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BUSINESS TECHNOLOGY SERVICES 2019 STRATEGIC PLAN
CIO EXECUTIVE SUMMARY

Over the past decade, Pinellas County Business Technology Services (BTS) has been the entrusted information technology provider to Pinellas County’s diverse workforce. The size and scope of the BTS application portfolio and underlying infrastructure is testament to the growth in digital services and information demands from our employees, partners and citizens.

Since its inception, the mission statement of BTS has always contained two primary principles common to all government service providers – provide first class services while maximizing the return on public investment.

This plan adheres to these principles, aligns BTS with Pinellas County’s strategic goals, and provides the business and technology strategies for our customers to optimize the delivery of public services and improve the quality of life for Pinellas County’s citizens. Under the direction of our Business Technology Services Board, we recognize our role in helping to make Pinellas County an excellent place to live, work and play.

BTS will continue pursuing its core mission of enhancing business value across all areas of County government while investing in future IT infrastructure for Pinellas County to become a truly “smart” community, expanding our digital service offerings and enhancing engagement with our constituents in new and innovative ways.

As the technology landscape is ever changing, BTS is constantly planning on how best to implement the technologies of tomorrow across our government enterprise. The arrival of technology disruptors such as cloud computing, artificial intelligence, blockchain, Internet of Things, wearables, and big data analytics will have a high impact on digital government services and will change the way we conduct business in the future. BTS leadership, our dedicated staff, and our mature governance give us the confidence to guide Pinellas County Government through this ever-changing technology world.

On behalf of the Business Technology Services Department, it is my pleasure to present the FY2019 BTS Strategic Plan and we thank you for the opportunity to serve the citizens of Pinellas County.

Sincerely,

Jeff Rohrs
Chief Information Officer
Pinellas County Business Technology Services
EXECUTIVE SUPPORT AND GOVERNANCE

The Pinellas County Business Technology Services (BTS) Board is an independent board, established through interlocal agreement, and composed of County representatives and Constitutional Officers. The BTS Board is responsible for setting policy for common technology issues and expenditures, and facilitating the economic and effective provision of business technology services and support to the operations of Pinellas County and its Constitutional Officers.

The BTS Board and BTS department were established under interlocal agreement between the Constitutional Officers, the County Administrator and the Six Circuit Judiciary.

Under the direction of the BTS Board and the leadership of the BTS Chief Information Officer (CIO), BTS collaborates and partners with all BTS Board members and their respective departments to provide technology solutions to meet the business strategies that help facilitate the mission of Pinellas County Government.
OUR MISSION, VISION AND VALUES

Since the resolution to create Pinellas County Business Technology Services on July 1st, 2008 through interlocal agreement, our organization has provided a critical public service under the direction and supervision of the BTS Board.

The centralization of core information technology services shared across Pinellas County’s participating government technology agencies has achieved financial and operational efficiencies and has drastically elevated the technology profile of Pinellas County over the last decade.

As a result, both the level of service and level of expectation for the BTS organization is high, with increasing demand for technology solutions for governmental business.

It is our mission to continue to rise to the challenges set forth by our customers and partner agencies and continue to deliver cost effective, high quality and innovative technology services that benefit Pinellas County’s workforce and citizens.

OUR MISSION OF SERVICE
As the technology leader in Pinellas County Government, our mission is to ensure the success of our customers and partners in delivering government services by providing cost effective and innovative technology solutions with the goal of improving the daily lives of Pinellas County Citizens.

OUR VISION FOR A BRIGHTER TECHNOLOGY FUTURE
Our vision is to be Pinellas County’s Service Provider of Choice, providing exceptional value-added Information Technology products and services while maximizing the return on public investment in Business Technology Services.

THE CORE VALUES OF OUR ORGANIZATION
Our leadership adheres to and promotes the core values of Pinellas County Business Technology Services:

- Integrity and Accountability
- Diversity
- Continuous Improvement
- Teamwork and Collaboration
- Innovation
- Quality Service
BTS STRATEGIC GOALS

Each year, Pinellas County Business Technology Services evaluates its strategic goals and strategies to ensure that our strategic plan aligns with the strategic planning efforts of the partner organizations that we serve. It is important that as BTS works towards its goals as an independent appointing authority, that we are applying the business and technology strategies that enhance value and productivity of the Pinellas County workforce and ultimately allows us to better serve our citizens.

GOAL 1: OUTSTANDING CUSTOMER SERVICE

Technology has saturated nearly every corner of modern life and increasingly is relied upon by Pinellas County’s workforce to meet its day to day obligations to our citizens.

Excellent customer service is central to any information technology support organization and BTS seeks to provide the best possible service and support to our users. We constantly strive to fulfill our vision of being the “service provider of choice” when it comes to Pinellas County’s technology needs.

GOAL 2: MATURE GOVERNANCE AND SUSTAINABILITY

The BTS Board has provided a sustainable framework for increasing collaboration and partnerships between all Pinellas County stakeholders and constitutional offices. Our governance model provides Senior Executives with a formalized management structure that enables them to ensure that investments and the engagement of limited staffing resources are aligned with stakeholder business objectives.

Our IT governance model encourages Executives to consider implications both vertically within their own domain and horizontally across the broader County organizational landscape to make the best possible investments on behalf of our citizens.

The BTS Board has also developed several proxy committees to govern and provide oversight of specific key projects/technologies. These include the Enterprise GIS Steering Committee (EGIS), Oracle Business Applications Executive Committee (OBAEC) and the Criminal Justice Information System Policy Boards (CJIS). These three committees govern applications and resources that are Enterprise in scope and provide benefit to multiple constitutional offices and appointing authorities.
GOAL 3: EFFICIENT SERVICE DELIVERY

BTS recognizes the growing requirements and accelerated need for technology solutions from our partners and has dedicated a team to focus on rapid delivery of technology solutions. Many agencies and departments are striving to deliver their services more effectively and efficiently by leveraging technology solutions. BTS continues to invest in and adopt agile project management and development methodologies with the intent of quicker and more efficient service delivery to our customers.

GOAL 4: TALENT MANAGEMENT AND DEVELOPMENT

One of the largest challenges for BTS continues to be the ability to attract, develop and retain the technical expertise to maintain the high quality IT services that our government agencies demand. BTS believes that in order to continue providing the level of service that our customers are used to, we must continue to attract and invest in human capital and strive to create an excellent work environment attracts the best and brightest minds in our industry.

The increasing demand for high tech workers continues to create an extremely competitive labor market in the Tampa Bay area in all sectors – public, private and non-profit alike. BTS expects this trend to continue and will work with Human Resources to ensure that our salary/benefit offerings are in-line with other government agencies. With a balanced approach of long-term full time equivalent (FTE) positions and shorter-term contractual labor, we can ensure that our level of service and innovation remains high.

BTS will continue to assess and develop our workforce to ensure that we are equipped to execute on the strategies outlined in this strategic plan. Only by linking talent to strategy will Pinellas County fully realize its investment in talent management.

GOAL 5: FINANCIAL STEWARDSHIP

BTS has the responsibility of maintaining a budget that aligns with the strategic information technology initiatives and projects undertaken on behalf of its customers. Our goal is to ensure that dollars allocated for IT projects and contracts provide the maximum return on investment for our citizens and enhances the level of service that Pinellas County currently provides the community.
STRAIMES AND OBJECTIVES

BUSINESS STRATEGIES

CITIZEN ENGAGEMENT

The terms “eGovernment”, “Smart Community”, “Digital Government” or “Connected Government” have been used for several years to represent the shift from operating government in a traditional way to operating government in the information age and interacting with citizens using modern technology and platforms.

What this really means is that, as doing business electronically becomes more accepted, government entities are investing in technologies that enhance the constituent’s experience.

BTS is focusing on four key areas to increase citizen engagement: Transparency, Crowdsourcing, Communications and Online Services. Providing County constituents access to more information and authoritative data promotes transparency of government which builds trust in the Pinellas County’s leadership and processes.

Using crowdsourcing tools such as SeeClickFix allows our workforce to gather valuable information from citizens about problems within the scope of County services which helps our workforce improve the maintenance of its infrastructure and assets.

By providing valuable communication vehicles like Community Conversations, citizens are able to be involved in county business meetings and in giving county leadership feedback through many different technology avenues.

Lastly, through the deployment of online services across county government, citizens are able to receive services digitally that were traditionally supplied by contact center staff or on-site staff.

Pinellas County is quickly maturing and on the path to becoming a “Smart County” and BTS will continue to lead technology efforts that cultivate and enhance citizen engagement.
An effective Open Data program balances both the release of information as a public asset and the consumption of data as a strategic resource.

Building on Pinellas County’s existing Open Data successes with *Spending in the Sunshine* and the *Enterprise GIS Open Data Portal*, BTS will seek an enterprise solution to create a Countywide Open Data platform with the goal of making more data and information available to citizens in alignment with the County’s strategic goal of government transparency.

To date, the County’s Open Data initiatives have had narrow focus, little governance and have not been enterprise in scope. Open Data and Open Government platforms have matured significantly in the last five years and there now exist various COTS and cloud-based providers.

The foundation for a successful Open Data initiative will rest on strong Business Intelligence (BI), data architecture and warehousing capability which is a key technology strategy for FY2019 outlined in this strategic plan.

BI and data architecture strategy development and execution along with executive sponsorship and governance will be a prerequisite to a sustainable Open Data program.

The benefits of a successful Open Data program include:

- **Transparency.** Open Data makes it easier to monitor County activities, such as tracking public budget expenditures and impacts. It also encourages greater citizen participation in government affairs and supports democratic societies by providing information about voting procedures, locations and ballot issues.

- **Public Service Improvement.** Open Data gives citizens the raw materials they need to engage their governments and contribute to the improvement of public services. For instance, citizens can use Open Data to contribute to public planning, or provide feedback to the County on service quality.

- **Innovation and Economic Value.** Public data, and their re-use, are key resources for social innovation and economic growth. Businesses and entrepreneurs are using Open Data to better understand potential markets and build new data-driven products.

- **Efficiency.** Open Data reduces data acquisition costs, redundancy and overhead. Open Data can also empower citizens with the ability to alert County staff to gaps in public datasets and to provide more accurate information.
BUSINESS RELATIONSHIP MANAGEMENT

Business Relationship Management (BRM) is a widely used strategy to enhance partnerships between service providers and customers. Over the last several years, BTS has developed a BRM strategy and process to enhance customer partnerships.

This has primarily been through the use of the leadership team operating as part-time relationship managers while balancing the demands of their primary role. BTS recognizes the importance of establishing and maintaining a business relationship with our customers. To meet the business objective, BTS has experimented with the creation of a dedicated BRM group that focused on establishing business relationships with customers to ensure BTS understands our customers and their business needs. In FY2019, BTS will return to the shared BRM model and deploy business analysts that can help bridge the gap between business and technology requirements on behalf of our partners.

BTS will continue to partner with customers to ensure high levels of customer satisfaction, establish a constructive relationship, identify changes to the customer environment that could impact services provided by BTS, and ensure BTS services is meeting the demands of our customers.

RAPID APPLICATION DELIVERY

BTS recognizes the growing requirements and accelerated need for technology solutions from the business and has dedicated a team to focus on rapid delivery of technology solutions. Many agencies and departments are striving to deliver their services more effectively and efficiently by leveraging technology solutions.

The creation of the BTS rapid application delivery (RAD) team allows us to add value to the business by delivering small to medium solutions in a shorter timeframe. Creating a RAD team within the BTS department allows for two streams of work, traditional and fast. The traditional stream will focus on long-term COTS implementations that typically last for more than six months and require a more robust project management and development process.

The RAD team focuses on small to medium projects that can be completed using a more streamlined development process and completed in a much shorter timeframe than projects that the traditional stream of work would be handling.
END USER EXPERIENCE

Evolving the end user experience in a way that enhances productivity and overall user satisfaction is a key strategy for BTS.

The end user experience can be everything BTS provides that the end user experiences such as; the office experience with workstations and applications, the mobile experience and applications, video and audio conferencing, the remote access experience and just as important the experience we provide the citizens and constituents through our public and self-service offerings.

PLATFORM/DEVICE AGNOSTIC DELIVERY

Web application technologies have diversified in recent years, and there is no longer a strong market leader for web browsers, web frameworks, and other associated technologies. In addition, mobile technologies have matured, with modern phone and tablet devices able to access web functionality in virtually the same way as traditional desktop PCs.

Users now expect that the web-based applications that they use and rely on will continue to function and provide value regardless of web browser, operating system, or device. This is an important factor for internal applications due to initiatives such as BYOD (Bring Your Own Device) as well as to help minimize application modernization efforts, and even more important for external applications, in which Pinellas County has little control over how citizens and external agencies choose to access web applications.

To meet this new landscape, delivered solutions will be as platform agnostic as possible, so that these solutions can function identically regardless of the technologies used to access them.

Developed solutions will focus on platform agnostic technologies, such as increased usage of HTML5 and Service-Oriented Architecture techniques, as well as decreased usage of technologies that require specific platforms or configurations, such as browser plug-ins (Flex, Silverlight), software frameworks (Applets, ActiveX), or specific browsers or browser versions. In addition, procured solutions should use this strategy as a guiding factor in making technology decisions to ensure that the solution will be durable regardless of future technology trends.
Enabling the County to advance to new platforms such as tablet PCs, mobile devices, and faster operating systems is imperative now and into the future. Every application has a lifecycle and creating a roadmap that includes an end of supportability/life date and a strategy must be in place to either migrate or eliminate that application from the portfolio.

The entirety of the BTS-supported application portfolio must be analyzed and plans developed for transitioning to modern, sustainable technologies. A repeatable methodology has been developed to analyze the County’s application portfolio each year to assess what actions will be needed to manage the technical quality and total cost of ownership versus business value of each application. Emphasis must be placed on this initiative to assure stakeholders are not held back from taking advantage of newer efficiencies and technology platforms.

The Application Portfolio Management process assesses key factors such as operational performance, security risk analysis, and impact to business processes to determine the business value and technical quality for each application in the portfolio. This analysis also provides a visual mechanism to identify clusters of similar applications for future consolidation and migration to common, enterprise-wide products. Ultimately, the process categorizes each application into one of four groups to determine a high-level strategy for each application in the portfolio:

- **Invest**: applications that provide high business value and have good technical quality. These applications will remain an active part of the portfolio, and should be actively enhanced to increase their value and usage.

- **Migrate**: applications that provide high business value, however the technical quality is low which makes them difficult and more expensive to maintain. These applications should be modernized and migrated to another technology or platform.

- **Tolerate**: applications with relatively low value to the business, but cause few technical concerns or problems. These applications will remain in the environment for usage but have no emphasis on future investment or enhancement.

- **Eliminate**: applications which no longer provide sufficient business value and have low technical quality, and should be evaluated for retirement.
PROACTIVE SECURITY

Protection of the County’s critical systems and sensitive data is paramount. BTS is the custodian of much of the County’s systems and information assets. As such, it is imperative that BTS strive to protect and maintain the confidentiality, integrity and availability of these important assets. Following recommendations from our 3rd party security assessment conducted in 2013, BTS has increased dedicated security staff to four full time equivalents (FTEs). With these new resources in place, BTS will enhance security oversight and overall security awareness over the Enterprise. The following is a list of some of the initial areas of focus:

- Create information asset inventory and data classification with agreed upon risk scoring to assist in prioritization of protection efforts
- Increase the capability to provide baselines, trends and benchmarks to enable better decision making
- Provide better reporting for data owners
- Integrate security into projects by partnering on the solutions development life cycle (SDLC)
- Determine the policy standards that are consistent with local government and adopt as the framework
- Seek solutions to create segregation of duties which will reduce the potential for fraud and misuse

IT GOVERNANCE

BTS blends a series of best practice disciplines for leading and managing the County’s business technology investments.

New emphasis continues to be put toward Service Strategy, Service Design, Continual Service Improvement, and Organizational Change Management practices to support financial stewardship and IT best practices in the day to day operations of Business Technology Services.

- Information Technology Infrastructure Library (ITIL)
- Project Management Body of Knowledge (PMBOK)
- Enterprise Planning and Architecture Strategies (EPAS)
- Solution Development Life Cycle (SDLC)
- Enterprise Security Policy
- Service Level Agreements (SLA)
- Performance Management / Goals & Objectives
- Organizational Change Management (OCM)
TALENT MANAGEMENT

BTS values the contribution of our employees as a core competency, and we are committed to recruit, develop, reward, and retain personnel of exceptional ability, character, and dedication. We are a continually learning organization, continually evolving and staying apprised and ahead of business and technology trends.

Our people are our service and to keep pace with constant changes in technology and the high level of expertise required, continual investment in education is imperative.

Additionally, as the next wave of technologies emerge (Cloud, Internet of Things, Big Data and Analytics, Cybersecurity, etc.), our staff and our stakeholders/customers will require training to assure they get the maximum benefits from new business processes and efficiencies.

Attracting and retaining new talent continues to be a primary challenge for BTS. Reducing our dependency on contract staff and staff augmentation contracts will be a focus for the next couple of years.

BTS is also seeking to create a partnership with HR to fund a position that will focus on and facilitate the recruitment of high quality talent.

Along with attracting new talent, BTS continues to seek to maximize the return on its training budget by offering employees the opportunity to seek continuing education and attend industry conferences pertinent to our areas of support. Our investments in education and training make BTS an attractive option for technical professionals seeking to grow their skills.

In 2019, the BTS executive leadership will be tasked with evaluating existing skillsets within our functional areas and providing a gap analysis to help understand future training needs and opportunities. This evaluation will help BTS develop a training roadmap to ensure that our employees are educated on the latest technologies and possess the skills needed to meet our strategic business and technology goals now and into the future.
Business Continuity Management has become a top priority for Pinellas County BTS as a strategy to minimize the overall risk and impacts related to disaster events. During crisis, it is imperative that Pinellas County have the ability to quickly restore critical assets and infrastructure.

For BTS, this means that quickly recovering information systems relied upon by County departments for asset management, work management, financial management and other key functions is imperative for business continuity.

BTS has taken the lead in developing and maintaining a disaster recovery plan to meet the needs of each BTS member and support recovery operations broadly. On March 2nd, 2016 BTS hosted a Business Continuity/Disaster Recovery Workshop to identify and prioritize a list of critical applications deemed mission critical to Pinellas County operations. The final list included the following business systems:

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<thead>
<tr>
<th>Web EOC</th>
<th>SCADA</th>
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<tbody>
<tr>
<td>Damage Assessment</td>
<td>GIS</td>
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<tr>
<td>Medical Examiner</td>
<td>OPUS</td>
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<tr>
<td>Odyssey/CCMS</td>
<td>CHEDAS</td>
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<td>Consumer Complaints</td>
<td>JAWS</td>
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<td>Permits Plus</td>
<td>PCCLB Database</td>
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<tr>
<td>Pinellas County Web</td>
<td>Agile Assets</td>
</tr>
<tr>
<td>Maximo</td>
<td></td>
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</tbody>
</table>

### Service Level Agreement Management

Because of the Enterprise scope of the BTS mission and because technology continues to increase in the County’s day to day operations, we have an obligation to meet our commitments as a technology service provider to the Pinellas County workforce.

Service level agreements help BTS understand its commitments to our customers, and help define an expectation for service availability, quality and responsibility. Our goal is to continue to honor our commitments and enhance the levels of service that we provide while ensuring customer satisfaction across all constitutional bodies that rely on our organization for Enterprise services.
ENTERPRISE LEVEL MONITORING

BTS’s core services have many interdependencies between infrastructure, databases, applications and clients. Enterprise-level monitoring is the first step in effectively and efficiently managing our interconnected IT infrastructure and delivering the best customer satisfaction.

BTS currently deploys many monitoring tools in the environment such as SolarWinds for hardware and network infrastructure monitoring, Splunk for dashboards and analytics, WebTrends for web server application logging (and many others).

Our goal is to ensure proactive monitoring across the following areas:

- **Infrastructure monitoring**
  Monitoring servers and their operating systems (OS) needs to be proactive according to well-defined baselines and thresholds for file systems, disks, critical processes, important log files, and ports and patching which ensure the base bed availability of a hosting environment.

- **Network monitoring**
  Completed network monitoring and fault reporting for network devices and links is also required for Enterprise monitoring. This typically involves the identification and classification of network devices, IP range, ports, etc. and configuring monitoring rules for alert thresholds.

- **Storage monitoring**
  Storage monitoring tools provide a holistic view of the storage infrastructure that is updated in real-time, which helps to accurately predict storage-related errors that tamper application performance.

- **Application/Database monitoring**
  Application performance monitoring is an area of information technology that focuses on making sure software application programs perform as expected. The goal of application and database performance monitoring is to provide end users with a quality end-user experience.
TECHNOLOGY STRATEGIES

CLOUD SERVICES

Over the past decade, Pinellas County has made significant investments in its physical datacenter capabilities to increase the on-premises computing and storage capacity to keep up with demand for new technology applications. A portion of the BTS budget is dedicated to operation and maintenance expenses surrounding the maintenance of these critical facilities.

Currently BTS operates large physical data centers at the Public Safety Complex, the Public Works Emergency Responders Building (ERB) and the Central Clearwater Campus.

In the last few years, the economies of scale have driven down the cost of cloud services significantly and adoption has become extremely attractive from both a financial and operational standpoint for both private and public organizations. Some of the benefits of Pinellas County adopting a cloud strategy include:

- Shifting from Capital Expense (CapEx) to Operating Expense (OpEx) funding model
- Software/Patching/OS upgrades, load balancing, storage responsibilities shift to third party (SaaS, PaaS)
- Flexible vendor licensing and cost models (flat fee, usage/throughput)
- Flexible capacity and scaling (turned up/down depending on demands)
- Continued reinforcement of commercial off the shelf (COTS) approach vs custom software development through cloud vendor agreements (SaaS, PaaS)

In FY2019, BTS’s cloud strategy will be to maximize capital expenditure (CapEx) cost avoidance, shift to an operating expense (OpEx) model, seeking cost effective Software as a Service (SaaS) and Platform as a Service (PaaS) cloud-based solutions as a first option for technology implementation. BTS will also develop strategy, policy and governance surrounding a third cloud model – Infrastructure as a Service or (IaaS). Various IaaS providers such as Amazon Web Services, Microsoft Azure and Oracle Cloud provide this cloud model, which has been increasingly adopted by government agencies and private sector organizations.

BTS is currently using IaaS for its Disaster Recovery implementation, leveraging the cloud as an enterprise solution for continuity of operations.
Below are the different cloud models BTS intends to explore and implement where applicable:

**SaaS – Software as a Service**
SaaS uses the web to deliver applications that are managed by a third-party vendor and whose interface is accessed on the clients’ side. Most SaaS applications can be run directly from a web browser without any downloads or installations required, although some require plugins.

Because of the web delivery model, SaaS eliminates the need to install and run applications on individual computers. With SaaS, it’s easy for enterprises to streamline their maintenance and support, because everything can be managed by vendors: applications, runtime, data, middleware, OSes, virtualization, servers, storage and networking.

**PaaS – Platform as a Service**
Cloud platform services, or Platform as a Service (PaaS), are used for applications, and other development, while providing cloud components to software. With PaaS, developers gain a framework they can build upon to develop or customize applications. PaaS makes the development, testing, and deployment of applications quick, simple, and cost-effective.

With this technology, enterprise operations, or a third-party provider, can manage OSes, virtualization, servers, storage, networking, and the PaaS software itself. Developers, however, manage the applications.

**IaaS – Infrastructure as a Service**
Cloud infrastructure services, known as Infrastructure as a Service (IaaS), are self-service models for accessing, monitoring, and managing remote datacenter infrastructures, such as compute (virtualized or bare metal), storage, networking, and networking services (e.g. firewalls). Instead of having to purchase hardware outright, users can purchase IaaS based on consumption, similar to electricity or other utility billing.
BUSINESS INTELLIGENCE AND ANALYTICS

Business Intelligence (BI) is a set of business practices and technologies that aim to support data-driven decision making. Pinellas County has invested in market-leading business intelligence and performance measurement platforms for the enterprise. Oracle Business Intelligence Enterprise Edition (OBIEE), Microsoft PowerBI and ESRI Insights are platforms currently owned and leveraged by the Pinellas County workforce and citizens.

Fully engaging the capabilities of these tools will be transformational in improving the information readily available to decision makers and the public. A unique capability of these tools is the ability to federate data across multiple data sources, enabling them to be used across the enterprise as ad-hoc reporting or dashboard tools. This creates the ability to create reports and dashboards that include data from multiple sources which in the past would have had to be reported on separately or manually combined.

In addition, BI tools empower the users to create their own reports and be more proactive in their decision making process, with the help of KPI’s, Scorecard and Dashboard boards.

BTS will also continue to pursue self-service business intelligence solutions that will allow users to analyze and report on authoritative Pinellas County datasets.

Pinellas County’s business intelligence technology strategy is a critical prerequisite to other business strategies such as Open Data and Citizen Engagement. There is an expectation that BI will also be leveraged heavily for analytics and reporting needs upon the completion of Pinellas County’s Enterprise Asset Management (CityWorks) and Permitting (Accela Civic Platform) implementations.

APPLICATION PORTFOLIO MODERNIZATION

Pinellas County Business Technology Services maintains a diverse application portfolio of over 400 business applications that help our customers operate efficiently and provide return on investment for the departments that we serve.

BTS seeks to maintain a modern application portfolio and provide the greatest functionality and customer experience possible to our end users as technology continues to evolve. Applications will be selected for modernization through the Application Portfolio Management process, identifying candidate applications whose end-of-life support is approaching. These legacy applications will include those that provide high business value but have low technical quality as well as applications relying on technologies which have been targeted for retirement on the BTS Technology Roadmap.

Legacy applications will be modernized using one of these general approaches, while considering high-level guiding principles such as "Commercial off the Shelf (COTS) Over Custom" and "Simplify and Reduce Complexity":

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- **COTS**: Identify and purchase a modern commercial system which meets the same or similar requirements as the legacy application.

- **Custom**: Utilize modern rapid application development technologies and processes, such as Oracle Application Development Framework, to develop a new custom application which meets the same requirements as the legacy application.

- **Consolidation**: If BTS already supports a modern COTS or Custom solution whose requirements are similar to the legacy application, the legacy users may be transitioned to the modern solution to meet their requirements. This may also require enhancing the modern solution via vendor engagement or custom development so that it can meet all necessary requirements.

**VIRTUALIZATION**

Virtualization and consolidation of physical infrastructure will continue to be a key strategy to retire legacy hardware, increase efficiencies and reduce the operating costs of BTS.

New trends in mobility will also make Desktop Virtualization (VDI) and Application Virtualization a top priority to deliver applications with less dependency on device compatibility and help support a “work from anywhere” culture. The new Emergency Operations Center currently relies on VDI for desktop delivery. Other projects such as Enterprise Asset Management and GIS may have a need for Application Virtualization. Our current VDI and Application Virtualization products will be evaluated for what best fits the County’s needs going forward.

**PROACTIVE SECURITY**

BTS continues to recognize the need to invest in security technologies that will reduce risk and guarantee confidentiality, integrity and availability of information. BTS will invest in vulnerability management software to capture and quantify risk. Additionally, increasing the visibility of malicious activity and applying countermeasures is a primary strategy for BTS. Investment in host based and network based intrusion detection as well as centralized logging and correlation analysis is needed over the next year to provide BTS the ability to see the threats in real time and respond.

The “Platform and Device Agnostic” strategy sought by BTS creates additional need to implement security tools such as Mobile Device Management and other real-time security and compliance tools that will allow the secure delivery of information and applications to any device, anywhere without increasing exposure and elevating the County’s risk profile. BTS continues to seek to lower potential risk and exposure to malicious parties internally by investing in data masking technologies.
Masking Personally Identifiable Information (PII), Credit Cards, and other sensitive data in development and test server instances is also under review. In alignment with the 3rd party assessment, BTS is currently developing a strategy to segment our network to create access control boundaries between County agencies and provide and added layer of protection for our business systems. This strategy reduces impact when or if a security breach occurs by limiting the effect of the breach to a single agency or network segment. Investment in powerful firewalls capable of providing this access control without unreasonably increasing the management burden is key to the success of this strategy.

**ENTERPRISE SERVICE BUS / SERVICE ORIENTED ARCHITECTURE**

An Enterprise Service Bus (ESB) is fundamentally an architecture. It is a set of rules and principles for integrating numerous applications together over a bus-like infrastructure. The ESB enables communication between business applications and provides for easy integration between disparate systems using a Service Oriented Architecture (SOA).

Increasing organizational agility by reducing development time for new initiatives is one of the most common reasons that organizations implement an ESB as the backbone of their IT infrastructure. An ESB architecture facilitates this by providing a simple, well defined, "pluggable" system that scales really well. Additionally, an ESB provides a way to leverage your existing systems and expose them to new applications using its communication and transformation capabilities.

Pinellas County BTS will implement an ESB solution to facilitate integration for the Enterprise Asset Management (EAM) project between CityWorks and other existing County systems such as SAP, OPUS, GIS, Synovia AVL and other authoritative systems.

**GIS AND SPATIAL ANALYTICS**

Since the inception of the County’s Enterprise Geographic Information Systems (eGIS) program in 2011, the demand for GIS software and location-based services has grown exponentially. The portfolio of GIS applications and services that leverage mapping and spatial analytics spans multiple constitutional governing bodies including the Board of County Commissioners, Pinellas County Sheriff, Property Appraiser and Supervisor of Elections.
GIS will continue to serve as a primary Enterprise technology in Pinellas County now and into the future.

Through much of the last decade, GIS has evolved as once being solely a planning and analysis tool, to now also being considered a robust, strategic and tactical business platform. The current changes underway in the GIS industry have far-reaching implications for our users and constituents and will change the way we perform our jobs, communicate with the public and think about strategic technology investment.

As technology in general has grown over the past decade, so too has the use of GIS applications in day to day County operations. Handheld GPS units and smartphones have made geospatial technology available to mobile users at an extremely attractive price point.

These tools have translated into worker productivity and cost savings as more information is now available at a much lower cost to employees which translates into better decision making and operational efficiencies.

Below are some examples of critical business functions performed in other Pinellas County departments that rely on the Enterprise GIS Program:

- Emergency Management Analysis and Disaster Assessment
- Parcel Management and Assessment
- Land Use Planning and Zoning
- Evacuation Planning
- Crime Analysis and Notification
- Annexation and Redistricting
- Public Works and Utility Management
- Permitting
- Asset Management
- Capital Improvement Planning and Funding

Through the Board of County Commissioner’s Enterprise Asset Management (CityWorks) and Accela Civic Platform project implementations, the importance of the County’s GIS and its governance becomes even more critical as GIS is more closely integrated with County business and serves as the primary repository for asset and property information.
STRATEGIC INITIATIVES AND PROJECTS

STRATEGIC INITIATIVES

BTS/BCC VERTICAL APPLICATION ALIGNMENT

In December of 2017, Pinellas County Business Technology Services (BTS) executed an organizational realignment, shifting management responsibilities for vertical business applications in the BTS application portfolio to the Pinellas County Board of County Commissioners newly formed Office of Technology and Innovation (OTI).

BTS will continue to work in close partnership with OTI in providing focused support for applications and supporting enterprise services and infrastructure as ongoing support and service level agreements are created for these applications.

The goal of this realignment is to shift the application support for vertical applications closer to the businesses that leverage these systems. This alignment adheres to an agreed upon framework and core principles including maintaining or enhancing existing levels of service while maintaining cost neutrality for IT services within the County.

Logistics for the BCC vertical realignment have commenced in partnership with the County Administrator’s Office and are anticipated to be completed in spring of 2018.
STRATEGIC PROJECTS

ENTERPRISE ASSET MANAGEMENT/CITYWORKS
Pinellas County’s business enterprise includes more than 50 separate departments with oversight provided by constitutional officers, public boards, and appointing authorities; each with the common goal of serving the nearly one million citizens of Pinellas County. In an effort to provide improved and sustainable services to citizens in a more consistent manner, Pinellas County is looking for a more effective and efficient means of managing assets at an enterprise level.

The goal of this project is to provide a comprehensive enterprise asset management program with the highest priority placed on optimizing the life cycle of these assets and the resources supporting them.

This initial phase provides the foundation of a two-step process to implement the County’s chosen Enterprise Asset Management Software system, Azteca Cityworks. Following successful completion of this project, the second project can be initiated and executed, which will result in a fully operational Enterprise Asset Management system across the County.

ACCELA CIVIC PLATFORM
The Accela Civic Platform software implementation is an enterprise initiative to redefine and streamline the County’s land development and permitting activities. The initiative involves various Board of County Commissioners departments including:

- Development Review Services
- Building Services
- Economic Development
- Planning
- Utilities
- Public Works
- Solid Waste

Currently the proposed technology implementation strategy is based on the use of Accela's Automation platform. BTS will help facilitate and manage the upgrade from the legacy Permits Plus application to the Accela Platform. This upgrade will realize many business and technology benefits including streamlined services, improved access to information, field mobility and an open architecture for ease of configuration and integration.
PINELLASCOUNTY.ORG WEBSITE
BTS along with the County Administrator’s office will be seeking a replacement public-facing content management system that will allow citizens to have a modern experience across any device.

INTERACTIVE VOICE RESPONSE SYSTEM (IVR) PHASE II
Pinellas County’s IVR or Interactive Voice Response (IVR) is an automated telephony system that interacts with callers, gathers information and routes calls to the appropriate recipient.

SCADA INFRASTRUCTURE UPGRADE
The purpose of the project is to upgrade the current SCADA infrastructure to be cost effective and in line with BTS standards. This would entail bringing support for SCADA infrastructure to fall within BTS Enterprise Services, such as upgrading network, servers, and mobile devices, and providing an enterprise backup solution. This project will also review and implement recommendations from the Homeland Security Assessment.

NETWORK SEGMENTATION PROJECT
This project will allow Pinellas to implement an IT data network segmentation that will use a consistent and scalable design and will drastically improve the underlying security of the Pinellas County network.

By segmenting the network into “zones” that contain applications and data with similar security and compliance requirements, BTS can add a layer of security and segregation. In the event of a virus or malware, network segmentation isolates the infection to one zone and internal firewalls prevent issues from spreading to the Enterprise.
**DISASTER RECOVERY CLOUD INFRASTRUCTURE BUILDOUT**

The scope of this project includes moving selected applications to the Amazon Web Services (AWS) Cloud for disaster recovery purposes, securing Pinellas County’s critical systems in a remote cloud-based data center.

Currently, the primary disaster recovery data center for Pinellas County resides in the Emergency Response Building (ERB), a category-five rated structure with physical infrastructure and servers supporting any potential disaster scenario in which business systems fail.

The following applications have been identified by stakeholders as “mission critical” and are being targeted for a disaster recovery build and configuration using the Amazon Cloud:

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<thead>
<tr>
<th>Application</th>
<th>Cloud Service</th>
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<tbody>
<tr>
<td>Web EOC</td>
<td>SCADA</td>
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<tr>
<td>Damage Assessment</td>
<td>GIS</td>
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<tr>
<td>Medical Examiner</td>
<td>OPUS</td>
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<td>Odyssey/CCMS</td>
<td>CHEDAS</td>
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<tr>
<td>Consumer Complaints</td>
<td>JAWS</td>
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<td>Permits Plus</td>
<td>PCCLB Database</td>
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<td>Pinellas County Web</td>
<td>Agile Assets</td>
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<td>Maximo</td>
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BTS planning to engage a cloud services vendor to help with the planning and migration phases of this implementation.

**SERVICENOW**

Since 2009, Business Technology Services has utilized ServiceDesk as its primary Work/Incident Management Tool. In 2019, BTS will seek to implement a new work and project management system called “ServiceNow” which will help BTS with day to day operations as well as IT project tracking and planning.

ServiceNow will help BTS achieve deeper insights into our organizational capacity and resource utilization, and provide a rich user experience to all of our internal partners that rely on us for quick incident resolution and project completion. ServiceNow will help BTS accelerate our service restoration and help drive continual service improvement by providing analytics that will be key in helping BTS measure performance.

**SHAREPOINT ENTERPRISE**

The purpose of this project is to create an enterprise SharePoint environment for BTS customers that is facilitated by BTS where end users can manage their own agency’s SharePoint project site collections.

SharePoint can assist with a number of organizational workflows, including website creation, content-management, team collaboration, document sharing, and application development. It also has an enterprise-level search capability.

Microsoft SharePoint has become one of the most frequently used and important collaboration solutions for Pinellas County’s workforce.
**WINDOWS 10 UPGRADE**
The Windows 10 upgrade project seeks to modernize all desktop client operating systems to the latest version of the Windows platform.

Windows 10 provides new deployment capabilities, scenarios, and tools by building on technologies introduced in Windows 7, and Windows 8.1, while at the same time introducing new Windows as a service concepts to keep the operating system up to date.

**FORENSIC LAB LIMS SYSTEM**
The current Laboratory Information Management System (LIMS) used by the Pinellas County Forensic Lab is a software package custom written by BTS staff over seven (7) years ago. LIMS is the primary component of any laboratory operation and it is extremely critical within a forensics laboratory setting.

LIMS will be at the heart of testing evidence in support of all justice areas. Current LIMS supports processes such as lab evidence processing, seized drugs analysis, fire debris investigations and toxicology analysis.

The current LIMS was written in an older development technology (Oracle Forms) that is no longer supported by the vendor. The Medical Examiner is looking to fix issues within the existing system and to add critical enhancements. Our cost comparisons show that a Commercial-Off-The-Shelf (COTS) product could be purchased at a lower cost solution than custom development.