THE CITY OF ROSWELL

2019
URISA Exemplary Systems in Government (ESIG™) Award Submission

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May 20, 2019

URISA
701 Lee Street, Suite 680
Des Plaines, IL 60016

Subject: 2019 URISA Award for Exemplary Systems in Government (ESIG)

To Whom It May Concern,

As the City Administrator for the City of Roswell, Georgia, I am excited to authorize the submission of the City of Roswell’s Geographic Information System (GIS) for your consideration in selecting the recipient of the 2019 URISA Exemplary System in Government (ESIG) award for Enterprise Systems.

Over the past three years, Roswell has made a considerable investment in modernizing and leveraging the City’s GIS to make Roswell more effective as an organization, and more transparent as a local government. During this period, Roswell’s GIS has gone from relative obscurity, to being featured in nationwide industry publications. The City’s rapid adoption and deployment of enterprise GIS solutions has dramatically elevated the visibility and usability of GIS for both staff and citizens. It is my hope that this submission illustrates Roswell’s commitment to data-driven decision-making processes, supported in part by GIS that best serve our citizenry.

I am happy to discuss further or answer any questions you may have.

Respectfully,

G. Palmer
City Administrator
A. SYSTEM

1. Name and Category

System Name: City of Roswell GIS
ESIG Category: Enterprise Systems

2. Letter from the Executive Administrator

See Attached

3. System Summary

In 2015, the City of Roswell contracted Geographic Technologies Group (GTG) to perform a Strategic Assessment of the City's GIS. The Assessment identified nearly 50 metrics by which to measure Roswell's existing GIS, and the results were sobering. Compared to successful GIS programs at other cities of similar size, Roswell's GIS had numerous deficiencies. Among other things, the Strategic Assessment identified the following areas for improvement: Roswell's GIS was several years behind current technology and workflows, several departments had data “fiefdoms,” where data was siloed and not shared among other departments that would benefit from access, City staff had a lack of awareness and understanding of GIS capabilities, Roswell had no online or mobile GIS presence, the City's GIS website was based on Silverlight (functionally obsolete), there were no defined workflows, and no integration with other enterprise systems were in place.

Compared to other cities of similar size, Roswell’s GIS was deficient
Presented with the results (see graphic below), Roswell's decision makers and elected officials were motivated to quickly and aggressively modernize the City's GIS to not only be on par with contemporaries, but to be a regional leader in GIS. Roswell again collaborated with GTG to create and implement a 3-year GIS Strategic Implementation Plan. This plan provided a road map to achieving realistic and prioritized objectives to support the goals set forth by the elected officials. Beginning with educating Roswell's employees about the benefits of GIS, the system was designed with supporting staff to make the City of Roswell more efficient as an organization. “Quick wins” were identified and accomplished to generate additional buy-in and support. Next, Department-wide GIS initiatives were developed to integrate GIS with many vital city functions. GIS was integrated with other enterprise systems to facilitate data flow and enhance analytics. IT infrastructure was strengthened to support the increased demand. GIS data were centralized and standardized to increase fidelity and interoperability with other municipalities. Every city department, and nearly every division, are now users of GIS. Finally, the data was shared with the public in a variety of engaging and informative ways. City of Roswell citizens are now becoming devoted GIS users through the use of online tools and applications.

City of Roswell’s Initial Benchmarking Results
City of Roswell's Current Benchmarking Results

Three Year Growth at The City of Roswell Represented Through Organizational KPIs
Roswell is now beginning the 3rd and final year of the Strategic Implementation Plan, and the gains have been tremendous. In years past, Roswell was far behind other cities of comparable size with respect to GIS. Roswell is close to becoming a regional GIS leader, with smaller agencies in the area now beginning to seek out guidance from Roswell. Continued monitoring by GTG has tracked the progress among an expanded number of metrics (from 50 to 96) to provide quantitative information on Roswell's progress through the implementation. The graphic above shows the growth for these metrics, with dark blue indicating starting points and light blue representing growth. Elements of Roswell's GIS have even been featured in nationwide industry publications.

For a city of nearly 100,000, a project of this scope and success is rare. While some work remains to be done, we believe that the rapid growth and successful development of Roswell's GIS to be exemplary. In three years, Roswell will have gone from a relatively obscure user of GIS, to an industry leader in GIS use and integration.
4. User Testimonials

The following pages contain user testimonials.
To whom it may concern,

Last year, we replaced our old fire hydrant inspection process with an updated GIS version. The GIS version is much better, here are some of the benefits:

1. Hydrant map easier to read and flows better as I move around using the GPS.

2. Turning on & off the GPS is now a simple one click step with the GPS button positioned in the top right hand corner of the map. Before I had to exit out of the map and go to a different window, turn on the GPS, then go back to the map window and wait for the computer/GPS to pick up my location. Also, I would have make several selections in the GPS window to get it started.

3. Many times the GPS would lose connection and I would have to do step 2 several times through out the day. Now all I have to do is click on the GPS button (in the top right corner) to get my location.

4. I can open up any hydrant and update it without being parked right next to it. On the old program I had to be parked within 20 feet of the hydrant for the program to pick it up and open the hydrant window. This is very helpful and takes away all the pulling forward or backing up the truck waiting for the GPS to pick up the hydrant.

5. The individual hydrant window is easier to navigate and work When servicing a hydrant it is three simple steps: 1. date-just click "today", I don't have to type out the 8 character date like the old program made you do. 2. Enter my user number. 3. Click and pick from a provided list of how I serviced the hydrant.

6. After do these three simple steps I hit submit and it automatically updates the hydrants in the system.

7. At the end of the day I would have to go in and plug my laptop in at my desk and wait for my supervisor to download my day's work into the system. The download was a long slow process and sometimes the download wasn't done until the next day, meaning it would be still downloading after we left. Now the program is "live" and updates as soon as I click submit. This also saves my supervisor a lot of time every day by not needing to download the data.

8. I can operate the new hydrant program on my phone which is also very convenient.

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9. Overall the new hydrant program is great it shaves minutes off the computer time to when servicing each hydrant. Now more waiting for the GPS to pick up, no more opening and closing several windows to service each hydrant. It may be a short time for just one hydrant but when I service many hydrants in a day it saves a lot of time. No more waiting on the computer to keep up.

The new system is a big improvement. It saves me and my supervisor time every day.

Regards,

Mark Whitaker
Hydrant Inspector
Roswell Fire Marshal’s Office
1810 Hembree Road
Alpharetta, Georgia 30009
Office 770-641-3770
Cell 404-787-7683

38 Hill Street, Roswell, GA 30075
www.roswellgov.com
5/22/19

To Whom It May Concern:

I am pleased to support the City of Roswell’s submission for the 2019 URISA ESIG Award Application for Enterprise Systems.

The City of Roswell has been under-utilizing GIS capabilities for many years. With the implementation of a GIS Enterprise System, the Environmental/Public Works Department (ENV/PW) has finally been able to reach its GIS strategic goals. Of particular note, the Enterprise System’s capabilities for the implementation of web maps and mobile applications, has allowed the Water Utility, Stormwater Utility and Environmental Divisions to work in the field with real-time GIS data in a more efficient and organized data process. The ability to publish feature service maps to ArcGIS Online has enabled the ENV/PW Department to utilize the ArcCollector and Survey123 mobile apps for Stormwater Utility asset inspections, Water Utility asset inspections and Environmental Code Enforcement violation documentation.

The benefits of mobile GIS cannot be overstated. With the implementation of the GIS Enterprise System, and its mobile application benefits, the need to create individual map books for infrastructure location and inspection has been eliminated. This includes the added benefit of reallocating an estimated 40 hours of valuable GIS time annually, as well as reducing inspection time in the field by half. Also, thousands of hand written inspection notes, entered into the map book log sheets, no longer need to be manually entered into the GIS system. Not only does this eliminate an entire step in the GIS data collection process, it also reallocates an estimated 160 hours of GIS time annually.

The ENV/PW Department had the added requirement to protect sensitive data. The GIS Enterprise System provides a way to secure the feature service data through individual log-ins with assigned private groups and privileges through ArcGIS Online. Utilizing database versioning, field crews can edit, create, or delete structures in the field without affecting the default database version. Through a quality control process, a GIS Analyst can review all changes made in the field and post approved changes to the default version.

Through ArcCollector, new structures located in the field can be easily added into GIS. With the aid of attribute fields and drop down menus, field crews are better equipped to provide the required asset attribute information. This process is far superior in accuracy than the previous strategy of hand written maps with limited asset information.
The implementation of Survey123 into our GIS Enterprise System provided the City of Roswell the ability to replace paper inspection forms with an efficient, organized and environmentally friendly option that could connect to GIS. Not only has Survey123 provided inspection and incident accountability, it also provides a means to analyze data and create reports based on specific attribute information. To increase the efficiency in the inspection process, ArcCollector was connected to Survey123 with a “user friendly” link accessed through ArcCollector in the structure’s attribute details. This user friendly interface connection is an added benefit for crew members with non-technical backgrounds.

Both ArcCollector and Survey123 have the benefit of attaching photos to asset structures or environmental code violation incidents. This has been a great asset to the ENV/PW Department for providing both legal documentation of an environmental code violation, and for documenting physical changes to asset structures over time.

The City of Roswell’s Stormwater Utility Division has benefitted greatly from the implementation of the GIS Enterprise System. ArcCollector and Survey123 have been highly successful for collecting, inspecting, maintaining and reporting on the Stormwater Utility infrastructure inventory, in compliance with Georgia EPD MS4 NPDES annual permit reporting requirements.

On December 6, 2016, the Stormwater Utility Division was selected for an audit of their annual MS4 Permit Compliance report. During this audit, the EPD and EPA representatives were given a detailed tour of the MS4 inspection data contained in GIS. They showed special interest in how the inspection data was collected in the field with the ArcCollector App, and how the QA/QC process of versioning was conducted and the querying capabilities of the GIS Enterprise System based on specific attributes. They were very impressed with the amount of detailed information contained and updated in the GIS regarding the MS4 inspection data. Much emphasis is placed on inspecting 20% of the Stormwater system every 5 years. With the GIS Enterprise System, exact Stormwater structure numbers and locations can be determined, as well as dates and times specific to individual structure inspections. Real-time mobile access to GIS Stormwater infrastructure inspection data is critical for ensuring accountability in the MS4 permitting process.

Finally, the addition of the GIS Enterprise System has also included the benefit of Dashboards and Story Maps. Most of Roswell’s Directors and senior management do not use GIS Desktop and rarely use ArcCollector. Creating GIS Dashboards, with shortcuts placed on their desktops, has created a way for management to have access to critical infrastructure data at a glance. This has greatly reduced the number of requests for infrastructure updates and reports. With the GIS Enterprise System, the GIS data updates on their Dashboards automatically providing key personnel with real-time information.
In conclusion, the implementation of Roswell’s GIS Enterprise System has completely changed and improved the way the ENV/PW Department maintains and manages its GIS infrastructure data. Without the implementation of the GIS Enterprise System, the goals for mobile access and real time data reporting would not be possible. It’s gone from manual, often inaccurate, and time consuming GIS data entry to a seamless workflow.

Sincerely,

[Signature]

Nancy Velez, MGIS, GISP
GIS Analyst
Environmental/Public Works Department
City of Roswell

38 Hill Street, Roswell, GA 30075
www.roswellgov.com
May 24th, 2019

To whom it may concern:

My name is Taylor Smith, and I work for the City of Roswell’s Recreation, Parks, Historic and Cultural Affairs Department. In 2017 our department won the NRPA’s Gold Medal Award for the Best Recreation and Park’s Department in the Country. Our department takes a lot of pride in being efficient and cutting edge in our field of work. One of the keys to our success, is managing all of our assets that are scattered over a thousand acres of park land. In order to be effective and organized, we rely heavily on GIS technology.

Our GIS system, and support staff associated with GIS, have been vital to our success. The ability to track our equipment and infrastructure out in the field, with real time updates, has been an important tool for our park staff when time is limited and extremely valuable. With so many parks and acres of land, the old way of record keeping was overwhelming. Now, with our collector app, our staff can install new equipment, and immediately update our system, without information being lost or forgotten.

One of our most recent additions to GIS is the Workforce Application. Through the implementation of the new app we have seamlessly overseen, tracked and scheduled over 50 fulltime staff member’s daily operations, special projects and routine tasks. The old way of handling these items were done on whiteboards, post-it notes or emails, which was ineffective and easily lost. Workforce has been an extremely useful tool in staying organized and making sure our projects, tasks, and routine items do not slip thru the cracks. Workforce allows our supervisors the opportunity to manage tasks based on level of importance and location of their crews; which we have found to be invaluable.

In closing, the Roswell Recreation, Parks, Historic and Cultural Affairs Department attributes much of our success to the organization that GIS technology has provided our department, staff, and citizens.

Sincerely,

Taylor D. Smith
City of Roswell
Project Coordinator
tsmith@roswellgov.com

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B. JURISDICTION

1. Name of Jurisdiction

City of Roswell, Georgia

2. Population Served by the Organization/Agency

94,239 (2017 Census Estimate)

3. Annual Total Budget for Jurisdiction

$144,030,521 (All Funds – FY2019)

4. Name, Title, Address of Chief Elected/Appointed Official

Lori Henry; Mayor; 38 Hill Street, Roswell, Georgia 30075

5. Name, Title, Address, Telephone, Fax & Email Contact Person for System

Patrick Baber; GIS Manager; 38 Hill Street Suite G-30, Roswell, Georgia 30075; 770.594.6270(p); 770.641.3741(f); pbaber@roswellgov.com
1. What motivated the system development?

The distressing results of the Strategic Assessment performed by GTG identified and prompted the need for change. Roswell’s GIS was underutilized, and far behind cities of comparable size with respect to GIS governance, data & databases, procedures & workflows, software, training & education, and IT infrastructure. The results also highlighted the benefits of a more capable GIS to both citizens and employees of the City of Roswell. Decision makers and elected officials were motivated to invest in an aggressive modernization of Roswell’s GIS. The result was the development and deployment of the 3-year Strategic Implementation Plan which provided a road map to achieving realistic and prioritized goals that would address the deficiencies identified by the Assessment.

2. What specific service or services was the system intended to improve?

The scope of the project was ambitious, as the 3-year Implementation Plan called for providing new GIS tools and applications to numerous City Departments, strengthening the back-end GIS infrastructure, and providing easy GIS access for the public. The following is a list of services most benefited by the system:

**Park Maintenance** – Roswell is well known for its parks, having recently been awarded the Gold Medal for Excellence by the American Academy for Park & Recreation Administration. The scope of the 3-year plan included deploying a suite of new GIS tools and applications, allowing field crews to send & receive work orders, update asset conditions & locations, and view maintenance records.
Water System Maintenance – Mobile access to GIS has enabled work teams to visualize the public water network while in the field. Maintenance and repair records are now instantly available through GIS, which is also tied into the inventory control system, insuring that additional materials are ordered as needed.

Public Engagement – The City can now engage with its citizenry in exciting new ways. Through GIS-powered narratives and dynamic online mapping, Roswell residents can access a host of new tools and informative websites. Whether learning more about their neighborhood, reporting a concern, or finding parking near Roswell's popular attractions, the public is empowered in ways not possible without GIS.

3. What, if any, unexpected benefits did you achieve?

As mentioned above, Roswell recently received the Gold Medal for Excellence by the American Academy for Park & Recreation Administration. For several years, Roswell received the Silver Medal, one of the identified separators being “use of technology” by the Recreation & Parks Department. The wide-spread adoption of GIS, from use by field crews to public-facing interactive GIS web apps, was a factor in Roswell finally receiving the prestigious Gold Medal. Additionally, the City had several redundant data layers. Often, these redundant layers were siloed in disparate locations throughout the organization. This resulted in confusion regarding the vintage and authority when analysis was needed. Through the implementation of the 3-year plan, these redundant data layers were identified and reconciled. Alternate versions were deleted, and the authoritative data layers were placed in a centralized and accessible location.

4. What system design problems were encountered?

Changing from an environment where GIS data was maintained in shapefiles and file geodatabases to a true enterprise environment where data is stored in Microsoft SQL Server required training and education within the GIS and IT Departments. Although more control of permissions and data access are now in place, it did not come without learning curves. An understanding of how Esri and Microsoft SQL Server work together and how best to manage access for numerous users through groups and Active Directory logins had to be attained.
Beyond data maintenance and access, specific REST services had to be made publically available, but others needed to be secured organizationally and departmentally. To accomplish this, a web server was setup with Esri’s web adaptor, which points back to the internal ArcGIS Server instance. Esri security within ArcGIS Server was then leveraged to manage user access and permissions based on Active Directory logins. This new level of access and permission management, both from the data and REST service perspectives, required GIS and IT staff to work through requirements for end-users and applications.

5. What differentiates this system from other similar systems?

Similar systems operate in a silo, not truly connecting each department’s GIS operations. The City’s enterprise GIS is a true enterprise system in that all departmental data is centrally stored within a standardized data model (Esri’s Local Government Information Model) that has been customized for the City of Roswell when and where necessary. Users from Community Development, Environmental / Public Works, Recreation & Parks, and Transportation departments connect to the enterprise geodatabase to view, edit, and analyze information not only specific to their department but from other departments as well. Additionally, the enterprise GIS does not focus only on vector and raster data that is created within GIS itself, but from other enterprise systems as well. For example, data is pulled out of SeeClickFix (citizen requests), OSSI, and RecTrac (Parks and Recreation user management) and placed within GIS. This allows data from additional systems to
be compared against GIS data to reach conclusions such as citizen request hot spots, predictive crime analysis, or where new parks or recreation programs should be placed to draw in additional members. It is not uncommon for a system of this scope and breadth to spend the better part of a decade in development, but Roswell's three year growth tells a different story. The City now truly has an enterprise GIS system, and even more advancements are on the horizon.
D. IMPLEMENTATION

1. What phases did you go through in developing the system?

GTG was hired to perform a system architecture design. The design was created after performing needs assessments with each department across the organization and identifying their current and future GIS needs. Based on this assessment, GTG recommended a system architecture to support GIS operations for three to five years. Following the design phase, the IT Department assisted in building out three production servers, one for the database, one for the applications, and one for the web/public-facing content. Once the servers were configured, GTG deployed Microsoft SQL Server, ArcGIS Server, Esri’s Web Adaptor, and Esri’s Web AppBuilder Developer Edition. After the software was deployed and properly communicating between servers, data was loaded into an enterprise geodatabase and testing began. Following a successful testing phase, initial departments were brought onboard and given appropriate access. Over time, more and more departments were given access to various database connections and applications based on specific needs.

2. Were there any modifications to the original system design? Why? What?

The original design of three servers to support GIS is still in production. The changes that have been made were primarily related to server sizing. As the needs of the database, application, and web servers have changed, the IT Department has increased resources for each accordingly. Having these servers built as virtual servers versus physical servers has allowed the necessary scalability to support the growing demands placed on the infrastructure.
1. What user community does the system serve and how?

Roswell's GIS serves all Departments: Administration, Community Development, Environmental / Public Works, Finance, Fire, Police, Recreation & Parks, and Transportation. In addition to these internal services, Roswell's GIS also serves the public through a variety of online tools and applications. The goal of Roswell's GIS is to make Roswell more efficient as an organization, and more transparent as a local government. Each of the numerous initiatives undertaken by the 3-year Strategic Implementation Plan conforms to this goal in one or more ways, and was often times client/customer-driven in scope.
2. What are the ultimate decisions/operations/services being affected? If appropriate, provide a few examples including, but not limited to: screen input/output forms, paper products, or other descriptive graphics.

The decisions, operations, and services being affected by Roswell's GIS are numerous. As mentioned, all Departments and almost all Divisions within the City use the GIS. No municipal function is more important than public safety. Roswell Police Department uses GIS to analyze crime patterns for predictive policing. The Recreation & Parks Department manages field assets and task orders through the enterprise GIS. The Environmental / Public Works Department issues citations, inspects field assets, tracks sanitation routes, and more through GIS. The Community Development Department relies on GIS for permitting and plan review, floodplain analysis. The input that GIS provides to the Community Development department helps shape the landscape of the City. Important public meetings also utilize GIS as a communications tool. Citizens receive and provide input through GIS applications. Online maps support a narrative and facilitate shared goals and visions.
3. What were the quantitative and qualitative impacts of the system?

The cumulative number of hours saved over legacy systems by the new Enterprise GIS System is a difficult metric to calculate. With so many staff members using the system for a myriad of tasks, it is a challenge to extrapolate exact figures. However, several quantitative ROIs have been documented. By receiving daily task assignments through GIS applications on mobile devices, and reporting completed activities via the same applications, Recreation and Parks field staff have reported an average time savings of 60 minutes per crewmember per day. On some crews, this equates to an extra FTE each year. Additionally, the need for large paper maps is eliminated, which demonstrates environmental stewardship. Roswell’s Fire Department services approximately 1,500 fire hydrants within city limits twice a year.
Using a purpose-built GIS application, field and office users save 2 minutes per hydrant. While this may seem modest, the cumulative effect is a time savings of 100 hours per year. This system replaced a manual reporting method prone to error and data omission. The Environmental / Public Works Department estimates that nearly 200 hours per year are saved by using GIS. These are just three of many examples of increased productivity.

In addition to the quantitative examples provided above, qualitative improvements have also been documented. Roswell's GIS previously relied on a suboptimal server configuration, which was prone to downtime, performance degradation, and elevated risk of data loss. As part of the 3-year Strategic Implementation Plan, Roswell deployed a modern, robust server cluster capable of delivering increased performance and reliability. Roswell's GIS is now more accessible than ever, allowing citizens to explore data regarding their community in modern, dynamic, relevant, and engaging ways. Considering that several deployed GIS tools/applications resulted from direct citizen input, the success is unsurprising. As before, these are just two examples of many positive impacts Roswell's GIS has had.
4. What effect has the system had on productivity?

City employees are saving hundreds of cumulative hours per year using the new GIS tools, compared to performing the same jobs using legacy systems. In addition to the time saved, the systems are easier to use and more reliable. The surplus hours reduce the need for hiring additional staff, and allow existing staff to complete additional tasks.

5. What, if any, other impacts has the system had?

In addition to supporting City staff perform their job duties, the enterprise GIS gives Roswell unprecedented communications tools to engage with the public. Replacing online static PDF maps with dynamic, multi-layer maps with focused content and supplemental in-app tools allows users to take control, explore, and engage with Roswell’s online GIS data. Frequently asked questions are now answered via online GIS applications. Story Maps proudly showcase initiatives using GIS maps and interactive data as they guide viewers through a narrative. The GIS also is useful in public meetings, either as a visual aid or an interactive tool to facilitate interaction between the City and its citizenry.
6. How did the system change the way business is conducted with and/or service delivered to clients? Give specific examples comparing the old way with the new.

Thanks to the current deployment of GIS tools and applications, and backed by improved back-end infrastructure, training, and data organization, Roswell's GIS is providing unprecedented support and transparency. Internal and external users, elected officials and policy-makers are empowered with accurate, relevant, and intuitive data and data products. Few City processes have not benefited by GIS. Public meetings, Mayor & Council meetings, permit reviews, maintenance operations, data visualization, data interoperability, planning, communication, public safety, and analysis are all performed in a more efficient, reliable, and transparent manner, just to name a few.
F. SYSTEM RESOURCES

1. What are the system’s primary hardware components? Give a brief list or description of the hardware configuration supporting the system?

There are three servers that support the organization’s enterprise GIS. A database server, application server, and web server. Each of these servers are virtual machines, allowing for the elasticity needed to upscale as demand and use continues to increase. More information about each server configuration is listed below:

- **Database Server**
  - Windows Server 2012 R2
  - 16GB RAM
  - Intel Xeon E5-2640 @ 2.5GHz (4 processors)
  - 100GB OS HDD and 2TB Data HDD

- **Application Server**
  - Windows Server 2012 R2
  - 32GB RAM
  - Intel Xeon E5-2640 @ 2.5GHz (6 processors)
  - 100GB OS HDD and 500GB Data HDD

- **Web Server**
  - Windows Server 2012 R2
  - 12GB RAM
  - Intel Xeon E5-2640 @ 2.5GHz (4 processors)
  - 100GB HDD
2. What are the system’s primary software components? Describe the primary software and, if a commercial package, any customizations required for the system.

- Database Server
  - Microsoft SQL Server 2012
  - Esri's ArcMap and ArcCatalog 10.3.1
- Application Server
  - Esri's ArcGIS Server 10.3.1
  - Esri's Web Adaptor 10.3.1
  - Esri's ArcMap and ArcCatalog 10.3.1
  - Esri's ArcGIS Pro 2.3.2
  - IIS 8
- Web Server
  - IIS 8

Customizations needed include the installation of custom widgets within Esri's Web AppBuilder on the web server to support integration with some of the enterprise IT systems mentioned previously. Also on the application server, Esri’s web adaptor was set up and configured to allow communication between the internal ArcGIS Server instance and the public via the web server. On the application server, custom scripts run to pull data from enterprise IT systems (OSSI, CAD, Munis, SeeClickFix, and RecTrac), migrate parcel data from the parcel editing feature dataset to the parcel publishing dataset each evening, and create a parcel vector tile package that is uploaded to ArcGIS Online each morning. This vector tile package has greatly improved the responsiveness and load time of the applications that include parcel data.
3. What data does the system work with? List and briefly describe the database(s).

All the GIS data is stored within Microsoft SQL Server as part of an enterprise geodatabase, licensed using ArcGIS Server. Data is stored within a customized version of Esri’s Local Government Information Model (LGIM). Data is pulled out of other enterprise IT systems (RecTrac, SeeClickFix, and OSSI) and converted into a GIS data layer. This data is also stored within the customized LGIM.

4. What staff resources were required to implement the system? (i.e., report approximate staff and consultant time as FTE’s)

Approximately 1 FTE was used over a four-day period from our organization.

Approximately 1 FTE was used over a 10-day period from GTG.

5. Comment on anything unusual about the resources used to develop your system, such as data, software, personnel and financing.

To improve workflows and save time, it was critical that the enterprise GIS automate certain functions. Specific parcel data, for instance, needed to be copied from the parcel editing feature dataset to the publication feature dataset. A script was developed to accomplish this task each night. It can be run manually during the day if the need arises. Similarly, there was a desire to improve the responsiveness of parcel data within the web applications. To accomplish this, a script was developed to create a vector tile package of the parcel data and upload it to ArcGIS Online each night. This has greatly improved the responsiveness of those applications. Also, each of the data extractions from the enterprise IT systems is automated to ensure the data is updated on a frequent basis. Having these tasks automated has saved time and ensures the most up-to-date data is available to end users that rely on it every day.