2020 URISA Exemplary Systems in Government Award Submission
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A. System

1.0 - Name and Category
PGAtlas - Enterprise Systems

2.0 - Letter from Executive Administrator

**THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION**

14741 Governor Oden Bowie Drive
Upper Marlboro, MD 20772
(301) 952-3595
www.pgplanning.org

April 21, 2020

Dear Selection Committee,

As the Planning Director for the Prince George’s Planning Department of the Maryland-National Capital Park & Planning Commission it is my pleasure to authorize the submission of PGAtlas for consideration in the 2020 URISA Exemplary Systems in Government Award.

Over the past 20 years, PGAtlas remains the ‘go to’ local government web site within Prince George’s County, Maryland. PGAtlas is used to support many Planning and Parks Department work programs as well as many government agencies and businesses. The web site remains the flagship web site for the Planning Department because PGAtlas is highly reliable and stable, user feedback guides future development, no cost training is offered and most importantly the web site ensures everyone accesses the same geographic information which reduces confusion and improves communication.

Planning staff rely on PGAtlas when reviewing development applications and forecasting development. Government agencies such as code enforcement officers and public safety personnel rely on PGAtlas to determine property ownership. Commercial land developers rely on PGAtlas to monitor the status of a development application and determine where land is suitable for development. Citizens rely on the web site to collect the required information to file a permit, receive development notifications and determine the extent of property lines and businesses use PGAtlas to produce mailing labels.

For these reasons, I wholeheartedly support this award submission.

Sincerely,

Andree Green Checkley, Esq.
Planning Director
3.0 - System Summary

PGAtlas.com (www.pgatlas.com) was developed in 1999 to reduce escalating GIS software costs in the Planning Department of Prince George’s County, Maryland. To maximize the staff’s acceptance of PGAtlas, the web site was designed to be a simple ‘point and click’ application that focused on providing information for the Planning Department work programs. In 2001, use of PGAtlas was expanded to the public after citizens observed staff interacting with the web site and requested access.

Over the past 20 years PGAtlas has evolved into a highly refined tool that continues to be enhanced by the Planning Department, which actively seeks user feedback to incorporate new functionality required by an expanding and diverse user group. PGAtlas has grown to become a known brand name of many interrelated PGAtlas tools that incorporate the original ‘point and click’ interface.

PGAtlas supports a wide range of local government and private sector needs. For example, the Planning Department staff relies on the web site to process permits and make subdivision development recommendations. PGAtlas is also used to notify citizens when a subdivision development application is submitted to the Planning Department for review. The business community uses PGAtlas to query and locate land for commercial and residential development, evaluate land environmental constraints, and create mailing labels. Real estate agents rely on PGAtlas to comply with woodland conservation notification requirements. University professors use PGAtlas to support their GIS curriculum. Religious leaders have even used PGAtlas to determine the correct placement of a church altar.

The web site PGAtlas is used throughout Prince George’s County, Maryland and beyond. The web site receives over 180,000 web hits annually and nearly 500 PGAtlas users are currently enrolled to receive weekly development notification emails.

4.0 - User Testimonials

See user testimonials on page 33.

B. Jurisdiction

1.0 - Jurisdiction Name

The Maryland-National Capital Park & Planning Commission, commonly known as ‘the Commission’, is a bi-county agency which administers the various Planning, Parks and Recreation Departments for both Prince George’s County, Maryland and Montgomery County, Maryland.

This award application represents the web site development by the Planning Department, Prince George’s County (see http://www.PGPlanning.org).

2.0 - Population Served by the Organization/Agency

Prince George’s County, Maryland
Population 909,327 (source: U. S. Census Bureau 2019)
3.0 - Jurisdiction Annual Total Budget
 Prince George’s County Planning Department
 $37,983,992 (adopted FY2020 budget)

4.0 - Chief Elected and/or Appointed Official
 Andree Green Checkley, Esq.
 Planning Director
 The Maryland-National Capital Park & Planning Department
 14741 Governor Oden Bowie Drive
 Upper Marlboro, Maryland 20772
 Andree.Checkley@ppd.mncppc.org

5.0 - System Contact Information
 Michael Shean, GISP
 GIS Supervisor
 14741 Governor Oden Bowie Drive
 Upper Marlboro, Maryland 20772
 Mike.Shean@ppd.mncppc.org

C. System Design

1.0 - What motivated the system development?
The primary motivation for developing PGAtlas was to expand access to geographic information
and to reduce the cost of purchasing and supporting GIS software across the Planning
Department.

The Planning Department historically had relied on cartographers manually updating Mylar maps
(see Image 1 - Mylar Map Example).
In 1993, the Planning Department began migrating its internal drafting work program over to the new GIS technology. Over the next eight years, 2,640 Mylar property and zoning maps were converted to digital map layers and staff was trained to maintain the information within GIS.

Initially twenty-one (21) Esri Arc/Info licenses and ten (10) ArcView 3.1 licenses were purchased to meet the needs of the Planning Department. However, costs escalated as staff began to fully embrace GIS technology. In 1999, the Planning Department purchased an additional one hundred and fifty (150) ArcView 3.2 licenses to meet internal demand for the software.

The escalating demand to acquire future GIS software licenses was found to be fiscally unsustainable (see Table 1 - 1999 Software License Costs), especially when the costs for hardware, training, annual software maintenance and installation were also considered. It was determined that an alternative approach needed to be developed to support the use of GIS technology by planning staff but at a lower cost.

<table>
<thead>
<tr>
<th>Software</th>
<th># Licenses</th>
<th>Cost per license</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arc/Info</td>
<td>21</td>
<td>$10,000</td>
<td>$210,000</td>
</tr>
<tr>
<td>ArcView</td>
<td>160</td>
<td>$1,200</td>
<td>$192,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>171</strong></td>
<td><strong>$11,200</strong></td>
<td><strong>$402,000</strong></td>
</tr>
</tbody>
</table>

Table 1 - 1999 Software License Costs
2.0 - What specific service or services were the system intended to improve?
PGAtlas was developed so that Planning Department staff could gain access to geographic information from their existing web browser at a lower cost compared to the previous process of purchasing additional software licenses and costly hardware. In addition, staff believed a simple interface would reduce the need for training, technical support and the demand for custom map and data requests, thereby also lowering costs.

The original core of PGAtlas was the internet web site application Arc Internet Map Service (ArcIMS), released by Esri in June 2000. ArcIMS allowed users to access GIS data from a web browser. In the fall of 2000 the Planning Department began developing an ArcIMS web site prototype.

In December 20000, the first ArcIMS prototype web site was released to the staff. It was named Property Query (see Image 2 - Property Query Interface Version 1).

PGAtlas went live to the public in January 2001. New users provided valuable feedback from the start, resulting in the continual evolution of PGAtlas beyond its original purpose of serving only Planning staff (Image 3 - PGAtlas Interface Version 2) to become a valuable resource for the community and beyond.

3.0 - What, if any, unexpected benefits did you achieve?
Over the past twenty (20) years PGAtlas has significantly expanded from a simple Planning Department ‘point and click’ web site for internal staff to an external facing business and multi-government agency tool supported by significant public outreach by the Planning Department and collaboration with the business community.
It was unforeseen that the external business community would become a pivotal factor in shaping the development of PGAtlas as they sought to benefit from its capabilities. In fact, the majority of the new PGAtlas tools have been developed in response to public feedback, thereby directly providing increasing benefits to the public. By responding to the business community, PGAtlas has become a popular tool used by a wide range of users and resulted in even more web hits as businesses began embedding PGAtlas into their business models. The impact of PGAtlas has reached well beyond its original scope.

Listed below are some examples of unexpected benefits derived from PGAtlas:

- Commercial land developers query PGAtlas to locate land suitable for development (see Appendix 2 - PGAtlas Tax Assessment Query Interface).
- Users create premise and owner address mailing labels within PGAtlas (see Appendix 4 - PGAtlas Mailing Label Interface).
- Real estate agents in the community access PGAtlas to comply with Woodland Conservation legal notifications (see Appendix 5 - PGAtlas Woodland Conservation Interface).
- Historic preservationists relied on PGAtlas historic aerial imagery to locate an undocumented slave cemetery (see Appendix 6 - PGAtlas Historic Aerial Imagery Interface).
- Government Agencies are willing to share their datasets if PGAtlas displays their information.
- University of Maryland professors rely on PGAtlas to support final exams.
- Legislative staff use PGAtlas to create public policy.
- PGAtlas is referenced within engineering subdivision plats (see Appendix 13 - PGAtlas Plat Reference).
- Police vehicles use PGAtlas to support public safety.
- Park Rangers rely on PGAtlas to determine land ownership in relationship to flooding damage caused by beavers.
- Zoning code enforcement officers use PGAtlas to issue violations.
- Landowners use PGAtlas to comply with legal requirements for deer stand placements.
- Religious leaders use PGAtlas to calculate the coordinates for altar placement during construction of religious buildings.
- Professional surveyors forward legal documents to improve the accuracy of PGAtlas property boundaries.

4.0 - What system design problems were encountered?

An initial challenge was ensuring that the web site could meet demand growth from the public. Initial estimates of that demand indicated that the existing web site was sufficient prior to the PGAtlas public release in January 2001 (see Image 3 - PGAtlas Interface Version 2).
However, those preliminary estimates for public demand proved far too low. User acceptance was immediate, and usage exceeded all expectations during the first 5 years of PGAtlas (see Chart 1 - PGAtlas External Web Hits). The high usage rate required the purchase of additional hardware and bandwidth.
Other system design problems emerged via public feedback. For example, PGAtlas did not comply with the American Disability Act (ADA). Implementing the required was initially challenge as the GIS development staff were unfamiliar with ADA guidelines. However, the compliance modifications were implemented by November 2003. Key changes included providing increased visual contrast, and the establishment of a minimum font size throughout the entire web site for easier reading (see Image 4 - PGAtlas ADA Compliant Interface Version 3).

Public users also reported that they were not satisfied with being required to use Internet Explorer to access PGAtlas. PGAtlas was originally developed using Microsoft Internet Explorer since it was the Commission’s enterprise web browser standard. However, some external users wanted to use a competing web browsers (i.e. Chrome, Firefox, and Safari) to access PGAtlas. Note that PGAtlas could display on other web browsers but users would typically encounter performance problems. Also, the number of performance problems would increase as each browser released a software update. This design issue had been identified upfront but was considered an acceptable limiting factor.

A separate but related designed problem occurred June 2003 when Microsoft announced that further development of Internet Explorer for Macintosh would cease (see tinyurl.com/rtzvcn2).

The PGAtlas user interface was redesigned December 2011 using Microsoft Silverlight, which represented a significant development effort. Not only did the enhancements address user
feedback to further simplify the PGAtlas user interface, but the redesign also allowed all web browsers to access PGAtlas (see Image 5 - PGAtlas Silverlight Interface Version 4).

Unfortunately, the benefits of the December 2011 redesign proved to be short lived because Microsoft terminated Silverlight for HTML5 in Windows 8 (see tinyurl.com/7ls6ljq). The loss of Silverlight support required PGAtlas to be redesigned once again. In October 2015, the current version of PGAtlas (HTML5 and Javascript) was released to the public using HTML5 which eliminated all known browser access problems (see Appendix 1 - Current PGAtlas Interface).

Finally, an additional system design issue became evident as the number of enhancement requests from users increased over time. Desired changes, although individually having merit, often conflicted with the original PGAtlas ‘point and click’ interface. Ultimately, PGAtlas was modified to support many of the requested enhancements, but these changes required the web site design to expand into many interrelated web site applications. Still, any changes to the original ‘point and click’ design was intentionally minimized to keep the system easy to use.

As the web site’s complexity increased it became evident that user training was needed on a regular basis. Training has become a central component for the ongoing success of PGAtlas. For example, in 2019 alone, Planning Department staff conducted 13 formal PGAtlas training classes lasting 3 hours each. Each class requires at least 15 students before a class is scheduled and class sizes have been as large as 100 students. Most classes are held in Commission offices, but staff have also traveled to user sites such as at the place of business.

Developing and operating a formal training program requires additional resources and time from Planning Department staff, but is well worth the investment. It has proven beneficial not only to the public but also to the Commission. Most notably, GIS staff can observe user interaction with PGAtlas and obtain valuable feedback from them, which results in further enhancements and
functionality. Also, ongoing working relationships also were built with external users which have improved community relations and increased the popularity and awareness of PGAtlas.

5.0 - What differentiates this system from other similar systems?
PGAtlas is different because it satisfies such a wide range of public and private sector uses. PGAtlas has been developed and designed with the support of over twenty years of user feedback, resulting in a highly customized and sophisticated GIS web site. Even as other programs advance, PGAtlas still remains one of the most capable and comprehensive local government GIS web sites in the United States. PGAtlas has evolved to become such a highly valued and comprehensive information portal that government agencies and businesses have developed their own unique business models around PGAtlas making it essential to their own work.

Below are examples of how PGAtlas is being used that differentiates it from other systems:

- **Prince George’s County Government Agencies** - Prince George’s County government agencies rely on PGAtlas to support various work programs. For example, the Department of Permit Inspection and Enforcement (DPIE) uses PGAtlas to process permits and issue violations, police officers access PGAtlas directly from police vehicles to support public safety by accessing oblique imagery and property ownership, the Department of the Environment (DOE) relies on PGAtlas to calculate impervious surface tax, and the Department of Health utilizes PGAtlas to support health inspection logistics.

- **Washington Suburban Sanitary Commission (WSSC)** - WSSC’s mission is to provide and manage water and sewer service for both Prince George’s County and Montgomery County, Maryland. WSSC staff rely on PGAtlas map services to examine property lines, locate addresses and overlay water and sewer lines.

- **Commercial Development** - Businesses rely on PGAtlas to determine land development suitability and marketability by accessing severe slopes, topography, floodplain, wetlands, zoning, etc. (see Appendix 2 - PGAtlas Tax Assessment Query Interface).

- **Real Estate** - Agents rely on PGAtlas to determine if a woodland conservation plan exists on a property. This is necessary because in Prince George’s County the seller of a property is required to notify the potential buyer of a property if a woodland conservation plan exists on the property. A PGAtlas tool was developed to provide this information to real estate agents (see Appendix 5 - PGAtlas Woodland Conservation Interface).

- **State of Maryland Department of Assessment and Taxation (SDAT)** - The Prince George’s County office of the SDAT relies on PGAtlas to locate a parcel by tax account, address or owner name and conducts research such as examining adjoining property owners and validating the zoning of the property.

- **Development Notification** - Citizens can enroll to receive a PGAtlas email notification when a subdivision development application is submitted to the Planning Department (see Image 6 - Development Notification (see tinyurl.com/pgbiwebstats) | Appendix 12 - PGAtlas Development Notification Interface (see notify.pgatlas.com)).
• **Data Download** - PGAtlas users can download datasets at no cost. Since 2017 over 83,000 GIS datasets have been downloaded (see Image 7 - GIS Data Downloads [tinyurl.com/pgbiwebstats]).

![Image 6 - Development Notification](image6.png)

![Image 7 - GIS Data Downloads](image7.png)

• **Map Services** - PGAtlas users can access any of the 240 PGAtlas map layers by accessing the Esri map service (see gis.pgatlas.com/pgatlas/rest/services).

Unique tools within PGAtlas provide the following capabilities:

• Query and display over 299,055 parcels and 300,776 tax records where each parcel shape is linked by a many to many database relationship that allows users to access every tax account related to a parcel. This is a significant accomplishment since it is uncommon for property web sites to display multiple tax accounts that are related to one property.

• Display the Maryland State Archives (MSA) Plats.net digital archive of subdivision plats and the State of Maryland Department Assessments and Taxation (SDAT) data within PGAtlas (see Appendix 8 - PGAtlas Maryland State Archives (Plats.net) Interface | Appendix 2 - PGAtlas Tax Assessment Query Interface).

• Forward a map URL link from a user defined map extent and map layers to anyone.

• Examine urban sprawl by reviewing 17 years of countywide historic aerial imagery beginning in 1938 (see Appendix 6 - PGAtlas Historic Aerial Imagery Interface).

• Query and produce mailing labels for both owner and premise addresses (see Appendix 4 - PGAtlas Mailing Label Interface).

• Notify users when a subdivision application is submitted to the Planning Department (see Appendix 12 - PGAtlas Development Notification Interface).

• Save the map extent, visible map layers and user created graphics to a user profile.

• Access a mobile version of PGAtlas (see mobile.pgatlas.com).

• Link Microsoft BI dashboard to PGAtlas (see Appendix 14 - PGAtlas Dashboard Link Interface | tinyurl.com/y6r3lbzr).

• Access all data, programming code and software managed on the Amazon (AWS) cloud.

• Display Google Street View within the PGAtlas data extract results (see Appendix 7 - PGAtlas Google Street View Interface).
• Display EagleView imagery within PGAtlas which allows a user to view a premise address from oblique angles (see Appendix 9 - PGAtlas Eagleview (Pictometry) Imagery Interface).

PGAtlas also differs from other similar web site applications as it is supported by a formal training program which allows users to attend three hours of no cost training or view training videos at no cost (see pgatlas.com/help.aspx).

### D. Implementation

1.0 - What phases did you go through in developing the system?

There have been three distinct development phases.

Phase I would be prior to 1999, when fewer than 20 Planning Department staff members had access to Esri applications (i.e. UNIX Arc/Info 7.2 | ArcView 3.1). Most staff relied on an ArcView map template (AVWIZ.apr) to easily extract information and produce maps.

Phase II began in 2000 when an ArcIMS web site application development began that would replace the ArcView map template. The application was released to Planning Department staff in fall 2000 and the web site was renamed from Property Query to PGAtlas.

Phase III is the continued application development since 2000, which continues today. Staff demanded new functionality and external users provided additional input, requiring redesigns of the system in 2011 and 2015, followed by further enhancements.

2.0 - Were there any modifications to the original system design? Why? What?

Several material modifications have been implemented since the initial launch of the web site in fall 2000, highlighted by the public gaining access in November 2001. At that time, the web site was formally named PGAtlas (see Image 3 - PGAtlas Interface Version 2).

Another significant modification making PGAtlas compliant with Americans Disability Act (ADA), a significant project that took 35 months to complete and launch (see Image 4 - PGAtlas ADA Compliant Interface Version 3).

Feedback resulted in further significant redesigns released in 2011 and 2015 including using HTML5 to eliminate browser access problems (see Image 5 - PGAtlas Silverlight Interface Version 4 | Appendix 1 - PGAtlas Interface).

The most recent modification involved moving the PGAtlas datasets and map services to the Amazon cloud. This effort was completed in 2019 and has improved application performance and availability.
E. Organizational Impact

1.0 - What user community does the system serve and how?
PGAtlas supports commercial, government and public communities (i.e. see examples p.8). Notably, PGAtlas map services are accessible to everyone (see gis.pgatlas.com/pgatlas/rest/services).

As of February 2020, PGAtlas users had created 2,262 optional user profiles. The commercial sector represents 86% of all users and the government sector represents 10%.

2.0 - What are the ultimate decisions/operations/services being affected?
PGAtlas supports:
- Planning Department staff to manage development activity decisions.
- Legislative staff to create public policy.
- Police officers to verify property ownership from their vehicle.
- DPIE to process building permits.
- Real Estate agents to comply with legal notification requirements.
- Land developers to locate developable land.

3.0 - What were the quantitative and qualitative impacts of the system?
Measurable 2019 PGAtlas impacts are listed below:
- PGAtlas users generated 189,444 web hits.
- 494 citizens received weekly PGAtlas Development Notification emails (see Image 6 - Development Notification (see tinyurl.com/pgbiwebstats) | Appendix 12 - PGAtlas Development Notification Interface (see notify.pgatlas.com)).
- Planning staff processed 14,792 permits using PGAtlas.
- There were 2,219 optional user profiles at the end on 2019.
- 150 students received 3 hours of formal PGAtlas training at no cost.
- PGAtlas users downloaded 31,129 GIS datasets (see GIS Data Downloads tinyurl.com/pgbiwebstats).

4.0 - What effect has the system had on productivity?
Centralizing all Prince George’s County geographic information within PGAtlas has streamlined business workflows by ensuring users makes decisions based on the same dataset, thereby reducing errors and redundancy. The transition from relying on Mylar maps to GIS and displaying the digital maps to the public allows staff to respond more quickly to information requests and with greater accuracy. Since external users have access to PGAtlas, staff are able discuss the request with the customer by accessing the same information reducing confusion and conflict.

The number of Prince George’s County Planning Department staff that have access to internal geographic information (pre-PGAtlas) has increased from 21 in 1999 to 183 in 2020. However,
with PGAtlas accessible on the internet, all 7,200 Commission employees have access to the website. This increase allows staff to locate and extract information without assistance.

PGAtlas has improved communication between the government agencies and especially the business community. Significant staff resources have been directed to other purposes, as the time spent answering questions, processing payments, and printing maps for the public has greatly decreased. The public is now able to address most of its information needs directly via PGAtlas.

5.0 - What, if any, other impacts has the system had?
PGAtlas has impacted the Commission, government agencies, the business community and citizens as follows:

- Relying on one central PGAtlas interface ensures all parties access the same information, minimizing confusion and conflict.
- Embedding external data sources within PGAtlas such as SDAT, MSA, Google StreetView and Pictometry reduces the need for users to visit other external web pages.
- Businesses are embedding PGAtlas map services into their business models to ensure they are accessing the same information as government agencies.
- Citizens accessing PGAtlas at no cost has become a well-known public service offered by the Commission.

6.0 - How did the system change the way business is conducted with and/or services delivered to clients?
PGAtlas has revolutionized how business is conducted within the Planning Department and related government agencies as well as in the surrounding business community over the last 20 years.

As aforementioned, geographic information was previously maintained on Mylar sheets and archived on microfiche. Most edits were made to a master Mylar set, copies were produced and distributed throughout the Planning Department. This workflow was time consuming and staff rarely had easy access to the most current information.

Once the Mylar maps were converted to GIS, PGAtlas became the central hub for geospatial information within the Planning Department. Today GIS edits are accessible to staff on PGAtlas within 24 hours. PGAtlas is used daily to meet a growing need for accurate and timely information and, unlike the past, PGAtlas allows staff to review geospatial information from external datasets.

For example, staff rely on PGAtlas to:

- Verify premise address, zoning, floodplain, severe slopes, contours, etc.
- Extract historical subdivision development information.
- Generate mailing labels for a specific area (see Appendix 4 - PGAtlas Mailing Label Interface).
• Access other government agency datasets that were previously unavailable before PGAtlas.

PGAtlas has also been embedded into commercial business models:
• Locate land suitable for development - i.e. land developers can query and locate undeveloped land where the tax assessed improvement value is < $15,000, between 50 - 100 acres in size, and is commercially zoned (see Appendix 2 - Tax Assessment Query Interface).
• Input environmental constraints - PGAtlas includes floodplains, unstable sub soil, severe slopes, accessibility to water, sewer infrastructure and transportation networks.
• Comply with legal requirements - i.e. real estate agents rely on PGAtlas to comply with legal requirements requiring sellers to notify buyers when a woodland conservation exists on a property (see Appendix 5 - PGAtlas Woodland Conservation Interface).
• Determine which subdivision development case will be discussed at Planning Board meetings (Appendix 10 - PGAtlas Planning Board Schedule Interface).
• Access development review staff reports, Planning Board resolutions, Planning Board PowerPoint presentation, Zoning Hearing Examiner decisions, Tree Conservation Plans, Preliminary Plans and Mandatory Referrals.

For a more detailed explanation, see section C. System Design.

F. System Resources

1.0 - What are the system’s primary hardware components?
PGAtlas.com utilizes a multi-tier server environment to support application hosting with the following hardware specifications (see Table 2 - Hardware Specifications).

<table>
<thead>
<tr>
<th>Server</th>
<th>Specifications</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Server (DMZ)</td>
<td>• 4 CPUs</td>
<td>• Windows Server 2012</td>
</tr>
<tr>
<td></td>
<td>• 16 GB RAM</td>
<td>• Internet Information Server 8.0</td>
</tr>
<tr>
<td></td>
<td>• 500 GB Storage</td>
<td></td>
</tr>
<tr>
<td>ArcGIS Server and</td>
<td>• 8 Virtual Cores</td>
<td>• Windows Server 2016</td>
</tr>
<tr>
<td>Image Server (DMZ)</td>
<td>• 32 GB RAM</td>
<td>• Esri ArcGIS Server 10.5</td>
</tr>
<tr>
<td></td>
<td>• 4 TB Storage</td>
<td>• Esri ArcGIS Image Server 10.5</td>
</tr>
<tr>
<td>Database Server (Internal</td>
<td>• 4 CPUs</td>
<td>• Windows Server 2016</td>
</tr>
<tr>
<td>Network)</td>
<td>• 16 GB RAM</td>
<td>• Oracle 12c</td>
</tr>
<tr>
<td></td>
<td>• 1 TB Storage</td>
<td>• Esri ArcSDE 10.5.1</td>
</tr>
</tbody>
</table>

Table 2 - Hardware Specifications
PGAtlas is hosted in Amazon’s AWS cloud hosting environment. The diagram below illustrates the PGAtlas.com hardware architecture within the production hosting environment (see Image 8 - Production Hosting Environment).

![Image 8 - Production Hosting Environment]

2.0 - What are the system’s primary components?
PGAtlas.com is a web-based application utilizing 3-tier architecture of a web-based user interface, GIS services and supporting database that employ the following primary technologies (see Table 3 - 3 - Tier Architecture):

<table>
<thead>
<tr>
<th>System Component</th>
<th>Technology</th>
</tr>
</thead>
</table>
| User Interface   | • .NET Framework  
|                  | • HTML  
|                  | • Esri JavaScript API  
|                  | • JavaScript  
|                  | • jQuery  
|                  | • AngularJS  
|                  | • Bootstrap  |
| GIS Services     | • ArcGIS Server 10.5.1  
|                  | • ArcGIS Server Image Extension 10.5  |
| Database         | • Oracle 12c (12.2)  
|                  | • ArcSDE 10.5.1  |

Table 3 - 3 - Tier Architecture
3.0 - What data does the system work with?
PGAtlas connects with the below databases:
- Commission Map Services provides the public access to over 240 geospatial datasets. Users can access the same data displayed on PGAtlas (i.e. development activities, property, zoning, environmental, historic aerial imagery, etc.
- SDAT assessment database.
- MSA Plats.net database.
- Google Street View database.
- Bing maps.
- Pictometry imagery for Prince George’s County.
- Amazon S3 bucket.
- Microsoft BI dashboard (see Appendix 14 - PGAtlas Dashboard Link Interface | tinyurl.com/y6r3lbzr).
- Documentation (PDF) - PGAtlas provides access to development case documentation (see Appendix 11 - PGAtlas Subdivision Development Document Interface).

4.0 - What staff resources were required to implement the system?
Current PGAtlas development staffing requirements:
- 1 Senior Web Developer
- 1 Mid Web Developer
- ½ Oracle Database Developer
- 1 GIS Developer
- ½ Business Analyst

5.0 - Comment on anything unusual about the resources used to develop your system, such as data, software, personnel and financing.
Two versions of PGAtlas are maintained by the Planning Department (PPD-Atlas | PGAtlas.com). An internal version of PGAtlas (PPD-Atlas) is maintained in the Planning Department and is only accessible on the Commission network. PGAtlas.com is maintained on AWS. Access to both versions of PGAtlas is necessary to ensure internal Commission business is not interrupted due an ISP loss of service. Also, staff receive more frequent data updates and sensitive datasets can be accessed on the internal version of PGAtlas.
Appendix 1 - PGAtlas Interface
Appendix 2 - PGAtlas Tax Assessment Query Interface
Appendix 3 - PGAtlas Subdivision Development Search Interface
Appendix 4 - PGAtlas Mailing Label Interface
Appendix 5 - PGAtlas Woodland Conservation Interface
Appendix 6 - PGAtlas Historic Aerial Imagery Interface
Appendix 7 - PGAtlas Google Street View Interface
Appendix 8 - PGAtlas Maryland State Archives (Plats.net) Interface
Appendix 9 - PGAtlas Eagleview (Pictometry) Imagery Interface
Appendix 10 - PGAtlas Planning Board Schedule Interface
Appendix 11 - PGAtlas Subdivision Development Document Interface
**Appendix 12 - PGAtlas Development Notification Interface**

The Prince George’s County Planning Department is responsible for the receipt and processing of development application as required by the Prince George’s County Zoning Code of Ordinances. This website is designed to notify citizens when a development application is submitted for review and consideration by the Prince George’s County Planning Department. Users will be notified weekly via email of any new development application based on the development geographic location within a specific zip code. The notification email will include a development case summary as well as a link to a map outlining the location of the proposed development. The email will contain submitted development applications.

Click here to review an example email.

To begin receiving a notification you must first login. You can create a new user account by entering a valid email Development Activity Notification application are sent your Junk email folder.

If you are creating a new user account a verification email must open and click on the verification email in order to sent your new email.

### PGAtlas Login

<table>
<thead>
<tr>
<th>Email:</th>
<th>[Input Field]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password:</td>
<td>[Input Field]</td>
</tr>
</tbody>
</table>

[Submit]

**Forgot Password? 
Create New User**

### Detailed Site Plan

<table>
<thead>
<tr>
<th>Case Number</th>
<th>Title</th>
<th>Description</th>
<th>Location</th>
<th>Zip Code</th>
<th>Map Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSP-15039</td>
<td>DAYCARE CENTER @ 6000 MARLboro PIKE</td>
<td>2,757 SQUARE FOOT DAYCARE FOR 63 CHILDREN</td>
<td>SOUTHEAST QUADRANT OF THE INTERSECTION OF MARLBORO PIKE AND BELWOOD STREET.</td>
<td>20747</td>
<td>Click Here</td>
</tr>
</tbody>
</table>

| DSP-8042-14 | MITCHELLEVILLE PLAZA, PARCEL A-1, DUNKIN DONUTS ADDITION OF DUNKIN DONUTS USE IN EXISTING BUILDING, MODIFICATION OF PARKING, AND ADDITION OF DUMPSTER ENCLOSURE | SOUTHWEST QUADRANT OF THE INTERSECTION BETWEEN CENTRAL AVENUE AND WATKINS PARK ROAD. | 20721 | Click Here |
Appendix 13 - PGAtlas Plat Reference
Testimonials

Testimonials are located on the following pages.
February 14, 2020

Re: URISA's Exemplary Systems in Government Award

To Whom It May Concern:

I am writing this letter to support PGAtlas.com being awarded the URISA Exemplary Systems in Government Award.

I am the Senior Vice President of NAI Michael, Inc. which is located in Lanham, Maryland. For over 40 years, NAI Michael has been the leading commercial real estate company in Prince George’s County. Our team of over 60 professionals has always worked to produce the highest quality of work for our clients. In addition to Prince George’s County, our team works in the District of Columbia, Northern Virginia, Howard County, Montgomery County, Anne Arundel County, and Calvert County, as well as other surrounding Maryland counties.

My team relies on PGAtlas.com daily to meet a wide range of information requirements to support our business needs. For example, my team uses PGAtlas.com to locate undeveloped land, identify adjacent property ownership, zoning, and identify environmental constraints.

My staff has also taken advantage of the free PGAtlas.com training in order to remain current with the web application advancements. I believe PGAtlas.com remains the most capable local government web mapping application within Maryland. The application continues to evolve to meet the business community’s needs.

Please feel free to contact me if you would like to discuss PGAtlas.

Sincerely,

Jonathan Reneau, SIOR
Senior Vice President & Sales Manager
jreneau@naimichael.com
301.918.2920
February 24, 2020

RE: PGAtlas

To Whom it May Concern,

I am writing to support PGAtlas.com being awarded the URISA Exemplary Systems in Government award.

I am the Executive Vice President of the Prince George's County Association of REALTORS® (PGCAR) located in New Carrollton, Maryland. PGCAR represents over 3500 REALTORS® and industry-related professionals in Prince George's County, Maryland, and throughout the Washington, DC metropolitan area. PGCAR is the voice of the REALTOR®, working to ensure public policy that encourages homeownership in the national capital area. The association also serves the business needs of its members by providing education, networking opportunities, news, information and many more services to give REALTORS® the tools they need to be successful.

Our members rely on PGAtlas.com daily to meet a wide range of information requirements to support their business needs. For example, members use PGAtlas.com to locate a property, determine its zoning, and identify environmental constraints such as tree conservation plan.

Members also take advantage of the free PGAtlas.com training in order to remain current with the web application advancements.

I believe PGAtlas.com remains the most capable local government web mapping application within Maryland. The application continues to evolve to meet the business community’s needs.

Please feel free to contact me if you would like to discuss PGAtlas.

Sincerely,

Michael Graziano, Executive Vice President

mikeg@pgcar.com
February 10, 2020

RE: URISA ESIG Award

To Whom it May Concern,

I am writing this letter to support PGAtlas.com being awarded the URISA ESIG enterprise system award.

I am the president and owner of Land & Commercial, Inc. which is located in Upper Marlboro, Maryland. My firm has served the State of Maryland since 1974 and we specialize in the industrial, office, retail, land and development fields of Real Estate.

My firm provides a full range of commercial real estate services with emphasis in the counties of Prince George’s, Calvert, Charles, Anne Arundel and St. Mary’s, or nationally through our affiliations. Land & Commercial staff have heavily relied on PGAtlas for over 15 years.

Over the past 15+ years, my team has used PGAtlas.com daily to meet a wide range of requirements to support my business. For example, my team uses PGAtlas.com to locate undeveloped land, identify adjacent property ownership, identify environmental constraints on the land such as severe slopes, Marlboro clay and floodplains. We also rely on the Development Notification tool so that I can easily stay abreast of the development conversations that are being discussed within Prince George’s County. And, we use PGAtlas to support my business web page map needs. PGAtlas has been an invaluable tool, and we would literally be lost without it!

My staff has also taken advantage of the free PGAtlas.com training in order to remain current with the web application advancements.

I believe PGAtlas.com remains the most capable local government web mapping application within Maryland. The application continues to evolve to meet the business community’s needs.

Please feel free to contact me if you would like to discuss PGAtlas.

Sincerely,

Leo Bruso, SIOR, President
February 7, 2020

To Whom it May Concern,

I am writing this letter in support of the Maryland National Capital Park and Planning Commission’s (MNCPPC) PGAtlas GIS application for Prince George’s County, Maryland. This compilation of tools and applications have been proven to be an integral necessity for the day to day business activities completed by the 35 County government agencies in Prince George’s County that it should be considered for a URISA Exemplary Systems in Government Award.

In my 17 years as GIS Division Chief for the Office of Information Technology (OIT), PGAtlas has always been the premier GIS application for use in locating and determining any queries involving property, addressing, planning, development, and zoning in the County for the public and government entities. The MNCPPC GIS team is always providing new tools and ideas to PGAtlas and keeping it in the forefront of Esri GIS technology. My office has been able to provide to PGAtlas GIS data maintained by my office and other agencies, and additional functionality, like Eagleview’s Connect Explorer API so users can view orthogonal and oblique imagery that we capture yearly. This collaboration of data and information into a single source makes PGAtlas a valuable tool, saving time, money, and effort by the agencies to better serve the citizens of the County.

The application has been created with the general user in mind to make it easy to use and find the information they require, while providing advance queries to data and information location by other State and local agencies. The ability for a user to search by address, turn on the necessary data layers and print a high-quality map of their search has made it a favorite with planners, developers, engineers, real estate agents, and a homeowner curious of their property. This eliminates extra work for my office, and I assume the MNCPPC GIS staff, making maps and performing queries for these users.

The PGAtlas GIS application created and maintained by MNCPPC is such a common place tool used in all County agencies that is has been an essential GIS resource to the County. It is a conduit of GIS information provided by several agencies able to provide to staff, citizens of Prince George’s County, and the public. This is the signature GIS technology for Prince George’s County that is providing the most benefit to its citizens is why I think that the PGAtlas GIS application should be considered for the URISA Exemplary Systems in Government Award for this year.
Sincerely,

Patrick Callahan  
GIS Division Chief  
Office of Information Technology  
Prince George’s County, Maryland