Topology		
Table Name		
Data Source		
Report Prepared by		
Phone	Fax	E-Mail

Attribute Table				
Variable	Begin Column	Item Name	Alternate Name	Item Definition

Data History	
Source Agency	
Originating Date	

Originating Scale

Status Information
Percentage Complete
Planned Completion Date
Geographic Extent
Planned Enhancements
Known problems or limitations

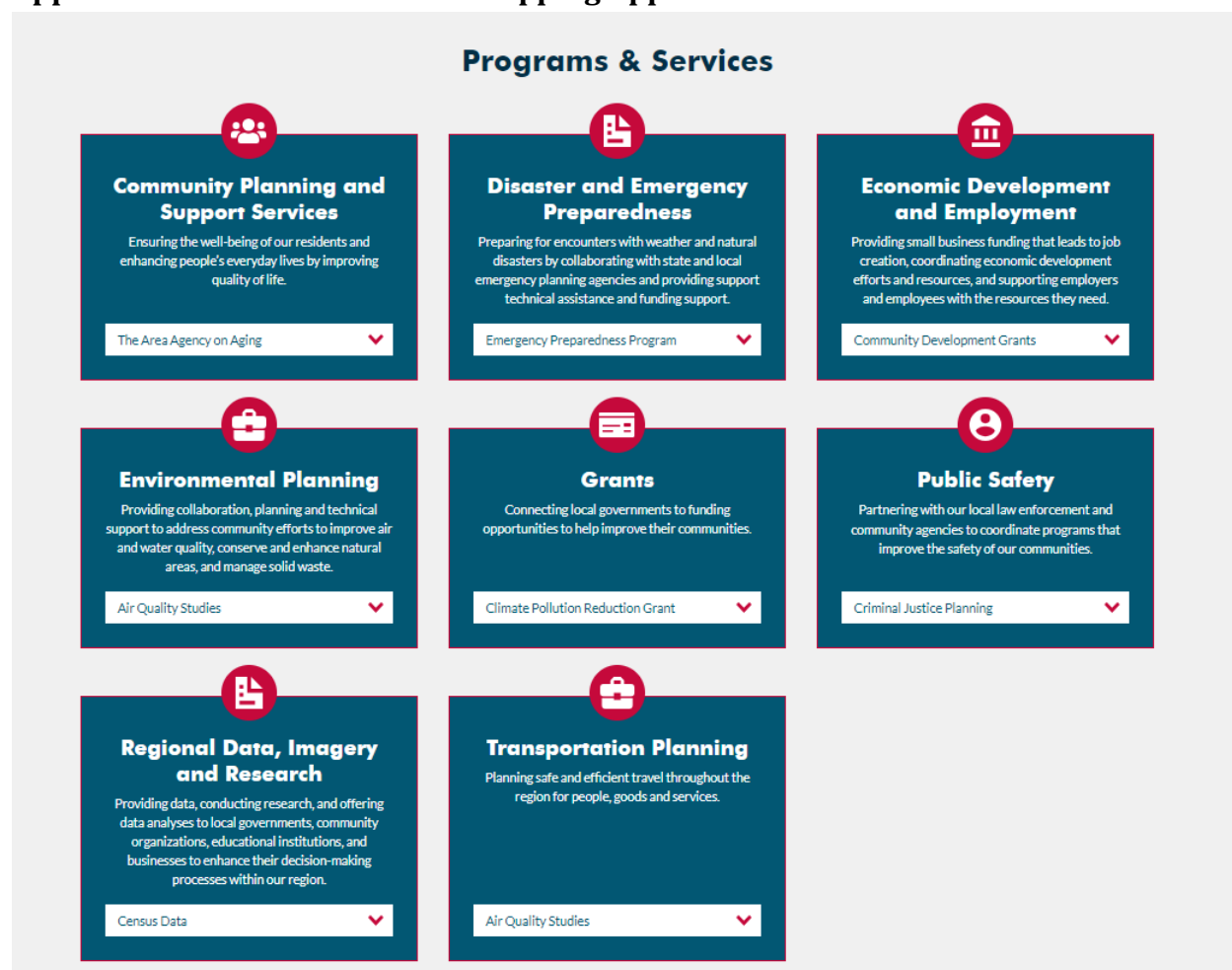
Maintenance Information
Maintaining Office/Division/Section
Contact Name
Contact Telephone Number
Type of updates performed
Frequency of Updates

Data Format Information
Data Format
Software/Version
Number of features/records
Total File Size

Projection
Geographic Projection:
Spheroid:
Zone:
Datum:
Units:
Fips Zone:
Quadrant:
X Shift:
Y Shift:
1st Standard Parallel:
2nd Standard Parallel:
Central Meridian:
Lat. of Projection Origin:
False Easting:
False Northing:

Additional Documentation
Quality Assurance Quality Control
Attribute Reports Available
Additional Documentation Available

Appendix 7 H-GAC GIS Data and Mapping Applications



Regional Data, Imagery and Research

Providing data, conducting research, and offering data analyses to local governments, community organizations, educational institutions, and businesses to enhance their decision-making processes within our region.

Census Data

- Census Data
- H-GAC Imagery and LiDAR/Elevation Data
- H-GAC's Geographic Data Workgroup
- Interactive Web Applications
- Land Use & Land Cover Data
- Regional GIS Data Hub
- Regional Growth Forecast
- Regional Information Security Workgroup

Transportation Planning

Planning safe and efficient travel throughout the region for people, goods and services.

Air Quality Studies

How to Contact Us