Geospatial Data Management Plan

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HOUSTON-GALVESTON AREA COUNCIL

Community & Environmental Planning Department

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Texas Commission on Environmental Quality

under the authorization of the Texas Clean Rivers Act

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Introduction

The Data Management Plan (The Plan) outlines the standard policies and procedures for data management within the Community and Environmental Planning (C&E) 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 C&E 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 C&E GIS team supports various programs within the C&E department 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 on an annual basis and amended as necessary.

Geospatial Services

The following section explains the geospatial services provided by the H-GAC C&E GIS team as it relates to the sharing of data, development of geospatial applications, cartography, and underlying GIS resources. The C&E 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 C&E.

The C&E GIS team maintains a centralized geospatial warehouse (C&E SDE), an online mapping platform for web-based geospatial applications (Mapping Application), and an FTP download site (Data Clearinghouse). The C&E SDE utilizes ESRI's ArcSDE software running on a Microsoft SQL Server RDBMS. 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 C&E with storage space where it can post publicly available datasets for downloading. The C&E SDE, 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 C&E GIS Manager. All geospatial content stored in the C&E SDE, the Data Clearinghouse, and Mapping Application, are the responsibility of the C&E GIS staff, which resides within the C&E Socio-Economic Modeling program. However,

Data Service department maintains some of the other GIS data such as transportation, 911 address, and workforce solutions, 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 C&E SDE serves as the primary internal repository for geospatial data, metadata, and other information relevant to the activities and goals of the C&E department. All GIS users within C&E Socio-Economic Modeling program and users from other H-GAC departments are provided *Editor* access to data in the C&E SDE. All other users have only viewer access to data in the C&E SDE. H-GAC C&E staffs without *Editor* access to the C&E SDE server can access a copy of the geospatial data through a separate server that houses 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 C&E SDE remains unchanged. All user access privileges are assigned by the C&E GIS Manager based upon business needs, GIS skills, and role within the organization. No users outside of the C&E department have editor level access to any GIS data in the C&E SDE, and in some instances there are datasets that are viewable by only C&E GIS users. Instructions for connecting to the C&E SDE are provided to authorized users.

Datasets determined to be viable for publication to the public are exported to the Data Clearinghouse, 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 Data Clearinghouse. 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 through downloading is facilitated through H-GAC's Sharefile system. All public C&E GIS data, applications, cartographic products, and the C&E map services directory can be accessed via "GIS, Imagery, & Online Mapping Tools" section of the H-GAC website. A screen shot of the website can be found in Appendix 7.

Geospatial Applications

The C&E 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 C&E projects and coupling this with base map data and imagery, C&E has been able to share the results of projects to a far greater audience and

has created opportunities whereby map layers published on the C&E mapping server can be utilized in other organizations mapping applications.

Currently there are two platforms upon which C&E 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 whereby 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 technology allows the users to display its information on different screen-size devices including desktop, laptop, tablet, and mobile phone.

The second platform utilizes the capabilities of the ArcServer/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 ArcMap GIS, whereby they can connect directly to our ArcServer platform for read-only access and view our map layers. Other instances whereby Arcgis.com's users may utilize this method is where they are including our map layers in their own mapping applications.

Mapping and Cartographic Products

The C&E 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, C&E has implemented a Map Book as part of their C&E GIS page. Maps can be downloaded in multiple formats. The C&E Map Book can be accessed via our C&E GIS page at https://www.h-gac.com/map-book/default.aspx.

System Resources

<u>System Architecture</u>

The C&E 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 C&E GIS platform supports sharing of geospatial data via the ArcServer mapping server platform. This allows 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 C&E GIS team to obtain information for the public on various geographic features in the region. This public feedback loop allows C&E to investigate feedback and verify its validity prior to incorporating the information into the data warehouse.

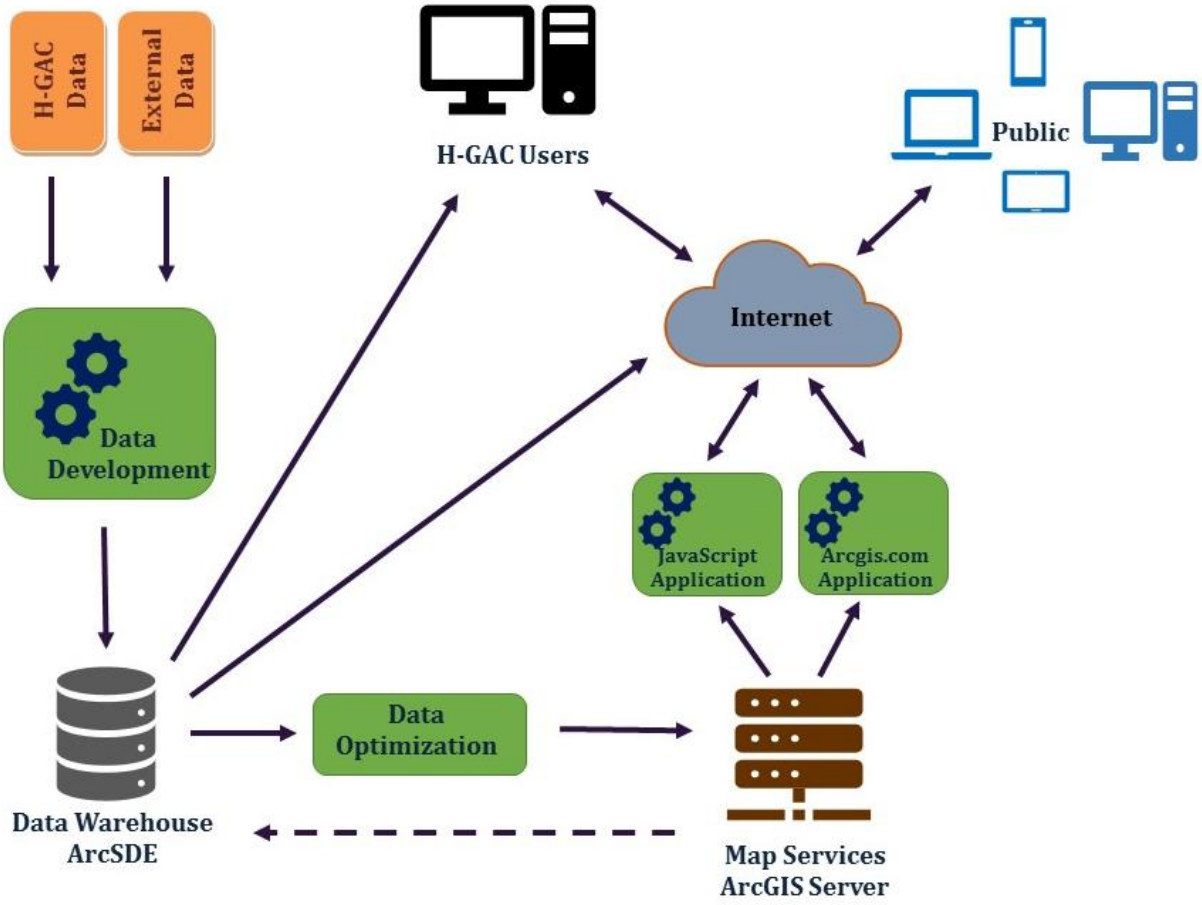


Figure 1: H-GAC Geospatial System Architecture

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 C&E 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 C&E GIS staff utilizes ESRI's ArcGIS 10.6.1 and ArcGIS Pro 2.4 platforms for all geospatial analysis and mapping needs. In addition, as needed, the staff also utilizes the SAS and ENVI software platforms for further analysis and data development as deemed necessary. SAS is used for statistical analysis and modeling of tabular data. Whereas, ENVI is used for remote sensing data processing and analysis. The ESRI ArcGIS 10.6.1 and ArcGIS Pro 2.4 platforms includes 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 centralized SDE is also provided by ESRI and provided for a centralized geospatial database where GIS staff can store geospatial data for either read-only or editable access by GIS users in the C&E department. The C&E GIS staff maintains access privileges to the SDE datasets and assigns individual users to various SDE access groups to grant approved accessed to data in the SDE. The SDE is considered the central warehouse where GIS users can go to for geospatial data to use in their analysis or mapping projects.

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 its cost. This database is developed using Microsoft Excel and is available to the C&E 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 C&E SDE, mapping server, geospatial applications, C&E GIS 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 C&E GIS team is comprised of 9 full-time GIS and data analysis professionals. The C&E GIS team supports all programs within the C&E department, which include Clean Rivers/Water Quality, Sustainability, Economic Development, Solid Waste, Ped/Bike, Socio-Economic Modeling, and special project. The C&E GIS team is part of the Socio-Economic Modeling program within C&E.

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 C&E stores GIS data and implements GIS-based applications.

Training

Training for all users of the system is a critical part of The Plan. C&E 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 C&E GIS Manger and other C&E 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 C&E SDE 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 review of the data set, a report will be generated which records any errors detected and any corrections that may be necessary.

Data Development Protocol

The C&E GIS staff works to update existing dataset, acquire new data, and perform geospatial analysis in support of various C&E 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 C&E, and at times leverages outside resources such as consultants, other non-profits whom H-GAC is partnering with, as well as with other H-GAC departments to obtain necessary data. Two datasets that the C&E department uses regularly outside the C&E SDE are the Data Services StarMap road centerline dataset and the Data Services aerial imagery database.

The C&E 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 C&E 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.

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 C&E data available in the C&E 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 C&E SDE. The C&E 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 SDE. Metadata for each dataset in the C&E 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.

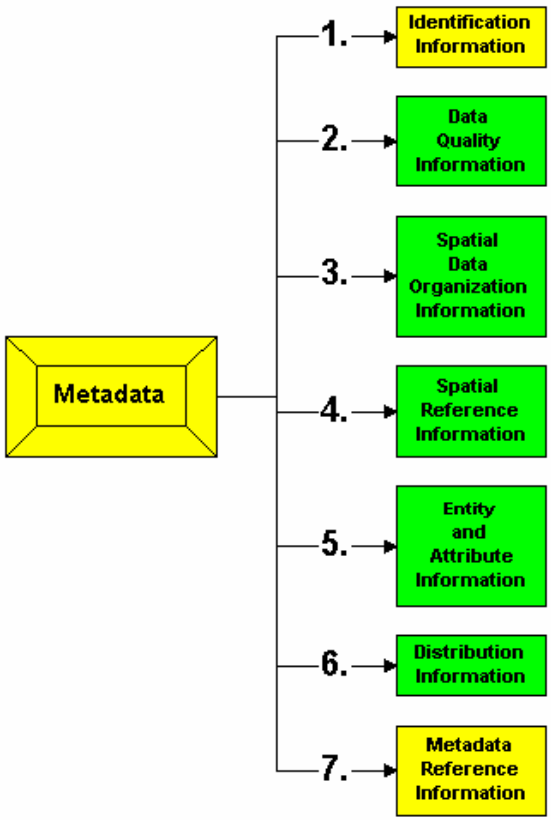


Figure 2: Elements of CSDGM Standards

Data Conversion

Data to be imported into the C&E SDE 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 C&E SDE, 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.

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 are 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. If the data is invalid it will be corrected (if possible) otherwise the data will be incorporated into the C&E SDE, 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 C&E generated GIS dataset will be housed in the C&E SDE which C&E GIS staff manage the contents and structure of datasets. The underlying hardware and network connections for the C&E SDE 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 C&E SDE to the Data Clearinghouse will occur on an as needed basis following department QA/QC measures and is handled by the C&E 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 C&E GIS team runs a schedule backup program to store a copy of all C&E 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 C&E SDE data and server configuration at regular intervals.

Disaster Recovery

In the event of a disaster, the C&E department will have access to all C&E SDE data which is stored on the portable hard drive. The C&E 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 C&E SDE 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? _____

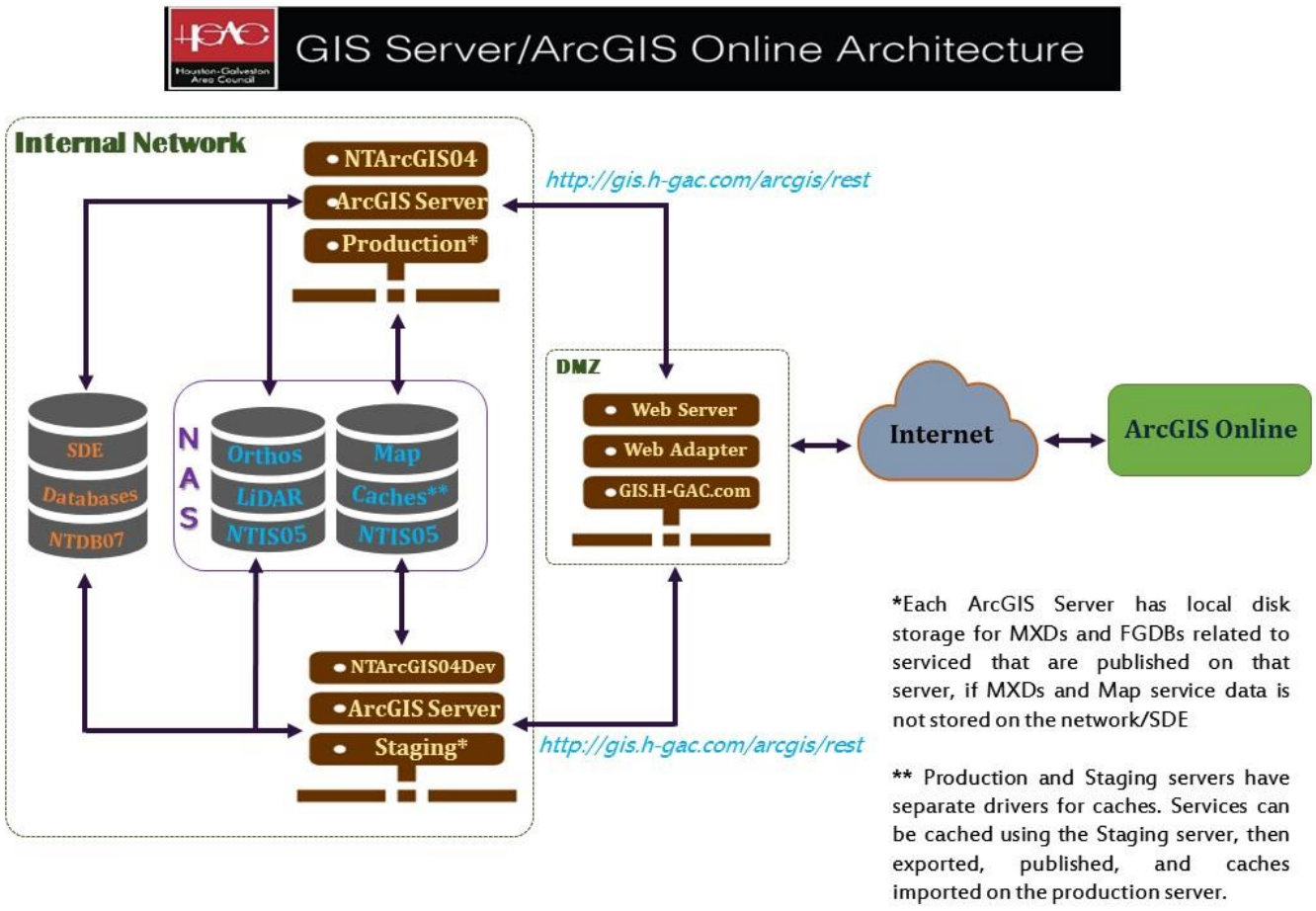
1. Do any of the key fields have missing values? If so which parameters have missing values? Yes ___ No ___
_____
_____
_____

2. Any known duplicate records? Yes ___ No ___

Appendix 3 Hardware

FTP Server
h-gac.sharefile.com

Mapping Application Servers



Desktop PC (Primarily used for GIS analysis)

1. Intel Core i7-9700 CPU @ 3.00 GHz – 32 GB RAM
2. Intel Core i7-9700 CPU @ 3.00 GHz – 32 GB RAM
3. Intel Core i7-9700 CPU @ 3.00 GHz – 32 GB RAM
4. Intel Xeon E-2186G CPU @ 3.80GHz – 16 GB RAM
5. Intel Core i7 9700 CPU @ 3.00 GHz – 16 GB RAM
6. Intel Core i7-9700 CPU @ 3.00GHz – 16 GB RAM
7. Intel Xeon E3-1245 v6 CPU @ 3.70GHz – 16 GB RAM
8. Intel Core i7-9700 CPU @ 3.00GHz – 16 GB RAM
9. Intel Core i7-8700 CPU @ 3.20GHz – 32 GB RAM

Plotters, Printers and Scanners

HP Designjet UPD Generic Plotter

HP Designjet T920 Postscript Plotter

- These two plotters are used by all H-GAC staff for large format printing of maps and schematics.

Xerox Workcenter 7845 and Cannon Advanced 4545 Printers and scanners. C&E maintains both printers.

Global Positioning System (GPS) Units

The C&E Department possesses two GPS units.

Fax Equipment

Brother Intellifax 4750e. The C&E Department owns one fax machine.

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 2.4 – 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.
ENVI Remote Sensing Data Analysis Package – Harris Geospatial

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.

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 7 - PC working environment/Operating System
Windows 10 - PC working environment/Operating System
Windows 2012 & 2016 - Server Operating Systems

Appendix 5 Data List

H-GAC Spatial Data Warehouse (SDE) Dataset

Dataset Name	Type
CE_SDE/ACE_HEX_2017	Polygon
CE_SDE/ACS_Housing_Counties_2017	Polygon
CE_SDE/ACS_Housing_Places_2017	Polygon
CE_SDE/ACS_Housing_Tracts_2017	Polygon
CE_SDE/ActivityPopulation_2000	Polygon
CE_SDE/Barker_and_Addicks_Reservoir_Watersheds	Polygon
CE_SDE/BGs_2014	Polygon
CE_SDE/BGs_2015	Polygon
CE_SDE/BGs_2016	Polygon
CE_SDE/BGs_2017	Polygon
CE_SDE/BGs_2018	Polygon
CE_SDE/BGs_Veterans_2016	Polygon
CE_SDE/BGs_Vulnerable_2015	Polygon
CE_SDE/BGs_Vulnerable_2016	Polygon
CE_SDE/BGs_Vulnerable_2017	Polygon
CE_SDE/BGs_Vulnerable_2018	Polygon
CE_SDE/BlueMap_ActivityPopulation	Polygon
CE_SDE/BZ_Model_Predictions_v2018	Polygon
CE_SDE/Cedar_Bayou_Watershed_Project_Monitoring_Sites	Point
CE_SDE/Census_Places_2014	Point
CE_SDE/Census_Places_2015	Polygon
CE_SDE/Census_Places_pt_2015	Point
CE_SDE/Census_Tracts	Polygon
CE_SDE/Census_Tracts_1	Polygon
CE_SDE/Census_Tracts_2014	Polygon
CE_SDE/CEnsus_Tracts_2015	Polygon
CE_SDE/CH_Model_Predictions_v2018	Polygon
CE_SDE/Closed_Landfill_Inventory	Point
CE_SDE/COH_Plats_2018_2020_feb	Polygon
CE_SDE/Congressional_Districts_115th_ACS_2017	Polygon
CE_SDE/Congressional_Districts_2017	Polygon
CE_SDE/Congressional_Districts_2018	Polygon
CE_SDE/Counties_2014	Polygon
CE_SDE/Counties_2015	Polygon
CE_SDE/Counties_2016	Polygon
CE_SDE/Counties_2017	Polygon

CE_SDE/Counties_2018	Polygon
CE_SDE/Counties_TX_Veterans_2016	Polygon
CE_SDE/County_LEHD_09_17	Polygon
CE_SDE/County_LEHD_2018	Polygon
CE_SDE/Critical_Facilities_2017	Point
CE_SDE/CRP_MonitoringStations_Subwatersheds	Polygon
CE_SDE/CRP_Project_Areas	Polygon
CE_SDE/Current_Future_Land_Use	Polygon
CE_SDE/Current_Future_Land_Use_2018	Polygon
CE_SDE/Employment_2000	Polygon
CE_SDE/FB_Model_Predictions_v2018	Polygon
CE_SDE/Forecast_Census_Tracts_2017	Polygon
CE_SDE/Forecast_Census_Tracts_2018	Polygon
CE_SDE/Forecast_H3M_2017	Polygon
CE_SDE/Forecast_H3M_2018	Polygon
CE_SDE/Forecast_TAZ5217_2017	Polygon
CE_SDE/Forecast_TAZ5217_2018	Polygon
CE_SDE/Galveston_Bay_Estuary_Program_Watersheds	Polygon
CE_SDE/GV_Model_Predictions_v2018	Polygon
CE_SDE/Harris_County_FCD_Sub_Watersheds	Polygon
CE_SDE/Harris_County_FCD_Watersheds	Polygon
CE_SDE/Harris_County_Zones_58	Polygon
CE_SDE/HEX_H1M_09_17	Polygon
CE_SDE/HEX_H1M_LEHD_2018	Polygon
CE_SDE/HGAC_13_County_ACS_2015_Blockgroup_summary	Polygon
CE_SDE/HGAC_13_County_Airports	Point
CE_SDE/HGAC_13_County_Airports_ParcelIDs	Table
CE_SDE/HGAC_13_County_Brownfield_Sites	Point
CE_SDE/HGAC_13_County_Closed_Landfill_Inventory	Point
CE_SDE/HGAC_13_County_CRP_DO_Stations	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2008	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2010	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2011	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2012	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2013	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2014	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2015	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2016	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_2017	Point
CE_SDE/HGAC_13_County_CRP_Monitoring_Stations_Historical	Point
CE_SDE/HGAC_13_County_Districts	Polygon

CE_SDE/HGAC_13_County_Ecological_Mapping_System_TPWD_2015	Polygon
CE_SDE/HGAC_13_County_Farmland	Polygon
CE_SDE/HGAC_13_County_Federal_Aid_Roads	Polyline
CE_SDE/HGAC_13_County_G1M	Polygon
CE_SDE/HGAC_13_County_G3M	Polygon
CE_SDE/HGAC_13_County_G5M	Polygon
CE_SDE/HGAC_13_County_Grocery_Stores	Point
CE_SDE/HGAC_13_County_Landfill_Areas	Polygon
CE_SDE/HGAC_13_County_Landfill_Areas_Historical	Polygon
CE_SDE/HGAC_13_County_Landfills	Point
CE_SDE/HGAC_13_County_Landfills_Historical	Point
CE_SDE/HGAC_13_County_Libraries	Point
CE_SDE/HGAC_13_County_Libraries_Parcel_Xref	Table
CE_SDE/HGAC_13_County_Mobile_Home_Parks_FEMA	Point
CE_SDE/HGAC_13_County_MS_Building_Footprints_2015	Polygon
CE_SDE/HGAC_13_County_Opportunity_Zones	Polygon
CE_SDE/HGAC_13_County_OSSF_Permits	Point
CE_SDE/HGAC_13_County_OSSF_Permits_2017	Point
CE_SDE/HGAC_13_County_OSSF_Permits_2018	Point
CE_SDE/HGAC_13_County_OSSF_Permits_2019	Point
CE_SDE/HGAC_13_County_OSSF_Permits_2020	Point
CE_SDE/HGAC_13_County_OSSF_Permits_2021	Point
CE_SDE/HGAC_13_County_Parks	Point
CE_SDE/HGAC_13_County_Parks_Awards	Table
CE_SDE/HGAC_13_County_Parks_Features	Table
CE_SDE/HGAC_13_County_Parks_Parcels	Table
CE_SDE/HGAC_13_County_Plats	Polygon
CE_SDE/HGAC_13_County_Recycle_Centers	Point
CE_SDE/HGAC_13_County_Service_Area_Boundaries	Polygon
CE_SDE/HGAC_13_County_Service_Area_Boundaries_2013	Polygon
CE_SDE/HGAC_13_County_Service_Area_Boundaries_2014	Polygon
CE_SDE/HGAC_13_County_Service_Area_Boundaries_2015	Polygon
CE_SDE/HGAC_13_County_Service_Area_Boundaries_2017	Polygon
CE_SDE/HGAC_13_County_Service_Area_Boundaries_Domestic_2018	Polygon
CE_SDE/HGAC_13_County_Soils	Polygon
CE_SDE/HGAC_13_County_Superfund_NPL_Sites	Polygon
CE_SDE/HGAC_13_County_Superfund_NPL_Sites_Pts	Point
CE_SDE/HGAC_13_County_Transmission_Lines_FEMA	Polyline
CE_SDE/HGAC_13_County_Wastewater_Outfall_Domestic_2018	Point
CE_SDE/HGAC_15_County_Aquifer_Recharge_Zones	Polygon
CE_SDE/HGAC_15_County_Basins	Polygon

CE_SDE/HGAC_15_County_Bio_Monitoring_Sites	Point
CE_SDE/HGAC_15_County_CRP_Impairments	Table
CE_SDE/HGAC_15_County_CRP_Lakes	Polygon
CE_SDE/HGAC_15_County_CRP_Monitoring_Stations_2019	Point
CE_SDE/HGAC_15_County_CRP_Monitoring_Stations_2020	Point
CE_SDE/HGAC_15_County_CRP_Monitoring_Stations_2021	Point
CE_SDE/HGAC_15_County_CRP_Stream_End_Points	Point
CE_SDE/HGAC_15_County_CRP_Streams	Polyline
CE_SDE/HGAC_15_COUNTY_LAND_COVER_2015_10_CLASS	Raster
CE_SDE/HGAC_15_COUNTY_LAND_COVER_2018_10_CLASS	Raster
CE_SDE/HGAC_15_COUNTY_LAND_COVER_2020_15_CLASS	Raster
CE_SDE/HGAC_15_County_NHDPlus_Streams	Polyline
CE_SDE/HGAC_15_County_NHDPlusV2_Catchment_Boundary	Polygon
CE_SDE/HGAC_15_County_Service_Area_Boundaries_2019	Polygon
CE_SDE/HGAC_15_County_Service_Area_Boundaries_2020	Polygon
CE_SDE/HGAC_15_County_Service_Area_Boundaries_2021	Polygon
CE_SDE/HGAC_15_County_Soils_2012	Polygon
CE_SDE/HGAC_15_County_Soils_2012_w_taxonomy	Polygon
CE_SDE/HGAC_15_County_Wastewater_Outfall_Domestic_2019	Point
CE_SDE/HGAC_15_County_Wastewater_Outfall_Domestic_2020	Point
CE_SDE/HGAC_15_County_Wastewater_Outfalls_2017	Point
CE_SDE/HGAC_15_County_Wastewater_Outfalls_2019	Point
CE_SDE/HGAC_15_County_Wastewater_Outfalls_2020	Point
CE_SDE/HGAC_15_County_Wastewater_Outfalls_2021	Point
CE_SDE/HGAC_15_County_Wastewater_Outfalls_Domestic_2021	Point
CE_SDE/HGAC_15_County_Wastewater_Outfalls_Historical	Point
CE_SDE/HGAC_15_County_Wastewater_Outfalls_Pre2017	Point
CE_SDE/HGAC_15_County_Water_Detailed_2018	Polygon
CE_SDE/HGAC_15_County_Watershed_Insets	Polygon
CE_SDE/HGAC_15_County_Watershed_Signs	Point
CE_SDE/HGAC_15_County_Watersheds	Polygon
CE_SDE/HGAC_8_County_Bikeway_Needs	Polyline
CE_SDE/HGAC_8_County_Bikeways	Polyline
CE_SDE/HGAC_8_County_Comprehensive_Plan_2010_pts	Point
CE_SDE/HGAC_8_County_Eco_Types	Polygon
CE_SDE/HGAC_8_County_Forecast_Cities_h	Table
CE_SDE/HGAC_8_County_Forecast_Cities_v	Table
CE_SDE/HGAC_8_County_Forecast_Counties_h	Table
CE_SDE/HGAC_8_County_Forecast_Counties_v	Table
CE_SDE/HGAC_8_County_Forecast_G025M_h	Table
CE_SDE/HGAC_8_County_Forecast_G1_h	Table

CE_SDE/HGAC_8_County_Forecast_G10K_h	Table
CE_SDE/HGAC_8_County_Forecast_G10K_v	Table
CE_SDE/HGAC_8_County_Forecast_G1M_h	Table
CE_SDE/HGAC_8_County_Forecast_G1M_v	Table
CE_SDE/HGAC_8_COUNTY_FORECAST_LU_G1_H	Table
CE_SDE/HGAC_8_County_Forecast_RAZ_h	Table
CE_SDE/HGAC_8_County_Forecast_RAZ_v	Table
CE_SDE/HGAC_8_County_Forecast_Region_v	Table
CE_SDE/HGAC_8_County_Forecast_TAZ_h_2003	Table
CE_SDE/HGAC_8_County_Forecast_TAZ_v_2003	Table
CE_SDE/HGAC_8_County_Forecast_Tracts_h	Table
CE_SDE/HGAC_8_County_Forecast_Tracts_v	Table
CE_SDE/HGAC_8_County_Forecast_Zip_Codes_h	Table
CE_SDE/HGAC_8_County_Forecast_Zip_Codes_v	Table
CE_SDE/HGAC_8_County_G025M	Polygon
CE_SDE/HGAC_8_County_G1	Polygon
CE_SDE/HGAC_8_County_G10	Polygon
CE_SDE/HGAC_8_County_G1M	Polygon
CE_SDE/HGAC_8_County_PedBike_Improvement_Areas	Polygon
CE_SDE/HGAC_8_County_PedBike_Improvement_Locations	Point
CE_SDE/HGAC_8_County_Pedestrian_Pathways	Polyline
CE_SDE/HGAC_8_County_Sector_25	Polygon
CE_SDE/HGAC_8_County_Soils	Polygon
CE_SDE/HGAC_8_County_Water	Polygon
CE_SDE/HGAC_Bastrop_Bayou_Sub_Watersheds	Polygon
CE_SDE/HGAC_CRP_Watersheds	Polygon
CE_SDE/HGAC_Lakes_AUs_2016	Polygon
CE_SDE/HGAC_Lakes_Segments_2016	Polygon
CE_SDE/HGAC_Other_CRP_Monitoring_Stations	Point
CE_SDE/HGAC_Region_WWTF_Outfalls_FY17	Point
CE_SDE/HGAC_Streams_AUs_2016	Polyline
CE_SDE/HGAC_Streams_Segments_2016	Polyline
CE_SDE/HHW_Centers	Point
CE_SDE/HouseholdPopulation_2000	Polygon
CE_SDE/Houston_Bcycle_Stations_2018	Point
CE_SDE/HR_Model_Predictions_v2018	Polygon
CE_SDE/HR_Model_Predictions_v2018_p1	Polygon
CE_SDE/HR_Model_Predictions_v2018_p2	Polygon
CE_SDE/HR_Model_Predictions_v2018_p3	Polygon
CE_SDE/Intersection_2000	Polygon
CE_SDE/ISD_2018	Polygon

CE_SDE/ISDs_2016	Polygon
CE_SDE/ISDs_2017	Polygon
CE_SDE/Job_HH_Ratio_2000	Polygon
CE_SDE/Landfill_Areas	Polygon
CE_SDE/Landfills	Point
CE_SDE/LB_Model_Predictions_v2018	Polygon
CE_SDE/LivableCenters	Polygon
CE_SDE/MG_Model_Predictions_v2018	Polygon
CE_SDE/Model_Buildings	Point
CE_SDE/Model_Buildings_2017	Point
CE_SDE/Model_Buildings_2017_events	Point
CE_SDE/Model_Buildings_2020	Point
CE_SDE/Model_Buildings_Rural	Point
CE_SDE/Model_Buildings_Uses	Table
CE_SDE/Model_Buildings_Uses_Rural	Table
CE_SDE/Model_Parcels	Polygon
CE_SDE/Model_Parcels_2017	Polygon
CE_SDE/Model_Parcels_2020	Polygon
CE_SDE/Model_Parcels_AcctNums	Table
CE_SDE/Model_Parcels_AcctNums_Rural	Table
CE_SDE/Model_Parcels_Addresses	Table
CE_SDE/Model_Parcels_Addresses_Rural	Table
CE_SDE/Model_Parcels_Features	Table
CE_SDE/Model_Parcels_Features_Rural	Table
CE_SDE/Model_Parcels_Rural	Polygon
CE_SDE/Montgomery_County_Zones_4	Polygon
CE_SDE/MS4_Permitted_Areas_2018	Polygon
CE_SDE/Nine_SQM_Grid	Polygon
CE_SDE/Nine_SQM_Grid_1	Polygon
CE_SDE/NLCD_IMPERVIOUSNESS_2016	Raster
CE_SDE/One_SQM_Grid	Polygon
CE_SDE/One_SQM_Grid_1	Polygon
CE_SDE/Ped_Bike_Destinations_2017	Point
CE_SDE/Place_LEHD_09_17	Polygon
CE_SDE/Place_LEHD_2018	Polygon
CE_SDE/Places_poly_2015	Polygon
CE_SDE/Places_poly_2016	Polygon
CE_SDE/Places_poly_2017	Polygon
CE_SDE/Places_poly_2018	Polygon
CE_SDE/Places_pt_2016	Point
CE_SDE/Places_pt_2017	Point

CE_SDE/Places_pt_2018	Point
CE_SDE/Recycling_and_HHW_Centers	Point
CE_SDE/Recycling_Centers	Point
CE_SDE/TCEQ_AU_Line_2020	Polyline
CE_SDE/Texas_Coastal_Zone_Boundary	Polygon
CE_SDE/Texas_Impairment_Streams_2008	Polyline
CE_SDE/Texas_Impairment_Waterbodies_2008	Polygon
CE_SDE/Texas_Stream_Team_Monitoring_Sites_2016	Point
CE_SDE/Texas_Stream_Team_Monitoring_Sites_2018	Point
CE_SDE/Texas_Stream_Team_Monitoring_Sites_2020	Point
CE_SDE/TexasStateHouse_2018	Polygon
CE_SDE/TexasStateSenate_2018	Polygon
CE_SDE/The_Woodlands_Pathways	Polyline
CE_SDE/TMDL_Watersheds	Polygon
CE_SDE/TPWD_13_County_LWRCRP_conservation_and_recreation_lands	Polygon
CE_SDE/Tract_LEHD_09_17	Polygon
CE_SDE/Tract_LEHD_2018	Polygon
CE_SDE/Tracts_2016	Polygon
CE_SDE/Tracts_2017	Polygon
CE_SDE/Tracts_2018	Polygon
CE_SDE/Transportation_Analysis_Zones_2954	Polygon
CE_SDE/Transportation_Analysis_Zones_2954_1	Polygon
CE_SDE/Transportation_Analysis_Zones_5217	Polygon
CE_SDE/Transportation_Analysis_Zones_5217_1	Polygon
CE_SDE/USFWS_15_County_Wetlands_2018	Polygon
CE_SDE/USGS_Stream_Gauges_2009	Point
CE_SDE/USGS_Stream_Gauges_2010	Point
CE_SDE/USGS_Stream_Gauges_2012	Point
CE_SDE/USGS_Stream_Gauges_2017	Point
CE_SDE/WA_Model_Predictions_v2018	Polygon
CE_SDE/Watershed_Based_Plans_2021	Polygon
CE_SDE/Zips_2014	Polygon
CE_SDE/Zips_2015	Polygon
CE_SDE/Zips_2016	Polygon
CE_SDE/Zips_2017	Polygon
CE_SDE/Zips_2018	Polygon
Global_SDE/Austin_County_Commissioner_Precincts	Polygon
Global_SDE/Brazoria_County_Commissioner_Precincts	Polygon
Global_SDE/Brazos_Transit_District_Bus_Routes	Polyline
Global_SDE/Brazos_Transit_District_Park_and_Rides	Point
Global_SDE/Chambers_County_Commissioner_Precincts	Polygon

Global_SDE/CoH_Council_Districts	Polygon
Global_SDE/CoH_Historical_Districts	Polygon
Global_SDE/CoH_Police_Districts	Polygon
Global_SDE/CoH_Public_Libraries	Point
Global_SDE/CoH_Street_Pavement_Edges	Polyline
Global_SDE/CoH_Traffic_Signals	Point
Global_SDE/CoH_Traffic_Signs	Point
Global_SDE/Colorado_County_Commissioner_Precincts	Polygon
Global_SDE/Colorado_Valley_Transit_Bus_Routes	Polyline
Global_SDE/Connect_Transit_Bus_Routes	Polyline
Global_SDE/Conroe_Transit_Bus_Routes	Polyline
Global_SDE/DataAxle_Businesses_2021	Point
Global_SDE/DataAxle_Businesses_Nix_2021	Point
Global_SDE/DataAxle_Businesses_Pre_2021	Point
Global_SDE/DataAxle_Businesses_Suspect_2021	Point
Global_SDE/DataAxle_Consumers_2021	Point
Global_SDE/EPA_Texas_Eco_Regions	Polygon
Global_SDE/FEMA_Floodplains_DFIRM_Q3_2010	Polygon
Global_SDE/FEMA_Floodplains_NFHL_2015	Polygon
Global_SDE/Fort_Bend_County_Commissioner_Precincts	Polygon
Global_SDE/Fort_Bend_County_Constable_Precincts	Polygon
Global_SDE/Fort_Bend_Transit_Bus_Routes	Polyline
Global_SDE/Galveston_County_Commissioner_Precincts	Polygon
Global_SDE/GCR911ECD_Counties_Coastline	Polygon
Global_SDE/GCR911ECD_Counties_Political	Polygon
Global_SDE/Gulf_Of_Mexico	Polygon
Global_SDE/Harris_County_Commissioner_Precincts	Polygon
Global_SDE/Harris_County_Constable_Precincts	Polygon
Global_SDE/Harris_County_Sheriff_Districts	Polygon
Global_SDE/Harris_County_Transit_Bus_Routes	Polyline
Global_SDE/HGAC_AEL_Providers	Point
Global_SDE/HGAC_Airport_Runways	Polygon
Global_SDE/HGAC_Airport_System	Point
Global_SDE/HGAC_Art_of_Transportation	Point
Global_SDE/HGAC_Buy_Active_EndUsers	Point
Global_SDE/HGAC_Buy_PO_EndUsers	Point
Global_SDE/HGAC_Career_Offices	Point
Global_SDE/HGAC_City_Boundaries	Polygon
Global_SDE/HGAC_City_Council_Districts	Polygon
Global_SDE/HGAC_City_ETJ_Boundaries	Polygon
Global_SDE/HGAC_City_Ordinance_Areas	Polygon

GLOBAL_SDE/HGAC_COASTAL_VIGNETTE_RASTER	Raster
Global_SDE/HGAC_CoH_Council_Districts_UI_Claims	Polygon
Global_SDE/HGAC_Commissioner_Precincts	Polygon
Global_SDE/HGAC_Commissioner_Precincts_UI_Claims	Polygon
Global_SDE/HGAC_Contours_2_Feet	Polyline
Global_SDE/HGAC_Contours_5_Feet	Polyline
Global_SDE/HGAC_Counties_Coastline	Polygon
Global_SDE/HGAC_Counties_Coastline_15C	Polygon
Global_SDE/HGAC_Counties_Coastline_Boundary	Polygon
Global_SDE/HGAC_Counties_Coastline_Boundary_15C	Polygon
Global_SDE/HGAC_Counties_COVID_19_Cases	Polygon
Global_SDE/HGAC_Counties_Demo_Jobs	Polygon
Global_SDE/HGAC_Counties_Hospital_Beds	Polygon
Global_SDE/HGAC_Counties_Political	Polygon
Global_SDE/HGAC_Counties_Political_15C	Polygon
Global_SDE/HGAC_Counties_Political_Boundary	Polygon
Global_SDE/HGAC_Counties_Political_Boundary_15C	Polygon
Global_SDE/HGAC_Counties_UI_Claims	Polygon
Global_SDE/HGAC_Counties_UI_Claims_TWC	Polygon
Global_SDE/HGAC_COVID_19_Active_Cases	Table
Global_SDE/HGAC_COVID_19_Confirmed_Cases_and_Tests	Table
Global_SDE/HGAC_COVID_19_Deceased_Cases	Table
Global_SDE/HGAC_COVID_19_Harris_County_Info	Table
Global_SDE/HGAC_COVID_19_Hospital_Beds_and_Ventilators	Table
Global_SDE/HGAC_COVID_19_Recovered_Cases	Table
Global_SDE/HGAC_COVID_19_Test_Sites	Point
Global_SDE/HGAC_COVID_19_TSA_Q_Info	Table
Global_SDE/HGAC_COVID_19_US_MSAs_Confirmed_and_Deceased_Cases	Table
Global_SDE/HGAC_Dams	Point
Global_SDE/HGAC_Election_Precincts	Polygon
Global_SDE/HGAC_Ex_Offender_Resources	Point
Global_SDE/HGAC_Flex_Zones	Polygon
Global_SDE/HGAC_FM_Roads	Polyline
Global_SDE/HGAC_Freshwater_Saltwater_Boundary	Polyline
Global_SDE/HGAC_Gulf_Coast_ETPS	Point
GLOBAL_SDE/HGAC_HILLSHADE	Raster
Global_SDE/HGAC_Hurricane_Dolly_Observations	Point
Global_SDE/HGAC_Hurricane_Dolly_Track	Polyline
Global_SDE/HGAC_Hurricane_Evacuation_Routes	Polyline
Global_SDE/HGAC_Hurricane_Evacuation_Zip_Codes	Polygon
Global_SDE/HGAC_Hurricane_Ike_High_Water_Measurements	Point

Global_SDE/HGAC_Hurricane_Ike_Observations	Point
GLOBAL_SDE/HGAC_HURRICANE_IKE_SALT_BURN_GULF_COAST	Raster
Global_SDE/HGAC_Hurricane_Ike_Storm_Surge_Model	Polygon
GLOBAL_SDE/HGAC_HURRICANE_IKE_STORM_SURGE_MODEL_RASTER	Raster
Global_SDE/HGAC_Hurricane_Ike_Track	Polyline
GLOBAL_SDE/HGAC_LAND_COVER_10_CLASS_2008	Raster
GLOBAL_SDE/HGAC_LAND_COVER_10_CLASS_ROADS_2008	Raster
GLOBAL_SDE/HGAC_LAND_COVER_3X3_MODE_FILTERED_2008	Raster
GLOBAL_SDE/HGAC_LAND_COVER_MERGED_6_CLASS_2008	Raster
Global_SDE/HGAC_Learning_Centers	Point
Global_SDE/HGAC_LiDAR_Breakline	Polyline
Global_SDE/HGAC_LiDAR_Contours_1_Foot	Polyline
Global_SDE/HGAC_LiDAR_Spot_Elevation	Point
Global_SDE/HGAC_Major_Lakes_and_Reservoirs	Polygon
Global_SDE/HGAC_Major_Rivers	Polyline
Global_SDE/HGAC_Major_Rivers_15C	Polyline
Global_SDE/HGAC_Major_Roads	Polyline
Global_SDE/HGAC_Major_Roads_15C	Polyline
Global_SDE/HGAC_MSWF_Managed_Lanes	Polyline
Global_SDE/HGAC_MSWF_Traffic_Management_Strategies	Point
Global_SDE/HGAC_NWR_Areas	Polygon
Global_SDE/HGAC_Parks	Polygon
Global_SDE/HGAC_Parole_Offices	Point
Global_SDE/HGAC_Pipelines	Polyline
Global_SDE/HGAC_RAZ	Polygon
Global_SDE/HGAC_Re_Entry_Resources	Point
Global_SDE/HGAC_Regional_Employers	Point
Global_SDE/HGAC_School_Districts	Polygon
Global_SDE/HGAC_School_Districts_UI_Claims	Polygon
Global_SDE/HGAC_Sea_Level_Rise	Polygon
Global_SDE/HGAC_Seaports	Point
Global_SDE/HGAC_Sidewalks_Final	Polyline
Global_SDE/HGAC_Sidewalks_Preliminary	Polyline
Global_SDE/HGAC_StarMap_Addresses	Point
Global_SDE/HGAC_StarMap_Centerlines	Polyline
Global_SDE/HGAC_StarMap_ZipCodes	Polygon
Global_SDE/HGAC_State_Highways	Polyline
Global_SDE/HGAC_State_House_Districts_UI_Claims	Polygon
Global_SDE/HGAC_State_Senate_Districts_UI_Claims	Polygon
Global_SDE/HGAC_TAZ_2954	Polygon
Global_SDE/HGAC_TAZ_5217	Polygon

Global_SDE/HGAC_Texas_Coastal_Vignette	Polygon
Global_SDE/HGAC_Texas_State_House_Districts	Polygon
Global_SDE/HGAC_Texas_State_Senate_Districts	Polygon
Global_SDE/HGAC_Texas_US_House_Districts	Polygon
Global_SDE/HGAC_TIRZ	Polygon
Global_SDE/HGAC_Transit_Stops	Point
Global_SDE/HGAC_Trauma_Service_Areas	Polygon
Global_SDE/HGAC_UI_Claimants	Point
Global_SDE/HGAC_Urban_Areas_2000	Polygon
Global_SDE/HGAC_Urban_Areas_2010	Polygon
Global_SDE/HGAC_US_House_Districts_UI_Claims	Polygon
Global_SDE/HGAC_Water	Polygon
Global_SDE/HGAC_Water_15C	Polygon
Global_SDE/HGAC_Water_Detailed	Polygon
Global_SDE/HGAC_Workforce_Centers	Point
Global_SDE/HGAC_Workforce_DARS	Point
Global_SDE/HGAC_Workforce_Solutions_Offices	Point
Global_SDE/HGAC_Workforce_Solutions_VR_Offices	Point
Global_SDE/HGAC_Zip_Codes_2000	Polygon
Global_SDE/HGAC_Zip_Codes_2002	Polygon
Global_SDE/HGAC_Zip_Codes_2005	Polygon
Global_SDE/HGAC_ZIP_Codes_Area_NAICS_Hexagon	Polygon
Global_SDE/HGAC_ZIP_Codes_Demo	Polygon
Global_SDE/HGAC_ZIP_Codes_Jobs	Polygon
Global_SDE/HGAC_ZIP_Codes_UI_Claims	Polygon
Global_SDE/HGAC_ZIP_Codes_UI_Claims_TWC	Polygon
Global_SDE/HRWY_Employers	Point
Global_SDE/InfoGroup_Businesses_2014	Point
Global_SDE/InfoGroup_Businesses_2015	Point
Global_SDE/InfoGroup_Businesses_2016	Point
Global_SDE/InfoGroup_Businesses_2017	Point
Global_SDE/InfoGroup_Businesses_2018	Point
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Global_SDE/InfoGroup_Businesses_2020	Point
Global_SDE/InfoGroup_Businesses_Nix_2014	Table
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Global_SDE/InfoGroup_Businesses_Nix_2019	Point
Global_SDE/InfoGroup_Businesses_Nix_2020	Point

Global_SDE/InfoGroup_Businesses_Pre_2018	Point
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Global_SDE/InfoGroup_Businesses_Pre_2020	Point
Global_SDE/InfoGroup_Businesses_Suspect_2014	Point
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Global_SDE/InfoGroup_Businesses_Suspect_2020	Point
Global_SDE/InfoGroup_Consumers_2014	Point
Global_SDE/InfoGroup_Consumers_2015	Point
Global_SDE/InfoGroup_Consumers_2016	Point
Global_SDE/InfoGroup_Consumers_2017	Point
Global_SDE/InfoGroup_Consumers_2018	Point
Global_SDE/InfoGroup_Consumers_2019	Point
Global_SDE/InfoGroup_Consumers_2020	Point
Global_SDE/Island_Transit_Bus_Routes	Polyline
Global_SDE/Island_Transit_Bus_Stops	Point
Global_SDE/Lambert_Grid	Polygon
Global_SDE/Lambert_Grid_Product	Polygon
Global_SDE/Lambert_Grid_Products_1	Table
Global_SDE/Liberty_County_Commissioner_Precincts	Polygon
Global_SDE/LiDAR_Building_Footprints_2014_Fort_Bend_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Austin_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Brazoria_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Chambers_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Fort_Bend_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Galveston_County	Polygon
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Global_SDE/LiDAR_Building_Footprints_2018_Matagorda_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Montgomery_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Walker_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Waller_County	Polygon
Global_SDE/LiDAR_Building_Footprints_2018_Washington_County	Polygon
Global_SDE/LiDAR_Grid_2008	Polygon
Global_SDE/LiDAR_Grid_2014	Polygon

Global_SDE/LiDAR_Grid_2018_Full_Extent	Polygon
Global_SDE/LiDAR_Grid_2018_HCFCD_Extent	Polygon
Global_SDE/Matagorda_County_Commissioner_Precincts	Polygon
Global_SDE/Metro_Bus_Routes	Polyline
Global_SDE/Metro_Bus_Stops	Point
Global_SDE/Metro_LRT_Lines	Polyline
Global_SDE/Metro_LRT_Stations	Point
Global_SDE/Metro_MTA_Tax_Area	Polygon
Global_SDE/Metro_Park_and_Rides	Point
Global_SDE/Metro_Transit_Centers	Point
Global_SDE/Montgomery_County_Commissioner_Precincts	Polygon
Global_SDE/NGS_Control_Stations	Point
GLOBAL_SDE/NLCD_IMPERVIOUSNESS_2001	Raster
GLOBAL_SDE/NLCD_IMPERVIOUSNESS_2006	Raster
GLOBAL_SDE/NLCD_IMPERVIOUSNESS_2011	Raster
GLOBAL_SDE/NLCD_IMPERVIOUSNESS_2016	Raster
GLOBAL_SDE/NLCD_IMPERVIOUSNESS_CHANGE_2001_TO_2006	Raster
GLOBAL_SDE/NLCD_IMPERVIOUSNESS_CHANGE_2006_TO_2011	Raster
GLOBAL_SDE/NLCD_LAND_COVER_1992_19_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_1992_19_CLASS_CORRECTED	Raster
GLOBAL_SDE/NLCD_LAND_COVER_2001_15_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_2004_17_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_2006_15_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_2008_17_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_2011_15_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_2013_16_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_2016_16_CLASS	Raster
GLOBAL_SDE/NLCD_LAND_COVER_CHANGE_1992_TO_2011_9_CLASS	Raster
GLOBAL_SDE/NLCD_TREE_CANOPY_2001	Raster
GLOBAL_SDE/NLCD_TREE_CANOPY_2011	Raster
GLOBAL_SDE/NLCD_TREE_CANOPY_2016	Raster
GLOBAL_SDE/NOAA_LAND_COVER_1996_22_CLASS	Raster
GLOBAL_SDE/NOAA_LAND_COVER_2001_22_CLASS	Raster
GLOBAL_SDE/NOAA_LAND_COVER_2006_22_CLASS	Raster
GLOBAL_SDE/NOAA_LAND_COVER_2011_15_CLASS	Raster
GLOBAL_SDE/NOAA_LAND_COVER_2011_22_CLASS	Raster
GLOBAL_SDE/NOAA_LAND_COVER_CHANGE_1996_TO_2010	Raster
Global_SDE/NOAA_Surge_MOM_Galveston_Bay	Polygon
Global_SDE/NOAA_Surge_MOM_Matagorda_Bay	Polygon
Global_SDE/NPS_Texas_National_Parks	Polygon
Global_SDE/NTAD_Raillines	Polyline

Global_SDE/NTAD_Raillines_General	Polyline
Global_SDE/POHA_Ship_Channel	Polygon
Global_SDE/PUCT_Texas_Area_Codes	Polygon
Global_SDE/Strava_Bike_Usage_2017	Polyline
Global_SDE/Strava_Bike_Usage_2018	Polyline
Global_SDE/Strava_Bike_Usage_2019	Polyline
Global_SDE/Strava_Bike_Usage_2020	Polyline
Global_SDE/TAMU_Texas_Coastal_Bathymetry	Point
Global_SDE/TAMU_Texas_Coastal_Bathymetry_Contour	Polyline
Global_SDE/TCEQ_Texas_Regions	Polygon
Global_SDE/TCEQ_Texas_Surface_Water_Rights_Diversion	Point
Global_SDE/TEA_School_Districts	Polygon
Global_SDE/TEA_Schools	Point
Global_SDE/TEA_Texas_Education_Service_Regions	Polygon
Global_SDE/TEA_Texas_School_Districts	Polygon
Global_SDE/TEA_Texas_Senate_Board_of_Education_Districts	Polygon
Global_SDE/TFT_Texas_Adoption_Sites	Point
Global_SDE/The_Woodlands_Township_Bus_Routes	Polyline
Global_SDE/THHS_Texas_Community_Nursing_Homes	Point
Global_SDE/TNRIS_Texas_Major_Aquifers	Polygon
Global_SDE/TNRIS_Texas_Minor_Aquifers	Polygon
Global_SDE/TNRIS_Texas_National_Forests	Polygon
Global_SDE/TPWD_Texas_Natural_Regions	Polygon
Global_SDE/TWDB_Texas_Groundwater_Conservation_Districts	Polygon
Global_SDE/TWDB_Texas_Major_Rivers	Polyline
Global_SDE/TxDOT_Highway_Milemarkers	Point
Global_SDE/TxDOT_Texas_COG_Boundaries	Polygon
Global_SDE/TxDOT_Texas_Highways	Polyline
Global_SDE/TxDOT_Texas_Hurricane_Evacuation_Routes	Polyline
Global_SDE/TxDOT_Texas_State_House_Districts	Polygon
Global_SDE/TxDOT_Texas_State_Senate_Districts	Polygon
Global_SDE/TxDOT_Texas_US_House_Districts	Polygon
Global_SDE/USCB_ACS_2018_5Yr_Block_Groups	Polygon
Global_SDE/USCB_ACS_2018_5Yr_Counties	Polygon
Global_SDE/USCB_ACS_2018_5Yr_Places	Polygon
Global_SDE/USCB_ACS_2018_5Yr_Tracts	Polygon
Global_SDE/USCB_ACS_2018_5Yr_Zip_Codes	Polygon
Global_SDE/USCB_BlockGroups_1990	Polygon
Global_SDE/USCB_BlockGroups_2000	Polygon
Global_SDE/USCB_BlockGroups_2010	Polygon
Global_SDE/USCB_Blocks_2000	Polygon

Global_SDE/USCB_Blocks_2010	Polygon
Global_SDE/USCB_Metropolitan_Statistical_Area	Polygon
Global_SDE/USCB_PL_Data_2010_Block_Groups	Table
Global_SDE/USCB_PL_Data_2010_Blocks	Table
Global_SDE/USCB_PL_Data_2010_Counties	Table
Global_SDE/USCB_PL_Data_2010_Places	Table
Global_SDE/USCB_PL_Data_2010_School_Districts	Table
Global_SDE/USCB_PL_Data_2010_Tracts	Table
Global_SDE/USCB_Places_2000	Polygon
Global_SDE/USCB_Places_2000_Pts	Point
Global_SDE/USCB_Places_2010	Polygon
Global_SDE/USCB_Places_2010_Pts	Point
Global_SDE/USCB_PSAP_Prep_BlockGroups_ACS_2017	Polygon
Global_SDE/USCB_PSAP_Prep_CDPs_and_Cities	Polygon
Global_SDE/USCB_PSAP_Prep_Tracts	Polygon
Global_SDE/USCB_PSAP_Prep_Tracts_ACS_2017	Polygon
Global_SDE/USCB_Texas_BlockGroups_1990	Polygon
Global_SDE/USCB_Texas_BlockGroups_2000	Polygon
Global_SDE/USCB_Texas_BlockGroups_2010	Polygon
Global_SDE/USCB_Texas_Blocks_2000	Polygon
Global_SDE/USCB_Texas_Blocks_2010	Polygon
Global_SDE/USCB_Texas_Coastline_Boundary	Polygon
Global_SDE/USCB_Texas_Counties_Coastline	Polygon
Global_SDE/USCB_Texas_Counties_Political	Polygon
Global_SDE/USCB_Texas_Political_Boundary	Polygon
Global_SDE/USCB_Texas_School_Districts_2010	Polygon
Global_SDE/USCB_Texas_Tracts_1990	Polygon
Global_SDE/USCB_Texas_Tracts_2000	Polygon
Global_SDE/USCB_Texas_Tracts_2010	Polygon
Global_SDE/USCB_Texas_Urban_Areas_2000	Polygon
Global_SDE/USCB_Texas_Zip_Codes_2005	Polygon
Global_SDE/USCB_Texas_Zip_Codes_2010	Polygon
Global_SDE/USCB_Tracts_1970	Polygon
Global_SDE/USCB_Tracts_1980	Polygon
Global_SDE/USCB_Tracts_1990	Polygon
Global_SDE/USCB_Tracts_2000	Polygon
Global_SDE/USCB_Tracts_2010	Polygon
Global_SDE/USCB_Urban_Areas_1990	Polygon
Global_SDE/USCB_Urban_Areas_2000	Polygon
Global_SDE/USCB_Urban_Areas_2010	Polygon
Global_SDE/USCB_US_State_Boundaries	Polygon

Global_SDE/USCB_Zip_Codes_2010	Polygon
Global_SDE/USDOT_Navigable_Waterway_Lines	Polyline
Global_SDE/USFWS_Wetlands_2009	Polygon
Global_SDE/USFWS_Wetlands_2010	Polygon
Global_SDE/USFWS_Wetlands_2011	Polygon
Global_SDE/USFWS_Wetlands_2012	Polygon
Global_SDE/USGS_15_Minute_Quad	Polygon
Global_SDE/USGS_24K_Quad	Polygon
GLOBAL_SDE/USGS_DEM_10M	Raster
Global_SDE/USGS_DOQQ_Grid	Polygon
Global_SDE/USGS_HUC_02_Regions	Polygon
Global_SDE/USGS_HUC_04_Subregions	Polygon
Global_SDE/USGS_HUC_06_Basins	Polygon
Global_SDE/USGS_HUC_08_Subbasins	Polygon
Global_SDE/USGS_HUC_10_Watersheds	Polygon
Global_SDE/USGS_HUC_12_Subwatersheds	Polygon
Global_SDE/USGS_Texas_HUC_02_Regions	Polygon
Global_SDE/USGS_Texas_HUC_04_Subregions	Polygon
Global_SDE/USGS_Texas_HUC_06_Basins	Polygon
Global_SDE/USGS_Texas_HUC_08_Subbasins	Polygon
Global_SDE/USGS_Texas_HUC_10_Watersheds	Polygon
Global_SDE/USGS_Texas_HUC_12_Subwatersheds	Polygon
GLOBAL_SDE/USGS_TEXAS_TERRAIN_COLOR_MAP	Raster
Global_SDE/Walker_County_Commissioner_Precincts	Polygon
Global_SDE/Waller_County_Commissioner_Precincts	Polygon
Global_SDE/Wharton_County_Commissioner_Precincts	Polygon
Global_SDE/World_Country_Boundaries	Polygon

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