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fy 2024

SERVICES



As the Chief Information Officer for the City of Houston and Department Director of the Houston IT Services department, it is a great pleasure to present this Houston Information Technology Services Annual Accomplishments Report for Fiscal Year 2024 (July 1, 2023 through June 30, 2024). This report highlights the remarkable strides we've made under the leadership of Mayor John Whitmire, offering an overview of our organization, teams, achievements, and the significant milestones that have impacted both residents and visitors of Houston.

Over the past year, our dedicated team of IT professionals has been instrumental in driving progress on Mayor Whitmire's four strategic objectives: improving public safety, enhancing infrastructure, building a more efficient government, and raising the quality of life in our community. By harnessing modern technologies like cloud computing and data analytics, we've supported the initiatives to make Houston a safer, more efficient, and more inclusive city.

Within this report you will find details on key initiatives and projects, including their impact on the City of Houston and the residents of Houston. Our commitment to digital transformation focuses on people, processes, and technology. For example, we've implemented solutions that improve public safety through advanced emergency response systems and infrastructure enhancements. Moreover, we are helping to create a more effective government by promoting transparency, accountability, and resilience through data-driven governance.

We are proud of our accomplishments and remain steadfast in our mission to deliver innovative IT solutions that support Houston's goals. On behalf of Houston IT Services, I extend our deepest gratitude to our dedicated teams, stakeholders, residents, and partners. Together, we will continue to build a digitally empowered community, fostering a future where individuals, families, and businesses can thrive in Houston.

LISA KENT
**CHIEF INFORMATION OFFICER
& DIRECTOR**

HITS SENIOR STAFF MEET THE TEAM

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



it SERVICES

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

Lisa Kent
Chief Information Officer
and Director

Dr. Jane Wu
Deputy Director, Data Privacy &
Business Operations Management

Shannon Hodge
Division Manager, Data Privacy &
Business Operations Management

Bert Quarfordt
Deputy Chief Information Officer,
Enterprise Infrastructure Services

Summer Xiao
Deputy CIO, Enterprise Applications
Services & Project Management Office



Dr. Christopher Mitchell
Chief Information Security Officer

Nicholas Curran
Assistant Director, Public Safety
Communications

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.



it
SERVICES

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 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



HITS ACCOMPLISHMENTS 2023/2024

Evolved Cyber Defensive Capability

The cyber threat landscape continues to evolve as adversaries are numerous, adaptive, and more technically sophisticated. As a result, HITS continued to evolve our cyber defensive capability by focusing on integration and automation to provide comprehensive threat detection, investigation, and response.

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, including data loss prevention initiatives, designed to define specific insider threats unique to our environment.

Enhanced Threat Hunting Capability

HITS continued our proactive approach to identifying, protecting, detecting, and responding to a range of threat actors. A major component of our approach is actively searching for potential threats and vulnerabilities to the City. This approach has helped to detect advanced threats, reduce dwell time, and identify insider risks.

BIZ with HOU Project

The BIZ with HOU Project went live this fiscal year, making it easier for the City and our vendors to do business. This multi-year project provides a system that vendors can interact with the City, such as exchanging information and documents, using a public portal — no more submitting paper bids! BIZ with HOU also implemented electronic data transfer of purchase orders and invoices. For participating vendors, this eliminates the need for City and vendor staff to manually process and track invoices and purchase orders thus reducing errors, improve payment processing for vendors, and lessening the workload on staff. This BIZ with HOU system reduces the timeline for City procurement activities, which will improve the overall public experience, since City departments depend on vendors to provide critical and timely services.

Visit this link to learn more - <https://www.houstontx.gov/bizwithhou/>

Houston Water Bill Improvement Plan

Unpredictable and incorrect water billing is ranked as one of the top initiatives for resolution by the City. To swiftly alleviate this important resident concern, the Houston Water Bill Improvement Plan includes temporarily billing resident households at a flat rate until all remote water usage readers have been replaced allowing for more accurate water usage data. HITS assisted Houston Public Works by analyzing past water usage data for over 300,000 households and recommending options for fixed cost billing amounts. This allows HPW more capacity to focus on replacing outdated water meter reading devices instead of checking on usage data. To gain public trust and provide transparency, HITS and HPW developed a public dashboard where Houstonians can see the ongoing progress of the replacement efforts for their account, City Council district, and neighborhood.

Visit this link to learn more - <https://www.houstonpublicworks.org/improvewaterbills>

HITS ACCOMPLISHMENTS 2023/2024

MyCOH Time

Tracking time and attendance accurately for over 20,000 City employees is a significant endeavor. HITS is currently implementing a modern Time and Attendance tracking system that is cloud-hosted and is more secure, reliable, and accessible via mobile, desktop, and clock devices. Employees will be able to manage their schedules, overtime, and leave requests seamlessly on any device. This project will reduce manual paper processes across the City and speed up overtime and leave approval timelines. This new system will reduce errors and rework, and result in paying City employees faster with more accuracy and with less resource burden. This project is forecasted to go-live next fiscal year.

PlatTracker and Historic Preservation Tracker Replacement

Houston, a city known for its rapid evolution and vibrancy, faces a dual challenge of managing real estate growth and preserving its rich history. The multi-year PlatTracker and Historic Preservation Tracker Replacement Project represents a pivotal initiative by the Planning & Development Department to streamline these critical processes. The PlatTracker simplifies the submission of subdivision plat applications, facilitating efficient review by the Houston Planning Commission. This digital platform enables real-time monitoring of application progress, benefiting both applicants and the public. It fosters collaboration among regional agencies involved in Houston's land development, enhancing file exchange and feedback mechanisms. Moreover, the platform provides the public with unprecedented access to vital information on land development proposals within their communities. Residents can easily access Planning Commission agendas, application-related data spreadsheets, and meeting minutes, promoting transparency and community engagement. Concurrently, the Historic Preservation Tracker empowers historic property owners and their agents to submit and track Certificate of Appropriateness applications online. This innovation not only improves accessibility but also integrates seamlessly with business intelligence tools enhancing operational transparency of the City. This project is on track for implementation in the upcoming fiscal year, promising substantial benefits for stakeholders and reaffirming the City's dedication to sustainable growth and historical preservation.



HITS ACCOMPLISHMENTS 2023/2024

Houston Police Department Radio Replacement

Dependable and clear communication is critical to our law enforcement officers. HITS worked with the Houston Police Department and their radio support team, and have completed deploying over 5,000 new, advanced, and reliable portable (on the hip) radios to every officer. With the radio deployment, each officer gained GPS location and mapping, multi-media messaging, and voice call access priority services to the radio system through a secure LTE Broadband carrier network. These additional services provide each officer with better situational awareness and confidence that they will be able to get help when they need it.

Optimizing Cost with New Broadband Communications Solutions

As the costs of radios increases, HITS found a way to provide cost savings for non-first responder City departments by leveraging LTE broadband devices with network priority for push to talk calls. This option allows for these departments to upgrade their aging radio fleet without the need to purchase a new radio. This shift to the use of existing LTE broadband will save the City over two thousand dollars for each radio. HITS has successfully tested these devices and has turned them over to the departments for strategic evaluation and potential implementation.

Radio Infrastructure Upgrades

In response to Houston's unpredictable weather, HITS has proactively upgraded the radio infrastructure, including tower antennas and the uninterruptible power supplies, to maintain high system availability and ensure continued operations.

Radio Antennas mounted on towers are the primary link for radio communications for all City's public safety radio system users. These antennas are designed to withstand outdoor conditions year-round and consistently enduring Houston's volatile weather. HITS replaced the radio antennas that have reached the end of their useful life, with full antenna systems at four sites this fiscal year. HITS plans to also replace the antennas at fifteen additional sites in fiscal year 2025.

Radio towers depend on the supply of reliable and continuous power. While generators will sustain these towers until power is restored, there is a gap period between power loss and generator activation. Uninterruptible Power Supplies (UPS) are used to ensure the radio systems at the tower sites remain operational during a power failure while the generators are coming online. The batteries in the UPS are at the end of life and need to be replaced. HITS had identified replacement batteries with remote monitoring capabilities. These capabilities allow our Network Operations Center to remotely check the power status of the tower sites. HITS replaced the battery banks at four critical sites this fiscal year, with a similar target next fiscal year.

Enhanced Radio Interoperability for Area Law Enforcement Agencies

HITS provides emergency radio services to various law enforcement agencies and emergency services in the Greater Houston Area. HITS developed a method that was tested and approved by Houston Police Department providing for certain encrypted tactical channels available on our radio equipment to be shared with our partner law enforcement agencies while still retaining secure encrypted services exclusive to HPD. This project has played a key role in expanding and enhancing radio interoperability for all law enforcement agencies in the Greater Houston Area.

HITS ACCOMPLISHMENTS 2023/2024

Computer Aided Dispatch (CAD) Infrastructure Refresh Project

Communication is paramount to public safety and for the performance of our first responders. The Computer Aided Dispatch (CAD) system is a key component of the City's public safety solution enabling 911 call takers to document 911 calls for service and share critical information with first responders. HITS replaced the current CAD compute and storage environment that was at end of life to ensure this mission critical system continues to function with high availability as we plan to migrate to a new next-generation CAD system. In critical moments where seconds matter and lives are on the line, the CAD system's high availability and reliability are essential, providing immediate response and consistent performance.

Data Center Consolidation Project

The City's cloud-first strategy allows for shorter scale-up time to meet the changing needs of the public and City departments. Aligned with this cloud-first strategy, this project consolidated City's data centers from three to two, moved more services to the cloud leveraging Software-as-a-Service (SaaS) and Infrastructure-as-a-Service (IaaS) offerings, and retired several legacy systems that improved the overall infrastructure reliability and scalability. These actions provided us a continued flexible and easily expandable infrastructure and offering assurance that City services continue to be resilient, scalable, and available when Houstonians need them.

Contact Center Migration to Cloud Project

The City has thirty-one Contact Centers that support nearly eight million calls from Houstonians annually. Among these, the largest call handling contact centers are: 3-1-1, Water Utility Customer Account Services, and the Houston Health Department. The City's contact center environment was successfully migrated to a hosted cloud solution managed by a world-class cloud service provider. This resulted in a more reliable and secure system with improved customer service for this citizen-facing communication channel.

Fire Station Emergency Alerting System Replacement Project - in progress!

Response times are critical in a fire or medical emergency. Across the City's fire stations, Houston Fire Department (HFD) and Emergency Medical Service (EMS) first responders have only seconds to be geared up and on-board 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 enables trucks to roll in a matter of seconds. These technology-enabled steps help shorten the response and arrival times, saving lives and property for Houstonians. The current EAS system is at the end-of-life and last fiscal year, the City selected a new state-of-the-art solution designed for improved response times, with seamless integration with existing communication systems, redundant architecture, expandability, and the ability to adapt to future emerging technologies. The implementation phase began this fiscal year and this project is planned to complete next fiscal year.

HITS ACCOMPLISHMENTS 2023/2024

Network Refresh

The City's enterprise data network is the vital link that digitally connects all 23 City departments to the City's data centers, the internet, and cloud applications. Analogous to the human circulatory system, this network ensures the seamless flow of information across the City's digital ecosystem. This project is a multi-year initiative aimed at refreshing essential network equipment to guarantee the continuity of operations, increased capacity, and enhanced security. Through ensuring smooth operation of connected devices, maintaining cables and connections in optimal condition, and conducting regular maintenance of network nodes, we mitigate interruptions and ensure uninterrupted data flow. This proactive approach guarantees that our digital "body" stays healthy, reinforcing the reliability and performance of our network infrastructure. This project is instrumental in fostering a more resilient, secure, and high-performing network to support City operations.

Voice Over IP (VoIP) Upgrade

The City uses Voice over IP (VoIP) for its telephony services. This system comprises of more than 15,000 phones and provides telephony services for City personnel, emergency centers, and public safety. HITS successfully upgraded the City's underlying infrastructure to the latest equipment and system versions to ensure that the City is operating optimally and with a stable and secure environment. With its increased reliability and security enhancements, this upgrade strengthened the City's public safety capabilities.



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

Cyber Division

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. The Cyber Division operates the Citywide Security Operations Center (SOC), which capabilities include real-time monitoring and triage; cyber threat intelligence consumption, collection, analysis, and distribution; trending analysis; threat assessment; incident analysis and response; insider threat case investigations; vulnerability assessments and scanning; security consulting on architecture and software reviews; and training and awareness.



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



SUMMER XIAO
DEPUTY CIO
ENTERPRISE APPLICATIONS SERVICES
& PROJECT MANAGEMENT OFFICE

Enterprise Applications Services (EAS)

Comprised of Enterprise Resource Planning, Data Management, Enterprise GIS, Enterprise Data Analytics, and Cloud and 3rd Party Application Management. Each is responsible for the ongoing support and implementation of numerous applications and tools that enable Citywide and departmental business functions.

Project Management Office (PMO)

The Project Management Office (PMO) plays a crucial role in enabling City departments to achieve their business priorities 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.



ALPHABETICALLY - Brad Barnes, Lu-Chia Chuang, Mai Fung, Geiby George, Alicia Giles, Dalvin Glover, Patrick Gonzalez, Deborah Hoffpauir, Deepak Kizhakkayil, Raphael Louvrier, Sid Madera, Jimmie Sanders, Niyousha Soltani, Brandon Williams, Summer Xiao



BERT QUARFORDT
DEPUTY CIO
ENTERPRISE INFRASTRUCTURE SERVICES

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. EIS is composed of four major groups: Data Center Services, Network Services, Telecommunication Services, and End User Services.



LEFT TO RIGHT- Tanveer Siddiqui, Scott Stevens, Alex Jean, Omar Farooq, Lorena de Alejandro, Ronald Harris, Bert Quarfordt, Jon Phillips, Chris Taylor, Gaston Merino, Sunny Coleman, Byron Persino, Alexis Westmoreland



NICHOLAS CURRAN
**ASSISTANT DIRECTOR
PUBLIC SAFETY COMMUNICATIONS**

The Public Safety Communications Division (PSC) provides high availability regional public safety radio communications for the Houston Metro area and manages over 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 PCS Division is comprised of five functional teams: Systems, Programming, Network Operations, Customer Service, and Administrative.

These teams collaborate with various City departments such as the Houston Police Department, Houston Fire Department, Houston Public Works, Solid Waste Department, Houston Airport System, and Mayor's Office to ensure business needs are met. The PSC Division also works closely with the Houston Emergency Center (HEC) to manage and provide technical support to the HEC, and with external entities such as Harris County Radio, Greater Harris County 911, NASA, Houston Community College, Pearland Police and Fire Departments, as well as other governmental jurisdictions.



The PSC Division accomplishments in this report propelled us further toward accomplishing HITS's strategic Goal #1 by employing these strategies:

- Prioritizing technology solutions that are modern, supportable, sustainable, and scalable through subscriber radio and LTE broadband device enhancements.
- Designing infrastructure & applications for resiliency to optimize uptime and availability.

FRONT Mustafa Al Mausawi, Yvonne Melendez, Tammy McGehee, Alfonso Espadas, Zuleika Ellis, Nick Curran, Karin Anderson, Jadenne Reese, Tonya Richardson, Catina West, Uyless Jones
MIDDLE Paul Veliz, Teressa Villarreal, Khai Phi, Brandy Helms, Troy Phillips, Chayne Pieri, Tyrone McQueen, James Henk, Larvonda Fonteno, Taaliyah Garner, Heather Lemm, Jeff Havies, and Christopher Delaney,
BACK Roderick Bradley, Terence Veltz and Mark Howell



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 in line with Houston Information Technology Services' mission to provide solutions that serve, protect, and enlighten the residents and visitors of Houston.

DBM is responsible for ensuring City data privacy and security compliance by City collaborators, vendors, and other third parties through contractual agreements and compliance enforcement. Data privacy laws, cyber security standards, and regulatory guidelines continue to expand and change. All entities, including the City, contend with controlling and safekeeping City information and data. DBM supports in mitigating risks to City information and data and strives to ensure contractual data privacy and security compliance. DBM also provides information technology operational services and support, including information technology contract administration and compliance, City Council actions, technology procurement coordination, spending financials, invoice processing, asset management, Texas Public Information Act requests, eDiscovery, policies and procedures, and administrative support. In fiscal year 2024, DBM processed and received approval for 45 Council Actions from Houston City Council with a total value of over 200 million dollars in approved contracts. DBM's contract management portfolio currently includes over 120 HITS-managed technology contracts with a total value over 900 million dollars. DBM continues to strive for efficient and effective business operations and to provide financial benefits to the City of Houston, including consolidating contracts and negotiating multi-year agreements that lock in pricing thus avoiding price increases over the life of the contract.



LEFT TO RIGHT
John Bowling, Chris Fleming, Cassandra Brown, LaShanda Houston, Weona Dean, Andrea Hernandez, Shannon Hodge, Jacqueline Yii, Dr. Jane Wu, Shanna Monckton, Olivia Simpson, Ashley Jones, Sue-Anne Kolarik, Teressa Villarreal, Michelle Dunn, Katrina Bell, Arlanda Comminie



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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, multiple 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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