



# **Annual Accomplishments Report FY 2023**



# HOUSTON IT SERVICES ... SERVING HOUSTON



It is my honor to serve as Mayor of Houston, Texas – the fourth largest and most diverse city in the United States. Houston is renowned for its history-breaking industries such as space exploration, the largest medical center in the world, the world's largest oil & gas sector, as well as its diverse cultures, cuisine, and frequent hosting of global and nationwide sports and entertainment events. I am proud of our proven track record of growth, resilience, innovation, and opportunity that consistently lands Houston as a top-ranked city in numerous categories.

To accomplish those accolades, we have been laser-focused on my strategic priorities of Public Safety; Complete Communities; Service and Infrastructure; Sound Financial Management; and Resilient Houston. The goals and initiatives in each of these priorities foster an environment that enables the people and businesses in Houston to be safe, to thrive and grow, and to pursue their dreams. For more information you can read about my strategic priorities, the objectives for each priority, and key initiatives and action plans set forth to accomplish our goals at <https://www.houstontx.gov/mayor/Strategic-Guidance.pdf>

Houston's Information Technology Services Department plays a strategic role in helping each of the City's 23 departments achieve my strategic objectives by driving digital transformation to build more resilient, responsive, and more convenient services for Houstonians. I am pleased with the accomplishments that Houston IT Services and their partner departments achieved in FY23 and invite you to read more about how they are making a difference for Houston.

A handwritten signature in black ink, reading 'Sylvester Turner'.

Mayor Sylvester Turner

• PUBLIC SAFETY • COMPLETE COMMUNITIES • RESILIENT HOUSTON  
• SERVICES & INFRASTRUCTURE • SOUND FINANCIAL MANAGEMENT





LISA KENT  
CIO & DIRECTOR



*Lisa Kent*

CHIEF INFORMATION OFFICER & DIRECTOR



It is a great pleasure to present the Houston Information Technology Services Annual Accomplishments Report for Fiscal Year 2023 (July 1, 2022 through June 30, 2023). This report provides an overview of our organization, our teams, and our achievements and milestones, providing insight into the progress we have made this year and the impact to the residents and visitors of Houston.

Over the past year, our dedicated team of IT professionals has been committed to driving digital transformation to enhance and simplify our residents' experiences with local government services. By leveraging modern technologies, such as cloud computing and data analytics, we have facilitated resilient, insightful, and accessible services, empowering individuals and City departments alike.

In this report you will find information on several key initiatives and projects including their impact on the City of Houston and the residents of Houston. We are proud of our achievements and remain committed to delivering high-quality, innovative IT solutions that support the City of Houston's goals and objectives.

On behalf of Houston IT Services, we extend our sincere gratitude to our dedicated teams, stakeholders, residents, and partners. Your support and collaboration have been instrumental to our success. Together, we will continue to drive progress, build a digitally empowered community, and shape a brighter future for all.



<https://www.houstontx.gov/hits/index.html>





## VISION

HITS will be a catalyst that transforms Houston into a digital city for all

## MISSION

Provide solutions that serve, protect, and enlighten the residents and visitors of Houston

## CORE VALUES

Humility • Integrity • Trust • Service

## HITS GUIDING PRINCIPLES

Business needs drive IT solutions. Utilize a governance structure to align efforts with business goals.

Identify and exploit common business functions and processes across departments when implementing new technologies.

Leverage existing technology platforms before procuring new systems that perform similar or duplicative functions.

Leverage process automation and machine learning (ML) to speed operational adjustments & augment human intervention.

Evaluate business processes for re-design opportunities (don't automate bad processes!).

Buy before build – leverage common-off-the-shelf solutions over custom COTS or internally developed solutions.



# HITS STRATEGIC PRIORITIES

## OPTIMIZE CITY OPERATIONS

Optimize City operations to align business needs to ensure security, reliability, resiliency, cost, and operating efficiencies

Build next generation IT foundation and capabilities to enhance mobility, collaboration, capacity, and agility

- Plan and forecast to right-size IT solutions
- Design infrastructure & applications for resiliency to optimize uptime and availability according to business need
- Implement best practice frameworks to improve efficiency and achieve predictable service delivery
- Choose cloud first where it makes business sense to enable flexible and agile scaling
- Prioritize technology solutions that are modern, supportable, sustainable, and scalable
- Create, communicate and enforce core IT standards

Security & risk management controls align with the City's risk tolerance and external factors

- Ensure a defensible architecture
- Secure data and applications
- Mature security center operations
- Manage third party risks
- Manage insider risks

Leverage City assets & capabilities to decrease operating expenses, increase the City's competitiveness, and economic opportunities

- Go Digital - reduce and strive to eliminate paper process
- Go Mobile - use IT solutions to enable employees to "work where they are"
- Leverage tech & innovation partnerships to expedite & optimize cost of expanding City operations
- Improve budget efficiency through responsible fiscal management



## IMPROVE DATA-DRIVEN DECISION MAKING

Improve data-driven decision making through better data access to produce actionable analysis, better decision making, and transparency

Leverage data & analytics to provide timely & actionable insights

- Establish and grow enterprise data platforms that provide centralized data to enable ease of data extraction, curation, and sharing
- Expand and improve City open data portal and data sets for open and accessible City data to support public engagement and government transparency and accountability
- Establish data governance process to achieve proper data classification, quality, integrity, and stewardship
- Energize the data community to promote a data culture by creating awareness and developing data skills across the City

## IMPROVE ACCESS TO CITIZEN SERVICES

Engage citizens through connected mobile and digital experiences to increase accessibility, participation, and satisfaction

Leverage City assets to provide easy and convenient access to City services for all constituents

- Go Digital; Go Mobile: to ensure that citizen-facing services are designed with intuitive user interfaces that simplify the citizen experience and save them time
- Leverage tech & innovation partnerships to provide digitally inclusive experience
- Increase & improve accessibility for all constituents through technology
- Sponsor and promote digital equity initiatives to increase the affordable, high-speed home internet access for residents in Complete Communities

## INSPIRE & EMPOWER EMPLOYEES

Inspire and empower employees to do their best work by developing and aligning their skills to support the strategy and leveraging the power of mobility and collaboration

Develop, retain, and recruit top-tiered workforce

- Promote a continuous learning culture and environment
- Provide professional development for business continuity and career mobility
- Promote a customer experience mindset
- Provide creative and innovative learning and research opportunities
- Cultivate innovation through adoption of prototyping, next gen tools and next gen techniques
- Continuously stimulate collaborative interaction and creative brainstorming





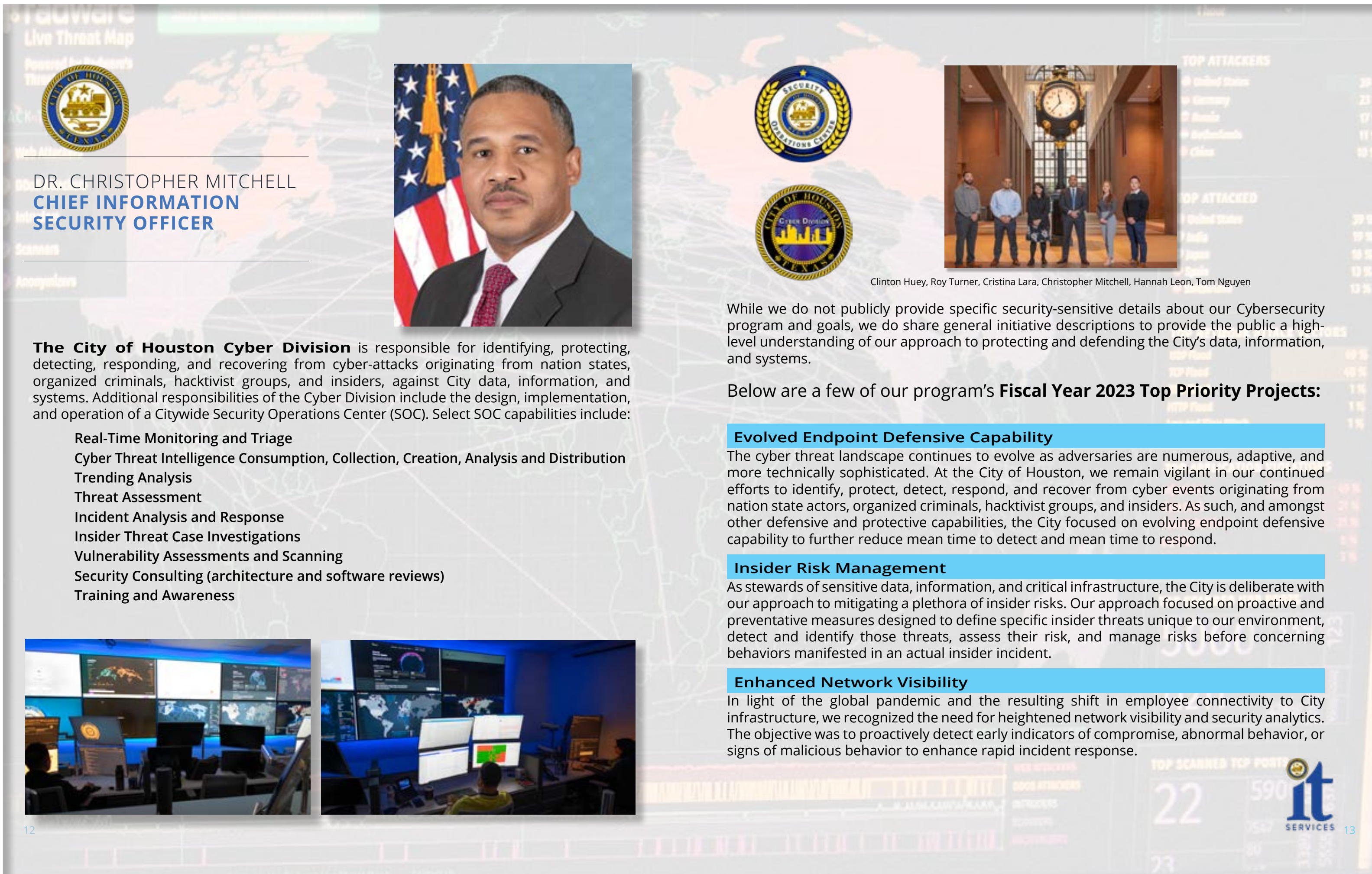
**SERVICES**

## HITS SENIOR STAFF **MEET THE TEAM**



Dr. Christopher Mitchell	Chief Information Security Officer
Bert Quarfordt	Deputy Chief Information Officer, Enterprise Infrastructure Services
Dr. Jane Wu	Deputy Director, Data Privacy & Business Operations Management
Lisa Kent	Chief Information Officer and Director
Shannon Hodge	Division Manager, Data Privacy & Business Operations Management
Summer Xiao	Deputy Chief Information Officer, Enterprise Applications Services & Project Management Office
Nicholas Curran	Assistant Director, Public Safety Communications





Live Threat Map  
Powered by RedTeam's  
Threat Intelligence  
Web Attack  
Scanners  
Anonymizers



DR. CHRISTOPHER MITCHELL  
**CHIEF INFORMATION  
SECURITY OFFICER**



Clinton Huey, Roy Turner, Cristina Lara, Christopher Mitchell, Hannah Leon, Tom Nguyen

**The City of Houston Cyber Division** is responsible for identifying, protecting, detecting, responding, and recovering from cyber-attacks originating from nation states, organized criminals, hacktivist groups, and insiders, against City data, information, and systems. Additional responsibilities of the Cyber Division include the design, implementation, and operation of a Citywide Security Operations Center (SOC). Select SOC capabilities include:

- Real-Time Monitoring and Triage
- Cyber Threat Intelligence Consumption, Collection, Creation, Analysis and Distribution
- Trending Analysis
- Threat Assessment
- Incident Analysis and Response
- Insider Threat Case Investigations
- Vulnerability Assessments and Scanning
- Security Consulting (architecture and software reviews)
- Training and Awareness



While we do not publicly provide specific security-sensitive details about our Cybersecurity program and goals, we do share general initiative descriptions to provide the public a high-level understanding of our approach to protecting and defending the City's data, information, and systems.

Below are a few of our program's **Fiscal Year 2023 Top Priority Projects:**

### Evolved Endpoint Defensive Capability

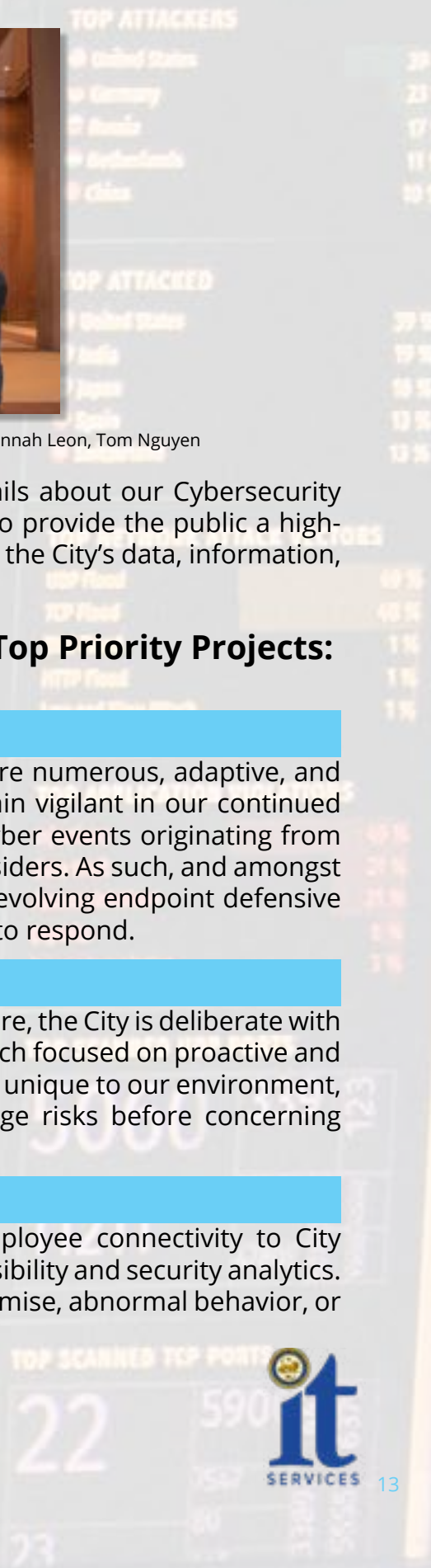
The cyber threat landscape continues to evolve as adversaries are numerous, adaptive, and more technically sophisticated. At the City of Houston, we remain vigilant in our continued efforts to identify, protect, detect, respond, and recover from cyber events originating from nation state actors, organized criminals, hacktivist groups, and insiders. As such, and amongst other defensive and protective capabilities, the City focused on evolving endpoint defensive capability to further reduce mean time to detect and mean time to respond.

### Insider Risk Management

As stewards of sensitive data, information, and critical infrastructure, the City is deliberate with our approach to mitigating a plethora of insider risks. Our approach focused on proactive and preventative measures designed to define specific insider threats unique to our environment, detect and identify those threats, assess their risk, and manage risks before concerning behaviors manifested in an actual insider incident.

### Enhanced Network Visibility

In light of the global pandemic and the resulting shift in employee connectivity to City infrastructure, we recognized the need for heightened network visibility and security analytics. The objective was to proactively detect early indicators of compromise, abnormal behavior, or signs of malicious behavior to enhance rapid incident response.







SUMMER XIAO  
**DEPUTY CIO**  
**ENTERPRISE APPLICATIONS SERVICES**  
**& PROJECT MANAGEMENT OFFICE**



**Enterprise Applications Services (EAS)**

The Enterprise Applications Services Division is responsible for providing operational support and implementation of various applications and tools that enable Citywide and departmental business functions. EAS is comprised of Enterprise Resource Planning, Data Management, Enterprise GIS, Enterprise Data Analytics, and Cloud and 3rd Party Application Management. At EAS, our primary objective is to align with Mayor's vision, HITS strategic goals, and client department business plans. By doing so, we strive to deliver value-added technology services that have a positive impact on City operations and public services.

**Project Management Office (PMO)**

The Project Management Office plays a crucial role in enabling City departments to achieve their business priorities. The PMO acts by helping departments articulate and translate their business needs into actionable technology requirements. By doing so, the PMO aims to drive greater business value by effectively managing the implementation of technology portfolios, programs, and projects, ultimately fulfilling the mission of the City of Houston.

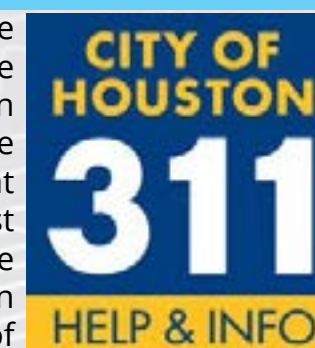


Back row left to right-Pranav Shah, Brandon Williams, Raphael Louvriere, Kalpana Pillai, Pat Brown, Jeff Snell  
Front row left to right-Patrick Gonzales, Summer Xiao, Deborah Hoffpauir, Mai Fung, Luke Chuang

**Fiscal Year 2023 Top Priority Projects**

**The 311 Mobile Application Upgrade Project**

The 311 Mobile Application Upgrade Project was undertaken to enhance the user experience for the residents of Houston when submitting service requests to the City's 311 service. For the population of over 2.2 million Houston residents and nearly 7 million in the region who regularly utilize the City's roadways and venues, this new mobile app provided an efficient and convenient platform for the public to report issues and request services. This project aimed to leverage technology to streamline the process and foster improved communication and collaboration between the City and its residents. The mobile app allows for easy attachment of pictures with automatic geo-location capabilities thereby saving time for the public and the convenience for residents to easily capture and report items as soon as they observe them while on-the-go throughout the City. Additionally, they can now conveniently engage with the City and their neighbors to stay informed about the status of requests. The successful implementation of the 311 Mobile Application Upgrade Project further improved the way residents interact with the City's 311 service.







## ENTERPRISE APPLICATIONS SERVICES & PROJECT MANAGEMENT OFFICE

### Fiscal Year 2023 Top Priority Projects

Continued

#### Open Finance Project

The Open Finance Project was driven by the vision for public transparency, innovation, and collaboration, and was recognized as a Smart 50 Awardee presented in partnership with Smart Cities Connect and Smart Cities Connect Foundation. The City of Houston Open Finance website <https://openfinance.houstontx.gov> allows



the public to access datasets and leverage simple visualizations through a user-friendly interface. By providing the public access to this data, it empowers citizens, communities, and businesses with valuable information, driving informed decision-making and fostering civic engagement.



#### Enterprise Human Capital and Benefits Management System Implementation Project

The Enterprise Human Capital and Benefits Management System Implementation Project marked a milestone in the modernization and streamlining of the City's HR operations, including Organizational Management, Personnel Management, Administration, and Benefits. With a focus on enhancing the user experience for over 22,000 City employees and retirees, this project revolutionized the way HR and benefits interactions are handled. One of the key achievements of this project was the modernized user interface that is mobile-friendly, providing greater convenience and accessibility to employees and retirees. The new interface offered enhanced functionality, enabling users to efficiently manage their HR needs from a single platform. Employees now have seamless access to crucial information such as paycheck details and can effortlessly update their personal information. The system offers a more intuitive experience for benefits enrollment and management. By eliminating the need for in-person and paper-based processes, this project significantly reduced the workload for HR users and IT administrators and made progress toward the City's Climate Action Plan goals. Now that the HR platform has migrated to the cloud, system management is simplified and more resilient, freeing up valuable time and resources. As the City continues to embrace digital transformation, this project implementation represented a crucial step forward.

## Major Projects in Progress: FY23 Significant Milestones Achieved

### Permit and Inspection Management Systems Implementation for Houston Permitting Center Project

The Houston Permitting Center (HPC) is one of the largest permitting organizations in the country. HPC is replacing its Permit and Inspection Management Systems with a new system known as HouPermits under this multi-year project. This strategic decision aimed to minimize the risks associated with outdated technology, ensuring the continuity of critical business operations. The implementation of HouPermits, will transform the permitting and inspection process, streamlining operations from inception to completion. HouPermits will provide a web-based platform with a seamless experience for users engaging in the permit application process and empower community members to save time and experience greater convenience when engaging with our services with improved permitting self-service tools. The design phase of the project was completed in FY23 and HPC users were able to participate in initial previews of the system.



Scan the QR code to find out more about the amazing benefits of HouPermits!

<https://www.houstontx.gov/hits/hou-permits-video.html>



#### Computer Aided Dispatch System Modernization Assessment Project

The Computer Aided Dispatch System Modernization Assessment Project was undertaken to plan enhancements for the City's public safety 911 Computer Aided Dispatch (CAD) system. While Greater Harris County 911's system processes 911 telephone calls, the City's CAD and other dispatch systems convey the information digitally to dispatch first responders. Soon both Greater Harris County 911 and the City of Houston will have "Next-generation 911" (NG911) capabilities working seamlessly together. NG911 will enhance emergency number services to create a faster, more resilient system that allows voice, photos, videos, and text messages to flow seamlessly from the public to the 911 telephone network and ultimately to the City's Computer Aided Dispatch system. This enhanced functionality will lead to faster, more effective delivery of emergency services to Houstonians. In FY23 this assessment completed the planning phase of the project by establishing detailed scope and funding requirements for this project. Looking ahead, the project's focus will shift towards the procurement of the new next-generation CAD system in FY24. With the comprehensive financial estimates and a well-defined upgrade plan in place, we are better prepared to implement this crucial project.





## ENTERPRISE APPLICATIONS SERVICES & PROJECT MANAGEMENT OFFICE

### Fiscal Year 2023 Top Priority Projects

Continued

#### PlatTracker and Historic Preservation Tracker Replacement Project

The PlatTracker and Historic Preservation Tracker Replacement Project has significantly streamlined the Planning & Development Department's processes relating to platting applications for real estate development and historic preservation. The PlatTracker enables land planners, civil engineers, and surveyors to effortlessly submit subdivision plat applications for review and presentation to the Houston Planning Commission. Through this system, applicants and the public can easily monitor the progress of plat applications. Moreover, regional agencies that have an interest in land development in Houston can utilize the PlatTracker to exchange files and provide comments to the planning staff for each application. Furthermore, the general public has a convenient access to information regarding land development proposals in their respective neighborhoods. By utilizing the PlatTracker, individuals can view and download Planning Commission agendas, data spreadsheets related to applications, and meeting minutes. This enhanced transparency empowers residents to stay informed and actively participate in the planning process. The Historic Preservation Tracker enables historic property owners and their agents to submit and track the progress of Certificate of Appropriateness applications online. The project will also incorporate business intelligence tools, enhancing City operations, decision making processes, and transparency. Additionally, the public benefits from improved self-service options for the Planning Department's activities, resulting in time savings and enhanced convenience. These advancements not only save valuable time but also provide greater ease of access for both the City and the public. When the project is completed, the City will have taken a crucial stride towards modernizing its technological infrastructure and optimizing operational efficiency. This project is forecasted to go-live in FY24.



#### Citywide Contract and Procurement Management System Implementation Project



The Citywide Contract and Procurement Management System Implementation Project will streamline the way the City handles procurement and contract management processes through automated workflows and modern technology. This multi-year implementation project aims to provide a system in which vendors will be able to interact with the City through a public portal and exchange data through connected electronic systems. This will make it easier for vendors to conduct business with the City by having access to their procurement activities electronically. The project will implement electronic data transfer of purchase orders and invoices. For participating vendors, this will eliminate the need for City and vendor staff to manually process and track invoices and purchase orders. This will reduce errors, improve payment processing for vendors, and reduce the workload on staff. Additional enhancements to contract monitoring will provide automated notifications

when contracts reach defined thresholds for either net contract value or expiration. The reporting enhancement will ensure that staff receive notifications early enough to renew contracts or initiate a new solicitation. Business intelligence such as a comprehensive view of all current solicitation events will reduce separate manual processes, improve communication and collaboration for procurement planning. A holistic view of all procurement events will also help with prioritization to ensure resources are directed towards the most important activities. The new system will also define workflows for each procurement activity which will reduce employee training time and increase process compliance. This project is expected to go-live in FY24.







DR. JANE WU  
**DEPUTY DIRECTOR  
DATA PRIVACY & BUSINESS  
OPERATIONS MANAGEMENT**



**The Data Privacy & Business Operations Management Division (DBM)** provides data privacy and information technology operational services and support.

DBM is responsible for ensuring City data privacy and security compliance by City collaborators, vendors, and other third parties through contractual agreements. Data privacy laws, cybersecurity standards, and regulatory guidelines continue to expand and change. All entities, including the City, contend with controlling and safekeeping personal and private data. DBM supports in mitigating risks to this data and strives to ensure contractual data security compliance.

Additionally, **DBM provides services and support in these primary areas:**

- IT contract administration and compliance
- City Council actions
- Technology procurement coordination
- Spending financials and analysis
- Invoice processing
- Asset management
- Texas Public Information Act requests
- Assistance with legal holds and electronic discovery support
- Departmental policies
- Administrative support

In FY23, DBM processed through and received approval for 44 Council Actions from Houston City Council with a total value of **\$234,766,739.11** in approved contracts. DBM's contract management portfolio currently includes 105 HITS-managed technology contracts with a total value of **\$588,042,486.81**



*Back row left to right- Merica Arceneaux-Carter, John Bowling, Nereyda Rodriguez, Sue-Anne Kolarik, Shannon Hodge, Yvonne Melendez, Cassandra Brown, Shanna Monckton  
Front row left to right- Antonio Ruiz, Angel Vasquez, Andrea Hernandez, Jane Wu, Carolyn Jackson, Michelle Dunn, Olivia Simpson*

In line with DBM's goals of efficient and effective business operations, DBM continuously strives to provide tangible benefits to the City, including:

**Saving the City money**

By negotiating and locking in pricing for multi-year contracts when it's appropriate. This avoids price increases on products and services for the City while establishing maximum savings over the term of the contract.

**Saving the City time**

By consolidating agreements and negotiating multi-year contracts. This allows City personnel to deploy their efforts to additional initiatives and projects thereby increasing overall productivity.

**Providing value over time**

By securing the latest proven technologies for products and services that meet the City's needs. This maximizes product and service lifecycles and support while effectively extending product usefulness for all employees and stakeholders.

The Data Privacy & Business Operations Management Division ensures City data privacy and security compliance and provides operational support in line with Houston Information Technology Services' mission to provide solutions that serve, protect, and enlighten the residents and visitors of Houston.







BERT QUARFORDT  
**DEPUTY CIO**  
**ENTERPRISE INFRASTRUCTURE SERVICES**



**The Enterprise Infrastructure Services (EIS) Division** provides mission critical infrastructure services 24/7/365 to the City's diverse group of departments. The EIS Division is responsible for building next generation IT infrastructure and capabilities to enhance capacity, agility, and resilience of the City's technology systems and services. Our major work groups include:

**Data Center Services** include Active Directory, data center management, on premise and cloud server and storage, and monitoring, patching, and backup services.

**Network Services** include data network and network security design, administration, maintenance, and support Citywide.

**Telecommunication Services** include voice and communications services, with a focus on Voice over IP - VoIP, Call Center platforms, cellular, fax, and other digital and analog communications technologies.

**End User Services** include desktop management, managed print services, Microsoft 365 Collaboration Tools, and service desk support.



Stephen Albert, Anthony Evgan, Chris Taylor, Lorena deAlejandro, Alexis Westmoreland, Bert Quarfordt, Julian Hernandez, Alex Jean, Rick Nicholson, Sunny Coleman, Gaston Merino

**Fiscal Year 2023 Top Priority Projects**

**Computer Aided Dispatch (CAD) Infrastructure Refresh Project**

The Computer Aided Dispatch (CAD) system is a key component of the City of Houston's public safety solution that enables 911 call takers to document 911 calls for service and share information with first responders. The EIS infrastructure team replaced the current end-of-life CAD compute and storage environment to ensure this mission critical system continues to function in a high-availability configuration while we plan the migration to our new next-generation CAD system. When seconds matter and lives are on the line, the City's CAD system can be counted on.







## ENTERPRISE INFRASTRUCTURE SERVICES

### Fiscal Year 2023 Top Priority Projects

*Continued*

#### Data Center Consolidation Project in progress and coming soon!

We've adopted a cloud-first strategy to shorten the time needed to scale up compute and storage resources to meet the changing needs of the public and City departments. By December 2023 this project will complete consolidation from three local data centers to two, move more services to the cloud leveraging Software-as-a-Service (SaaS) and Infrastructure-as-a-Service (IaaS) offerings, and retire several legacy systems. These actions collectively provide greater peace of mind that City services are resilient, scalable, and available when Houstonians need them.



#### Contact Center Migration to Cloud Project in progress and coming soon!

The City has over 35 Contact Centers that support more than 5 million calls from Houstonians annually. Among these, the largest call handling contacts centers are 311, Water Utility Customer Account Services, and the Houston Health Department. The objective of this project is to migrate the City's contact center environment to a hosted cloud solution managed by a world-class cloud service provider. With our new next-generation tools the City will transform our interactions to consistently provide customers with engaging experiences while simultaneously strengthening the reliability and security of our citizen-facing communications channels.



#### Fire Station Emergency Alerting System Replacement Project – in progress!

Across the City's 93 fire stations, Fire Department and Emergency Medical Service (EMS) first responders have only seconds to be geared up and onboard emergency vehicles in response to emergency calls for service – day or night. The Fire Station Emergency Alerting System (EAS) serves as a crucial means to notify and prepare first responders for their rapid departure. Upon receiving the dispatch alert, this system automatically turns on the fire station lights, audibly announces the details of the dispatch instructions over station intercoms, displays the text instructions on digital monitors for quick reference, and opens the fire station bay doors to enable trucks to roll in a matter of seconds.

These technology-enabled steps help shave minutes off the first responder time to arrive on scene, which saves lives and property for Houstonians. However, the current EAS system is at end-of-life and is not meeting operational requirements. In FY23 the City completed the evaluation and selection

of a new state-of-the-art solution designed for rapid response times, seamless integration with existing communication systems, redundant architecture, scalability for expansion, and the ability to adapt to emerging technologies and features. In FY24 the implementation phase will equip each of the 93 fire stations Citywide with this next-generation technology.







NICHOLAS CURRAN  
**ASSISTANT DIRECTOR**  
**PUBLIC SAFETY COMMUNICATIONS**



**The Public Safety Communications Division (PSC)** provides high availability regional public safety radio communications to the Houston Metro area. The PSC division manages more than 20,000 subscriber radios fully interoperable across more than 50 radio tower sites and other regional radio systems throughout the City of Houston’s 655 square miles.

**The Field Systems team** provides operations, maintenance, and repair services for the P25 standards-compliant radio network infrastructure at each of the radio tower sites (tower, building, and electronics), dispatch console sites, and all related network services. This includes an extensive microwave radio system that provides backhaul services between all the various sites. This team also manages all the supporting physical plant assets (air conditioners, generators, tower lighting, security cameras, etc.) at each of the sites.

**The Radio Programming team** works with internal and external users to customize radio programming templates that determine how radios interact with the system and with each other. This requires in-depth consultation with customers and an encyclopedic knowledge of the features and functions of the radios.

**The Radio Network Operations Center (NOC) team** provides monitoring of the various systems components, processes alarms, creates service requests, and dispatches technicians from the appropriate radio team to handle the requests.

**The Radio Customer Services team** provides operations and maintenance of the public safety radio subscriber devices (mobile and portable), alerting systems within each fire station, computer systems within fire apparatus, and miscellaneous radio systems and devices.

**The Radio Administrative Services team** provides management, asset control, billing, training, analysis of both system and business processes, and budgeting services. The team coordinates the Division’s efforts for special events to include sporting events (Texans, Astros playoff games), Chevron Marathon, MLK Parade, Freedom Over Texas, MS150 Bike Ride, hurricane exercises, dignitary visits, and a myriad of other events.



James Henk, Nicholas Curran, Larvonda Fonteno







## PUBLIC SAFETY COMMUNICATIONS

### Fiscal Year 2023 Top Priority Projects

#### Houston Police Department (HPD) Subscriber Radio Refresh Project



The Houston Police Department (HPD) Subscriber Radio Refresh Project is a priority initiative aimed at equipping HPD with modern portable and mobile radios to replace their outdated models that have reached the end of their lifecycle and support. This project procured and configured over 7,000 radios which provide the fundamental of push-to-talk functionality, but also incorporate various advanced features, offering HPD improved visibility and enhanced coverage and range compared to their previous radios. The updated portable radios, which are worn on the belt, utilize a range of LTE broadband (cellular) capabilities that speed up officer response time, including location mapping, multi-media messaging, and a virtual

assistant. The location mapping features are available in two forms: firstly, officers can view each other's locations on a map directly from their radios; and secondly, the dispatch center is equipped with a map that provides the same level of visibility. These new features significantly enhance every officer's situational awareness before, during, and after an incident, ensuring officer safety as well as faster response times. Furthermore, the new mobile radio installed in HPD vehicles offer increased connectivity through Wi-Fi. This Wi-Fi integration allows technical support staff to efficiently update the radio's software and programming without taking the vehicle out of service, ensuring officers and vehicles spend more time responding to public safety emergencies and less downtime in the maintenance shop. The HPD Subscriber Radio Refresh Project represents a crucial investment in modernizing communication equipment for the department, enabling officers to leverage cutting-edge functionalities that enhance their effectiveness and safety in the field. Houston is one of the first municipalities in the State of Texas to deploy this cutting-edge radio technology at scale, continuing our commitment to use technology as a force multiplier for public safety.

#### Radio System Coverage Analysis Project

In the past decade, the City of Houston and its Metro area have undergone significant expansion in population and land development. The objective of the Radio System Coverage Analysis Project was to re-evaluate the radio system's effectiveness in the region. Key areas of consideration encompass the emergence of new high-rise buildings, the development of neighborhoods, and the establishment of shopping centers. It is worth noting that the City's radio system caters to the needs of all City departments and more than 40 partner agencies operating in the region. The radio system provides APCO25 (also known as P25) standards-compliant land mobile radio interoperability communications to more than 20,000 users. Radios that are fully P25 interoperable enable communication between different agencies and organizations even if equipment from different manufacturers are utilized. This is especially crucial during large-scale emergencies or mutual aid situations where multiple agencies need to work together. To ensure seamless coverage and effective communication, it is essential to identify areas where radio coverage has been compromised. The outcomes of the study served as a foundation for future system enhancements, including the construction of new towers or the upgrade



of existing infrastructure in locations where diminished radio coverage has been detected. This enables the City to provide high-availability public safety communications services wherever first responders need it so that they can focus on protecting the lives and property of Houstonians.



# HITS AWARDS & RECOGNITIONS

It is with great pleasure and pride we highlight some of our awards and accomplishments for the past year. As we reflect on these achievements, the HITS organization undeniably has made remarkable strides in leveraging technology to drive innovation, enhance operational efficiency, and deliver exceptional value to our stakeholders and to the residents and visitors of Houston.



**Lisa Kent, Chief Information Officer (CIO)**  
**Awarded City Executive of the Year**  
for the LocalSmart Awards by State Scoop, the leading national media publication for state and local government.

Lisa Kent, the Chief Information Officer (CIO) of the City of Houston, has been recognized for her outstanding leadership and achievements. She was awarded the prestigious City Executive of the Year by State Scoop's LocalSmart Awards, which honors the visionaries who transform local government to make a difference in citizens' lives. The LocalSmart awards celebrate the achievements of those who work to make a lasting impact in the government IT community.

As the CIO, Director Kent leads the Citywide Information Technology Services, serving approximately 22,000 employees across 23 diverse departments and equipping them to deliver critical services to Houstonians across public safety, utilities, transportation, community services, and financial categories.

Director Kent's focus is to shape the City's technology vision, strategy, and performance. Her efforts are aimed at establishing Houston as a leading digital city that utilizes technology to enhance the citizen experience, improve operational efficiencies, and promote government transparency and innovation.

## City of Houston's Open Finance Project

The City of Houston's Open Finance Project has achieved significant recognition and success over the past year. It has been selected as a Smart 50 awardee, an esteemed honor that celebrates the 50 most transformative smart projects worldwide. This recognition showcases the project's effectiveness in leveraging technology and data to improve City operations and enhance the lives of residents. The City of Houston Open Finance website provides accessible datasets, intuitive visualizations, and a user-friendly interface, and enables the public to easily access and analyze public data. This transparency not only fosters trust and accountability but also encourages innovation and collaboration among stakeholders. The Smart 50 Awards, presented in partnership with Smart Cities Connect and Smart Cities Connect Foundation, annually acknowledge outstanding smart city initiatives from around the globe. Being recognized as one of the most innovative and influential projects demonstrates the City of Houston's commitment to leveraging smart technologies for the betterment of its residents and the broader community.

Overall, the City of Houston Open Finance project's inclusion in the Smart 50 Awards highlights its transformative impact, ability to increase transparency, promote innovation, and foster collaboration. It serves as a testament to the City's dedication to utilizing technology and data-driven approaches to enhance the quality of life for its citizens.



**Dr. Christopher P. Mitchell, Chief Information Security Officer Named Cybersecurity Defender of 2023 for the Americas**  
by CISCO for the Global Advocate Award.

Dr. Christopher P. Mitchell, the Chief Information Security Officer (CISO) of the City of Houston, has been honored with the prestigious title of Cybersecurity Defender of 2023 for the Americas by CISCO. This recognition is part of the Global Advocate Awards presented by CISCO. Dr. Mitchell's expertise and dedication in the field of cybersecurity have earned him this esteemed accolade.

With a distinguished background, including service in the United States Navy and employment with major aerospace and defense organizations, Dr. Mitchell brings a wealth of experience to his role as the CISO. He is responsible for safeguarding sensitive data in Houston, a city that faces constant threats due to its visibility as the fourth largest city in the United States, and importance as the host of the 2026 World Cup, the presence of the NASA Johnson Space Center, the largest medical center in the world, and one of the largest ports in the country. Dr. Mitchell's commitment to knowledge sharing and collaboration is highly commendable. Under his leadership, a culture of excellence has been established within his team, emphasizing the critical nature of cybersecurity for the millions of people who rely on their protection. His innovative approaches, collaborative mindset, and unwavering determination have made a significant impact in the cybersecurity field, earning him the recognition and honor of the CISCO Global Advocate Award.

Dr. Christopher P. Mitchell's achievement as the Cybersecurity Defender of 2023 for the Americas underscores his outstanding contributions and leadership in the realm of cybersecurity. His expertise, dedication, and commitment to excellence have played a pivotal role in safeguarding Houston's critical data and establishing a culture of cybersecurity awareness and protection.





# HITS AWARDS & RECOGNITIONS

continued



## ETHAN (Emergency Telehealth and Navigation) Project

The ETHAN project has achieved significant recognition and success in delivering emergency telehealth and transport solutions to the City of Houston. This project was honored with the prestigious IDC SmartCities award in the Public Health and Social Services category. ETHAN has been instrumental in conserving valuable ambulatory and emergency room resources while ensuring patients receive the necessary care through alternative channels. Since 2014, the City of Houston Fire Department has been actively leveraging ETHAN, serving a population of 2.3 million and handling over 300,000 calls for service. The ETHAN platform has revolutionized healthcare delivery by providing emergency telehealth services to residents and visitors alike, resulting in over 30,000 virtual visits conducted by Emergency Medicine Physicians using teleconference software. These virtual visits offer patients a comprehensive exam room experience regardless of their location, with an impressive average response time of approximately six minutes.

One of the key benefits of ETHAN is its ability to manage EMS patients in the prehospital setting. Studies indicate that 35% of Emergency Department visits could be effectively treated in alternative settings, reducing costs associated with high-cost destinations and modes of transportation. ETHAN has successfully addressed this issue, offering appropriate care and treatment to patients in need, ultimately alleviating the strain on Emergency Departments.

Overall, the ETHAN project has made remarkable strides in improving healthcare accessibility and resource allocation in the City of Houston. Through its innovative telehealth and transport solutions, ETHAN has not only saved critical resources but also ensured that patients receive timely and appropriate care, regardless of their location. The recognition received through the IDC SmartCities award further reinforces the project's significance and success in the realm of public health and social services.

## ETHAN recognized by Microsoft Corporation's Customer Stories for Microsoft Teams and Power BI.

The Emergency Telehealth and Navigation (ETHAN) solution has achieved remarkable success which was recognized in Microsoft Corporation's Customer Stories. By leveraging Microsoft Teams, ETHAN has transformed the City of Houston's EMS system, revolutionizing patient care and resource management.

ETHAN allows 911 callers to receive preliminary examinations through video conferencing with emergency physicians, enabling remote triage and rerouting of non-emergency cases. This approach has significantly reduced overcrowding in emergency rooms, saved public resources, and improved patient outcomes. Microsoft Teams ensures compliance with HIPAA regulations, safeguarding patient privacy.



ETHAN is integrated into Houston fire trucks and ambulances, connecting on-site personnel with board-certified emergency department physicians. Approximately 90% of patients are directed to alternative transportation methods, reducing costs for patients, hospitals, cities, and insurance companies.

Using Microsoft Power BI to analyze ETHAN data allows the generation of real-time insights and optimization of resource allocation. This has streamlined the dispatch system and identified areas for improvement, saving time and staffing resources previously spent on manual reporting.

During the COVID-19 pandemic, ETHAN played a crucial role in handling low-acuity calls and relieving pressure on emergency departments. The program's success has garnered attention from medical communities nationwide, serving as a model for telehealth, data analysis, and program assessment using Microsoft tools.

HFD's accomplishments with ETHAN have motivated the pursuit of a financially sustainable business model to ensure continued success and expansion. Dr. David Persse, Director of Emergency Medical Services envisions widespread adoption of telehealth solutions like ETHAN, highlighting the potential for substantial cost savings in American healthcare and positioning it as a significant initiative for the next decade.



## Solid Waste Management Smart Trucks Rubicon Project

The City of Houston Solid Waste Management Smart Trucks Rubicon Project achieved significant recognition and success

in the past year, as it was chosen as a finalist for the prestigious IDC 2023 Smart Cities Awards. This project involved the transformation of waste pickup trucks into Smart Trucks, utilizing the innovative Rubicon SmartCity technology suite.

Through the implementation of this technology, the City of Houston experienced a comprehensive and intelligent management system for its waste and recycling activities. Rubicon equipped trash trucks with advanced features, including real-time truck location tracking, monitoring of waste load amounts, detailed route stop information, and the ability for drivers to capture property images if waste collection was hindered.

The Rubicon SmartCity technology suite brought about a multitude of benefits for the City's waste management efforts. By optimizing pickup routes based on transparent data points from current routes, Rubicon significantly enhanced resource utilization. This optimization helped streamline operations, reducing inefficiencies and maximizing the efficiency of waste collection and recycling services. Furthermore, the implementation of the Rubicon Smart Truck technology improved oversight and provided a smarter approach to alleviating resource and manpower constraints for waste management in Houston. The ability to track truck locations and monitor waste load amounts in real time enabled better coordination and planning, bringing a data-driven approach to improving service delivery and customer satisfaction.

The recognition received as a finalist for the IDC 2023 Smart Cities Awards is a testament to the City of the project's use of technology as a force multiplier for improved waste management.











**HITS provides enterprise technology enabling 23 City departments to deliver citizen services. These services span 600+ city facilities, 3,000 voice/data circuits, 14,000 telephones, 38 call centers, 60,000+ network drops, 900+ servers, 3 local data centers plus cloud IaaS and PaaS environments, 17,000 Office 365 enterprise users, the nation's largest land mobile radio system supporting 18,000+ public safety radios for city and 30 external agencies, and a variety of enterprise applications, web and GIS services for 21,000 employees.**

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