Attachment A: Scope of Work

Overview

The goal of this scope of work is to facilitate the exchange of geospatial information between PUBLIC AGENCY and CAPCOG to help ensure that efficient and accurate response to emergency calls and text messages in all areas of the Capital Area Emergency Communications District (CAECD). In order to accomplish this:

1. Calls and texts must be routed to the correct public safety answering point (PSAP);
2. The correct emergency service provider must be dispatched to the appropriate location; and
3. The emergency responders must be able to know the most efficient route to reach that location.

Definitions

Core 9-1-1 GIS data terminology:

1. **9-1-1 GIS Database**: The geospatial database maintained and updated by the PUBLIC AGENCY that includes, at a minimum, all address points (SSAPs), road centerlines (RCLs), PSAP boundaries, Emergency Service Boundaries (ESBs), Emergency Service Zone (ESZ) boundaries, and city limit (municipal) boundaries for the PUBLIC AGENCY's provisioning boundary
2. **Data Layer**: Also known as a Feature Class, is a group of geographic features that reside in a table of information with corresponding locations on the earth (map) represented as either points, lines, or polygons.
3. **Address Points (SSAPs)**: A data layer of points identifying sites or structures associated with a street address, or the location of access to a site or structure, but may also represent landmarks.
4. **Road (Street) Centerlines (RCLs)**: A data layer of lines estimating the centerline of a roadway that contains information such as road name, road classification, and address range
5. **City Limit (Municipal) Boundary**: A polygon data layer representing the geographic extent of a city's administrative boundary, not including any extra-territorial jurisdiction. Updates to City Limit boundaries are used to update PSAP, ESB, and ESZ boundaries.
6. **Automatic Location Information (ALI) Database**: A tabular database of landline telephone numbers with associated location information used to route 9-1-1 calls to a PSAP.
7. **Legacy Master Street Address Guide (MSAG) Database:** A tabular database of street names and house number ranges within their associated communities defining ESZs and their associated Emergency Service Numbers (ESNs) to enable proper routing of 9-1-1 calls.

Specialized NG9-1-1 GIS terminology:

1. **Provisioning Boundary**: The authoritative polygon data layer that defines the PUBLIC AGENCY's geographic area of 9-1-1 GIS responsibility. This should be the entire extent of the PUBLIC AGENCY's administrative boundary, plus any other adjacent areas or minus areas within its administrative boundaries as agreed to between the PUBLIC AGENCY and another city or county. Provisioning boundaries may only be modified with express written concurrence between the PUBLIC AGENCY, adjacent PUBLIC AGENCIES, and CAPCOG.

The provisioning boundary should include the area that the PUBLIC AGENCY assigns address points and road names under its own authority, plus any other areas that the PUBLIC AGENCY does not have such authority, but with which it has entered into an exclusive agreement to obtain this information for the 9-1-1 GIS database. Situations that may warrant a change to a provisioning boundary include (but are not limited to): municipal annexations, disannexations, consolidation of two or more municipalities, formation of new municipalities, changes in PSAP service areas, and changes in emergency responder service areas.

2. **PSAP boundary**: The authoritative polygon data layer representing the geographic area within a provisioning boundary served by a single 9-1-1 call center (a PSAP), to which all emergency requests are initially routed.
3. **Emergency Service Boundary (ESB)**: A polygon data layer that represents the geographic area of responsibility for emergency response providers within the geographic extent of the provisioning boundary. Each 9-1-1 GIS database includes, at a minimum, a law ESB layer, a fire ESB layer, and an Emergency Medical Services (EMS) ESB layer.
4. **Emergency Service Zone (ESZ)**: A polygon data layer representing the area within a provisioning boundary served by a unique combination of law, fire, and EMS responders. ESZs are optional for inclusion in the NG9-1-1 GIS database.
5. **Database Schema**: Also known as Data Model, is the database structure with regard to field properties, including data type, field value constraints, etc. Converting one database schema to another involves field-matching (field-mapping) and other compatibility considerations.
6. **Geo-MSAG**: A geospatially-based database that replaces the MSAG and is created and managed using a road centerline GIS dataset. A city or county must first transition from a traditional tabular MSAG to a Geo-MSAG before it can transition to NG9-1-1. In order to qualify to initiate the transition to a Geo-MSAG, a county must achieve at least 98% match between ALI to RCL records as described later in this document.
7. **Globally Unique IDs (GUIDs)**: A unique identifier that is assigned to each record (feature) in an PUBLIC AGENCY's 9-1-1 GIS database; a GUID uniquely identifies a feature both within the PUBLIC AGENCY's 9-1-1 GIS database provisioning boundary and across all 9-1-1 GIS databases.

Quality Control terminology:

1. **Enterprise Geospatial Data Management System (EGDMS)**: A cloud-based quality control platform provided by AT&T/Intrado used for identifying critical errors that affect call and dispatch routing that will be used by the PUBLIC AGENCY to provision (determines acceptable) data to CAPCOG's NG9-1-1 system for call routing. EGDMS does not assess "significant" errors that affect dispatch.
2. **DataHub**: a cloud-based quality control platform provided by GeoComm that, in addition to being able to identify critical errors, can also identify "significant" and "other" errors in a PUBLIC AGENCY's 9-1-1 GIS database. DataHub is the system that will provide data to a call taker's map display in the near future.
3. **New Error**: Any error present in the PUBLIC AGENCY's 9-1-1 GIS database update for the first time.
4. **Legacy Error**: Any error in the PUBLIC AGENCY's 9-1-1 GIS database update that was also present in a preceding update.

5. **Accuracy Rate**: The percentage of features that have been assessed by EGDMS, DataHub, or both, as being free of errors or matching a related database.
6. **Error Rate**: The percentage of features that have been assessed as having a critical error, significant error, or as not matching a related database.
7. **Critical Error**: Any error in the PUBLIC AGENCY's 9-1-1 GIS database assessed by EGDMS or DataHub that cause, or have a potential of causing, a critical fault in the routing of a 9-1-1 emergency service request call or text to the correct PSAP; the EGDMS system prevents data with critical errors from being uploaded to the NG9-1-1 system. Examples include (but are not limited to) gaps and overlaps between several of the data layers described above.
8. **Significant Error**: Any error in the PUBLIC AGENCY's 9-1-1 GIS database update found by GeoComm's Data Hub quality control software that cause, or have a potential of causing, a critical fault in Computer-Aided Dispatch (CAD) mapping platforms or other related systems.
9. **Other Error**: Any error in the PUBLIC AGENCY's 9-1-1 GIS database identified by GeoComm's Data Hub quality control software other than a "critical" or "significant" error.

Task 1: Basic Work

Task 1 involves information gathering and data preparation needed for the 9-1-1 GIS database but does NOT involve updating the 9-1-1 GIS database directly.

Task 1.A: PUBLIC AGENCY shall submit to CAPCOG, at least once a month, a comprehensive record of 9-1-1 related information needed for complete and updated 9-1-1 GIS database records for all areas within the PUBLIC AGENCY's Provisioning Boundary consisting of:

1. Street Addresses
2. Roads
3. City limit boundaries
4. Law ESB*
5. Fire ESB*
6. Emergency Medical Service ESB*
7. ESZs*
8. Other pertinent information

*Shall be submitted if changes are requested for CAPCOG approval, otherwise these data are not required to be submitted as part of monthly dataset (see Task 1D).

Data submitted by PUBLIC AGENCY must adhere to requirements laid out in Attachment B.

Task 1B: PUBLIC AGENCY shall enter into and maintain agreements with all other local governments with the authority to assign address points, assign road names and address ranges, alter municipal boundaries, or change the geographic coverage of emergency service providers in order to ensure that these entities provide such data to PUBLIC AGENCY in a timely manner. When such changes occur, PUBLIC AGENCY shall provide CAPCOG with adequate advance notice of any substantive changes that could or should affect PSAP boundaries, ESB boundaries, provisioning boundaries, or any sub-contracting in order for an orderly transition as a result of any pending new agreement, amendment, or agreement termination.

Task 1C: PUBLIC AGENCY shall be responsible for conveying any relevant information from CAPCOG regarding 9-1-1 GIS database integrity to other local governments and governmental entities partially or wholly within its provisioning boundary.

Task 1D: PUBLIC AGENCY shall provide to CAPCOG information from any County Commissioners' Court meetings or City Council meetings that would affect PUBLIC AGENCY's performance of this contract, including (but not limited to) changes to PSAPs, ESBs/ESZs, annexation, or subcontracting. PUBLIC AGENCY's Project Representative is expected to keep track of County Commissioners Court and City Council meeting agendas to determine if an item may affect the performance of this contract, and notify CAPCOG's project representative of any such issues as soon as possible, but no later than 2 days prior to the Commissioners Court or City Council meeting. Such information includes, but is not limited to, annexation notices, disannexation notices, and interlocal agreements related to emergency services and coverage areas. To the extent possible, CAPCOG will use the ESB and ESZ data submitted by the PUBLIC AGENCY in the 9-1-1 system. However, CAPCOG reserves the right to make adjustments to these data and/or reinstate prior versions if the data submitted by PUBLIC AGENCY are found to have errors. Regardless of any such changes made by local governments within their provisioning boundary, those changes will not be made in the 9-1-1 system until this information is provided to CAPCOG, CAPCOG accepts the information, and makes the corresponding changes in the 9-1-1 system. CAPCOG shall make PUBLIC AGENCY aware of any required changes to these boundaries within three business days of being provided with the polygon data. Note that changes to these data may be sent to CAPCOG at any point during the month. PUBLIC AGENCY is responsible for downloading and using the latest authoritative version of the ESZ/ESB files used in the 9-1-1 system from CAPCOG at the beginning of each month to avoid repetition of errors if they have occurred.

Task 1.E: PUBLIC AGENCY shall send at least one representative to each scheduled 9-1-1 GIS User Group meetings (GMUG) and at least one training workshop hosted by CAPCOG during the performance period of this agreement.

Task 2: GIS Work for PSAP Map Updates

Task 2 involves GIS work needed for directly maintaining and updating the 9-1-1 GIS database for use in monthly updates to PSAP mapping applications. This is work that CAPCOG would need to perform if the PUBLIC AGENCY did not do so. CAPCOG's expectation is that this work would be performed by a person, either on staff or subcontracted by the PUBLIC AGENCY, with responsibilities, knowledge, skills, education, and experience comparable to the state's "Geographic Information Specialist II" job description.[1] . PUBLIC AGENCY must maintain at least one ESRI ArcGIS software license as specified in Attachment B in order to carry out this work. Task 2 includes the following sub-tasks:

Task 2.A: PUBLIC AGENCY shall submit all information required under Task 1.A that corresponds to GIS data layers in the 9-1-1 GIS database at least once a month. This will be provided in ESRI File geodatabase format (.gdb) pursuant to Attachment B and any other CAPCOG guidance on the 1st business day of each month or up to five business days prior to the 1st business day of the month. PUBLIC AGENCY shall first submit road centerline, street address point, city limit boundary data and their respective ALI extract for that month to DataHub in order to identify and address any mismatches between the ALI database and PUBLIC AGENCY's RCL and address point data, "critical" errors, and

[1] Available online at: http://www.hr.sao.texas.gov/CompensationSystem/JobDescriptions/

"significant" errors. This quality control system requires the 9-1-1 GIS database to match the standardized database schema (data model) for this system through field-matching (field-mapping) procedures and other standards.

Task 2.B: PUBLIC AGENCY shall address any errors identified by DataHub validation checks (reports) or CAPCOG Quality Control reports from those systems as soon as possible, but no later than the following conventional monthly submission to CAPCOG. This includes coordination with adjacent PUBLIC AGENCIES and CAPCOG where necessary.

Task 2.C: PUBLIC AGENCY shall address any other discrepancies identified by authorized stakeholders including, but not limited to, PSAP 9-1-1 call-takers.

Task 2.D: At least once a month, PUBLIC AGENCY shall back up the 9-1-1 GIS database and store it in a secure place. PUBLIC AGENCY shall include a record of the dates the database was backed up in the activity reports that are required to be submitted with quarterly invoices.

Task 2.E: In addition, PUBLIC AGENCY shall maintain the ALI database within the PUBLIC AGENCY's provisioning boundary. This includes, but is not limited to, correcting telephone number database errors, maintenance and quality-control of an accurate 9-1-1 call location map.

Task 3: Updates for Call-Routing

In a NG9-1-1 environment, the GIS database is used not only for PSAP mapping applications, but also to route both cell and landline phone calls to the proper PSAP. Whereas for the monthly PSAP map update, CAPCOG aggregates data submitted from PUBLIC AGENCY with all of the other local governments under contract with CAPCOG and the pushes these data out to the PSAPs, for call routing updates, PUBLIC AGENCY will submit data directly to EGDMS.

Task 3.A: PUBLIC AGENCY shall submit the most recent 9-1-1 road centerline and street address GIS data from Task 2 to EGDMS at least once a month on the first business day of the month or up to five business days prior to that date. While PUBLIC AGENCY may submit updates to EGDMS more frequently than once a month, it will be expected to make at least one submission within this window each month and CAPCOG will only be assessing performance based on PUBLIC AGENCY's submission during this window. RCL updates submitted by PUBLIC AGENCY to EGDMS will automatically update PUBLIC AGENCY's GeoMSAG.

Task 3.B: To the extent EGDMS identifies any critical errors in the 9-1-1 databases submitted by PUBLIC AGENCY, PUBLIC AGENCY must work on correcting any such errors prior to the next monthly submission. Failure to make progress in correcting critical errors identified in the prior month's submission will be noted in CAPCOG's comprehensive performance reports and should be noted and explained in quarterly reports submitted by PUBLIC AGENCY when submitting an invoice to CAPCOG.

Content of Quarterly Reports

Along with each quarterly invoice, PUBLIC AGENCY will submit an activity report that contains all of the following information related to activities that occurred in the quarter:

- For each applicable governmental entity with administrative boundaries within PUBLIC AGENCY's provisioning boundary, PUBLIC AGENCY shall provide a summary of actions taken

each month relevant to the 9-1-1 GIS database, including any new records added since the last update and errors corrected.
- The date and time of the PUBLIC AGENCY's last backup of its 9-1-1 GIS database each month of the quarter.
- Dates and basic summaries (such as total number of features) of data submissions to CAPCOG.
- A summary of any work that involved resolution of boundary issues with other entities, correction of errors and resolution of any other issues related to this contract
- An explanation for any performance issues during the quarter and corrective action that will be taken to address and prevent such issues in the future, including:
    - Late or incomplete data submissions;
    - Failure to meet performance expectations for ALI to RCL match accuracy rates, critical error accuracy rates, or significant error rates; and
    - Any other issue identified by CAPCOG in a performance report.

CAPCOG will provide PUBLIC AGENCY the template to use for activity reports.

Timeline

The following timeline should be used by PUBLIC AGENCY in planning its submission of data to DataHub and CAPCOG for PSAP map updates (Task 2) and to EGDMS for and call-routing updates (Task 3):

- January 2022:
    - Submission window: December 22, 2021 – January 3, 2022
    - Error correction window for PSAP map updates: January 4, 2022 – January 7, 2022
    - CAPCOG pushes out PSAP map update: January 11, 2022
- February 2022:
    - Submission window: January 25, 2022 – February 1, 2022
    - Error correction window for PSAP map updates: February 2, 2022 – February 7, 2022
    - CAPCOG pushes out PSAP map update: February 9, 2022
- March 2022:
    - Submission window: February 22, 2022 – March 1, 2022
    - Error correction window for PSAP map updates: March 2, 2022 – March 7, 2022
    - CAPCOG pushes out PSAP map update: March 9, 2022
- April 2022:
    - Submission window: March 25, 2022 – April 1, 2022
    - Error correction window for PSAP map updates: April 2, 2022 – April 7, 2022
    - CAPCOG pushes out PSAP map update: April 11, 2022
- May 2022:
    - Submission window: April 25, 2022 – May 2, 2022

    - Error correction window for PSAP map updates: May 3, 2022 – May 6, 2022
    - CAPCOG pushes out PSAP map update: May 10, 2022
- June 2022:
    - Submission window: May 24, 2022 – June 1, 2022
    - Error correction window for PSAP map updates: June 2, 2022 – June 7, 2022
    - CAPCOG pushes out PSAP map update: June 9, 2022
- July 2022:
    - Submission window: June 24, 2022 – July 1, 2022
    - Error correction window for PSAP map updates: July 2, 2022 – July 8, 2022
    - CAPCOG pushes out PSAP map update: July 12, 2022
- August 2022:
    - Submission window: July 25, 2022 – August 1, 2022
    - Error correction window for PSAP map updates: August 2, 2022 – August 5, 2022
    - CAPCOG pushes out PSAP map update: August 9, 2022
- September 2022:
    - Submission window: August 25, 2022 – September 1, 2022
    - Error correction window for PSAP map updates: September 2, 2022 – September 8, 2022
    - CAPCOG pushes out PSAP map update: September 12, 2022

CAPCOG Guidance and Direction

In addition to the Performance Reports identified in Task 2.B, CAPCOG may issue technical guidance or direction to PUBLIC AGENCY's Project Representative that provides further clarification, interpretation, and details. Failure to follow any such guidance would constitute a performance deficiency for this agreement.