# Requirements Overview

The purpose of this document is to record the functional requirements needed to successfully implement GIS for Philly311 CRM.

# Version: 1.0

# Requirements

Unisys will develop a point-to-point interface between the City’s GIS applications (ESRI ArcGIS Server and custom GIS API) and SFDC Service Cloud platform. The use case for GIS integration for the Pilot involves the agent being able to validate the address provided by the caller, retrieve City’s GIS data (coordinates, address type, location, and service areas) and store the GIS data with the service request, and visually determine from a list of existing service request on a map whether the service request is a duplicate (for the seven (7) service requests being implemented for the Pilot). The address validation service, GIS data stored for each service request type, and GIS data displayed on the map will be finalized and agreed during the design of each service request type. The design of each service request type is defined in Section 2.2.3 Information & Service Request Configuration.

The workflow for validating the address will be as follows:

1. Agent enters the new service request information in the Pilot System including an address.
2. After validating the address, the Pilot System displays open service requests on the map for the agent to determine if the request is a duplicate of an existing service request.
3. The Agent verifies whether the new service request is a duplicate to a location on the map.

Unisys assumes that the City has a GIS/ESRI solution in production that is accessible to Unisys for the purposes of this project. The City will have all GIS layers for use in the Philly311 solution defined. The GIS integration will be developed for the City per the approved Design document.

# Implementation

There are three sources of data; Salesforce (cases, accounts, contacts, etc.), Philadelphia GIS web services (locator, geocoding), and Philadelphia's ESRI server (maps, layers, etc.).

The integration will rely on these three sources of information to provide all the data necessary. Salesforce originates web-service callouts from two points; inside the cloud from Salesforce's APEX programming language and from the user's browser using JavaScript. Both the GIS and ESRI web services must be accessible from both inside and outside the network for the integration to work.

Except for storing standardized addresses and coordinates in Salesforce, the integration will not write to either the ESRI or Philly GIS web services.

| **Reference Number** | **Service Request Requirements** | **Type** | **Implementation Plan** | **How Provided** | **Workshop Notes** |
| --- | --- | --- | --- | --- | --- |
| 1.14 | The solution provides ability to allow entry for multiple address description for the same location per service request, each able to be assigned a type code (e.g., reporting, mailing, problem location, vanity address, etc.) which can be verified against the city's GIS system, utilizing the GIS layer appropriate to the type of service request | CU | Salesforce.com can be configured to allow entry of multiple addresses per service request, SFDC Service Cloud application will be configured by using APEX callouts in VisualForce pages to validate addresses against City's GIS system and provide an appropriate GIS layer. Unisys will use the City provided Address validation Services to populate the right information in the Service Request fields | SFDC Service Cloud |  |
| 2.19 | The solution provides ability to validate addresses entered by the constituent on a self-service request | CU | SFDC Service Cloud application will be configured by to utilize city-provided web service for validating addresses. | SFDC Service Cloud |  |
| 5.14 | The solution provides ability to generate "hot-spot" reporting for geographic areas in predefined zones (e.g., zip code, census tract, etc.) or user-defined areas | CU | SFDC Service Cloud application will be configured by creating VisualForce pages and communicating with the City's GIS server to display Hot-spot pages. Pre-defined zones must be configured in the City’s GIS databases for retrieval as boundaries. | SFDC Service Cloud |  |
| 5.20 | The solution allows report results to be viewed on a map | CU | SFDC Service Cloud application will be configured by creating VisualForce pages and communicating with the City's GIS server to select locations to be presented on a page as a map. | SFDC Service Cloud |  |
| 7.01 | The solution provides the ability to use the City's GIS data for all geospatial applications | CU | SFDC Service Cloud application will be configured by writing APEX Callouts to interface with City provided web service. Geospatial data is limited to whatever data is provided to Salesforce from the City provided web services. | SFDC Service Cloud |  |
| 7.02 | The solution provides the ability to give different permissions to roles within the City | F | SFDC Service Cloud roles and profiles will be configured by Unisys to implement this requirement | SFDC Service Cloud |  |
| 7.03 | The solution provides the ability to import a subset of GIS-enabled data (e.g. x and y coordinates) | N | SFDC Service Cloud application can be configured to implement this requirement but is currently not in scope. | SFDC Service Cloud |  |
| 7.04 | The solution provides the ability to export a subset of GIS-enabled data (e.g. x and y coordinates) | N | SFDC Service Cloud application can be configured to implement this requirement but is currently not in scope. | SFDC Service Cloud |  |
| 7.05 | The solution provides the ability to access GIS data and applications from the intake, resolution, or query functions | CU | SFDC Service Cloud application will be configured by creating VisualForce components and pages as required for intake, resolution or query functions. | SFDC Service Cloud |  |
| 7.06 | The software provides the ability to allow a constituent to provide feedback on map quality | TP | This will be provided by Configuring the SFDC Service cloud and installing third party App Exchange tool - *SurveyForce (Unisys responsibility)* | SurveyForce |  |
| 7.07 | The software provides the ability to successfully integrate with Esri ArcGIS Server v10 or higher | CU | SFDC Service Cloud application will be configured by writing APEX Callouts to interface with Esri ArcGIS Server v10 or higher assuming the later versions are backward compatible. | SFDC Service Cloud |  |
| 7.08 | The solution provides the ability to allow call takers to directly connect calls, service requests, and work orders to assets, which are stored in GIS (e.g., street centerlines, poles, RFID license medallions, and intersections) | CU | SFDC Service Cloud application will be configured by creating APEX callouts and VisualForce components to connect data to assets stored in GIS. The solution will interact with City provided address validation services. The assets must be accessible from the City’s web service and GIS databases. | SFDC Service Cloud |  |
| 7.09 | The solution provides the ability to generate/incorporate a map directly from the GIS and attach, print or plot it to a service request or work order record | CU | SFDC Service Cloud application will be configured to integrate with City's Esri ArcGIS server to allow mapping service requests or work orders using APEX Callouts and VisualForce components on the Service requests or work order page layouts. Printing and plotting ability will be based on the user’s printing and plotting ability from their web browser. | SFDC Service Cloud |  |
| 7.10 | The solution provides the ability to be accessed from a mobile device (smart phone, tablet, etc.) | F | SFDC Service Cloud application will require minimum browser functionality, including support for JavaScript, HTML5, and other minimum requirements to support Salesforce and ESRI. Because of these requirements, not all browsers, versions of browsers, or mobile devices may be fully supported. | SFDC Service Cloud |  |
| 7.11 | The solution provides the ability to assist call takers in identifying related calls by displaying related case types in a map using user-defined criteria | CU | SFDC Service Cloud application will be configured by integrating to City's ArcGIS servers to VisualForce components and APEX callouts to display related service requests on a map. | SFDC Service Cloud |  |
| 7.12 | The solution provides the ability for agents to see information from GIS layer such as whether property is owned by City and which department manages it | CU | SFDC Service Cloud application will be configured to integrate with City's ArcGIS server to display map layers of relevant data that exists on the City's servers. | SFDC Service Cloud |  |
| 7.13 | The solution shall provide a method to verify accurate street addressing and locations based on the City's standardized address web services | CU | SFDC Service Cloud application will be configured to integrate with City's existing address validation services to verify addresses and locations. | SFDC Service Cloud |  |
| 7.14 | The solution provides the ability for service request addresses and locations can be verified against various City-provided web services based on the category of request | CU | SFDC Service Cloud application will be configured to integrate with City's existing address validation services to verify addresses. | SFDC Service Cloud |  |
| 7.15 | The solution provides the ability to specify a location as a street address/subunit point feature, or geocoded by address range along a street segment, or as an intersection, or commonplace name | CU | SFDC Service Cloud application will be configured to integrate with City's existing address validation services and provide an ability to specify a location in various desired formats that is available in the City's GIS data. Resolving that information to a geolocation will be dependent on the ESRI service provided by the City. In other words, if the City's address validation services can provide that information, it can be accessed by the solution. | SFDC Service Cloud |  |
| 7.16 | The system shall provide a method to verify accurate street addressing and locations based on the City's GIS data (least preferred version) | CU | SFDC Service Cloud application will be configured to integrate with City's existing address validation services to verify addresses. | SFDC Service Cloud |  |
| 7.17 | The solution provides the ability to search for an address and zoom to location | CU | SFDC Service Cloud application will be configured by writing APEX code to enable search and zoom to a location by integrating to the City's GIS server. | SFDC Service Cloud |  |
| 7.18 | The solution provides the ability to detect duplicate service requests based on location | CU | SFDC Service Cloud application will be configured by integrating to City's ArcGIS servers to VisualForce components and APEX callouts to display related service requests on a map. However, the agent will have to use judgment to make a final determination on duplicates. | SFDC Service Cloud |  |
| 7.19 | The solution provides the ability to enter a request via the Internet allowing the requestor to record an address, have the address validated and displayed on a map. | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.20 | The solution provides the ability to verify (flag) addresses or locations as a City of Philadelphia asset with or location with associated data | CU | SFDC Service Cloud application will be configured to implement this requirement, as part of the ESRI-Salesforce.com integration, if this information is provided by the City's Web services | SFDC Service Cloud |  |
| 7.21 | The solution provides the ability to discern between City and non-City locations (inside/outside City limits), and flag for users | CU | SFDC Service Cloud application will be configured to implement this requirement, as part of the ESRI-Salesforce.com integration, if this information is provided by the City's web services | SFDC Service Cloud |  |
| 7.22 | The software provides the ability to inform the user that the address field is not a recognized street address | CU | SFDC Service Cloud application will be configured to implement this requirement, as part of the ESRI-Salesforce.com integration, if this information is provided by the City's Web services | SFDC Service Cloud |  |
| 7.23 | The solution provides the ability or basic navigation including ability to zoom and pan | CU | SFDC Service Cloud application will be configured to expose ESRI's native zoom and pan for maps. | SFDC Service Cloud |  |
| 7.24 | The solution provides the ability to zoom to defined boundary | CU | SFDC Service Cloud application will be configured to use predefined boundaries or polygons inside either ESRI or the GIS web services. | SFDC Service Cloud |  |
| 7.25 | The solution provides the ability to view a map of service requests on top of a City GIS data base map | CU | SFDC Service Cloud application will be configured to display a map by creating a VisualForce page, fetching service requests and integrating to City's Web Services and ESRI GIS server. | SFDC Service Cloud |  |
| 7.26 | The solution provides the ability to display service requests and associated data (service request number, status, short description) on the same map. | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.27 | The solution provides the ability to enter a request via the Internet allowing the requestor to select a location of an incident on a map | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.28 | The solution provides the ability to perform basic map viewing functions including analyzing dynamic map data in the CRM map display window | CU | SFDC Service Cloud application will be configured to implement this requirement. Dynamic map data is assumed to be the ability to turn on / off GIS map layers. | SFDC Service Cloud |  |
| 7.29 | The solution provides the ability to use the City's base map | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
|  | The solution provides the ability to display a list and map of service requests filtered by: |  |  |  |  |
| 7.30 | User-defined boundaries (e.g., user-drawn boundary box) | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.31 | Pre-defined boundaries (e.g., zip code, ward, district, census tract) | CU | SFDC Service Cloud application will be configured to implement this requirement assuming these boundaries are defined and accessible from the City’s Web Services | SFDC Service Cloud |  |
| 7.32 | Specific attributes (e.g., status, department) | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.33 | The solution provides the ability to display maps and images online to the public | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.34 | The solution provides the ability to display maps online to employees, based on security rules | F | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.35 | The solution provides the ability for users to modify scale, size and print maps generated from the CRM application to display service request query result locations | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.36 | The solution provides the ability for users to query service requests previously entered into the solution using various selection criteria and see the query result locations on a map | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.37 | The solution provides the ability to view open requests via a GIS display for all work orders, symbolized by one or more attributes | CU | SFDC Service Cloud application will be configured to implement this requirement | SFDC Service Cloud |  |
| 7.39 | The solution provides the ability to upload and display topographical or aerial images to help staff locate and understand the nature of the case type by utilizing the City's base map services | CU | SFDC Service Cloud application will be configured to implement this requirement assuming the images are available from the City’s web services or ESRI GIS Services as map layers. Uploading data is not in scope. | SFDC Service Cloud |  |
| 11.19 | The solution provides the ability for the mobile application to default to displaying nearby issues in map or text-based view | TP | Both views are available, but defaults to a list based view (not a map based view). SFDC Service Cloud application will be configured to enable integrations with the City Philly 311 Mobile App from Public Stuff. The City and Unisys agree that the mobile app itself is not within the scope of the Project. | PublicStuff |  |

# Action Items – The City

* The City of Philadelphia will provide Unisys with access to/right to use (as necessary to perform the Services) all of the City applications (including GIS/ESRI) at no cost to Unisys.
* The City of Philadelphia will provide a technical contact for the City’s ESRI/GIS, and City Web-site to support the integration development and production support.
* The City of Philadelphia will resolve any issues (that impact the 311 project/System) in any City applications such as GIS/ESRI, PublicStuff, CityWorks, in a timely manner so that they do not impact the agreed upon project plan or performance of the System.

# Action Items – Unisys

• GIS/ESRI Integration Requirements Definition Document (This document.)

* GIS/ESRI Integration Design Document
* Enhance the SFDC Service Cloud platform to GIS/ESRI interface with any additional layers required for the additional Service Requests per the Business Configuration Design document
* Develop and unit test each channel configuration and integration for GIS/ESRI Integration (if necessary)