SEAT PLEASANT, MARYLAND

A SMART CITY OF EXCELLENCE

INFORMATION & COMMUNICATION TECHNOLOGY (ICT) STRATEGIC PLAN

TODAY, TOMORROW & BEYOND

A comprehensive plan detailing a strategy for ensuring Seat Pleasant, A Smart City of Excellence becomes an inclusive, safe, resilient, and sustainable City.

Table of Contents

Preface ***3***

Introduction ***4***

What is a Smart City? ***6***

Seat Pleasant's Smart City Journey and Digital Transformation ***11***

The Smart City Transformation to Date – ICT Deployment Highlights **12**

Revamped Website 12
Artificial Intelligence 12
'MySeatPleasant' App 13
The Center for Government Synergism (CGS) Smart City Platform 13
The SPPD Drone Program 14
Internet of Things (IoT) 15
BoardDocs 15

Seat Pleasant's ICT Vision, Mission, and Goals ***16***

Five-Year Plan **17**

Operational Efficiency & Effectiveness 17
Public Engagement 18
Public Safety & Resilience 19
Economic Development 20
Workforce Development & Education 22
Healthcare 23

Conclusion ***26***

Preface

This Information and Communications Technology (ICT) Strategic Plan is the first edition of Seat Pleasant's statement of strategies for the implementation of Smart City solutions and technologies for the betterment of the community. This plan is focused on creating a Citizen Centric Smart City that aims to improve the connectivity between citizens, businesses, and government.

Seat Pleasant, A Smart City of Excellence, and the First Authentic Small Smart City in the world has made significant investments to modernize the City's back office business systems in order to improve efficiencies and reduce waste, provide citizen centric solutions that ease interactions with government, and to improve public safety and resilience with the overall goal of improving citizen's quality of life in every aspect possible.

This plan begins by defining what a Smart City is and why Smart City transformation is important, then details the progress of the City's Smart City and Digital Transformation to date, including how the City has worked to provide access to government anytime and anywhere, and finally sets forth a vision for future technology implementations.

Technology today is an essential component of every service and function the City performs. It is no longer an accessory but a critical component of Government. The ICT Strategic Plan is a recognition that we, the City of Seat Pleasant; A Smart City of Excellence, now have the technology foundation necessary to transform government operations and services delivery. It is no longer the sole responsibility of the IT department to drive technology innovation, rather it is the responsibility of the government as a whole, including all departments to drive Smart City and Digital Transformation. Therefore, the ICT Strategic Plan will define the City's desired outcomes first before highlighting the corresponding technology solutions.

The ICT Strategic Plan was defined as the result of over a two years' worth of work, spanning the time from the signing of the City's historic agreement with IBM to begin this digital transformation to the release of our comprehensive, one-of-a-kind 'MySeatPleasant' App in 2019, and discussions among staff across all government departments including, but not limited to, the Mayor's Office, Public Engagement, Police, Public Works, and Neighborhood and Commercial Compliance, as well as outside agencies including, but not limited to, Prince George's County Government, the Prince George's County Community College, the Prince George's Chamber of Commerce, and the Prince George's County Health Department.

Mayor Eugene W. Grant

Introduction

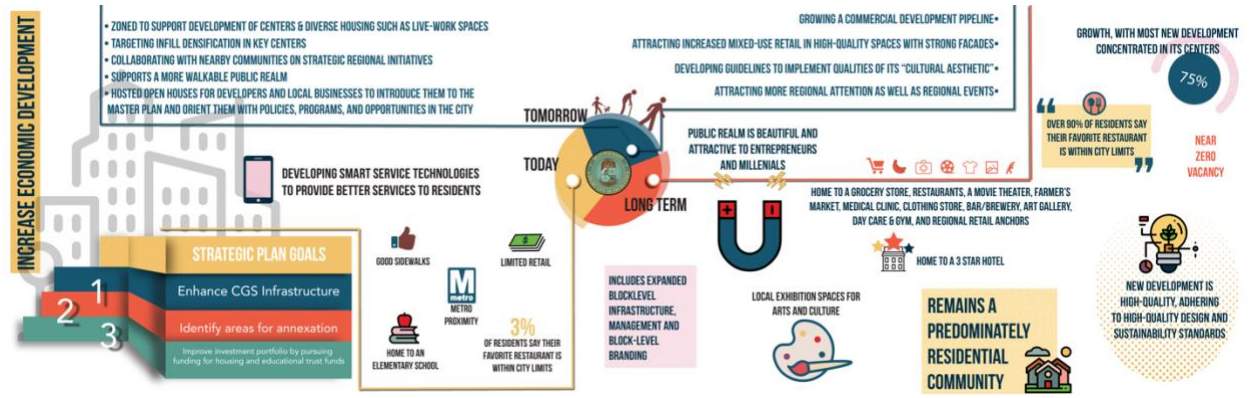
The 2019 Information and Communications Technology (ICT) Strategic Plan for the City of Seat Pleasant: A Smart City of Excellence focuses on the priorities set forth in the City's Strategic Plan and the City's Master Plan [Exhibit on page 4] including making life easier for citizens through improved service delivery and more efficient government operations.

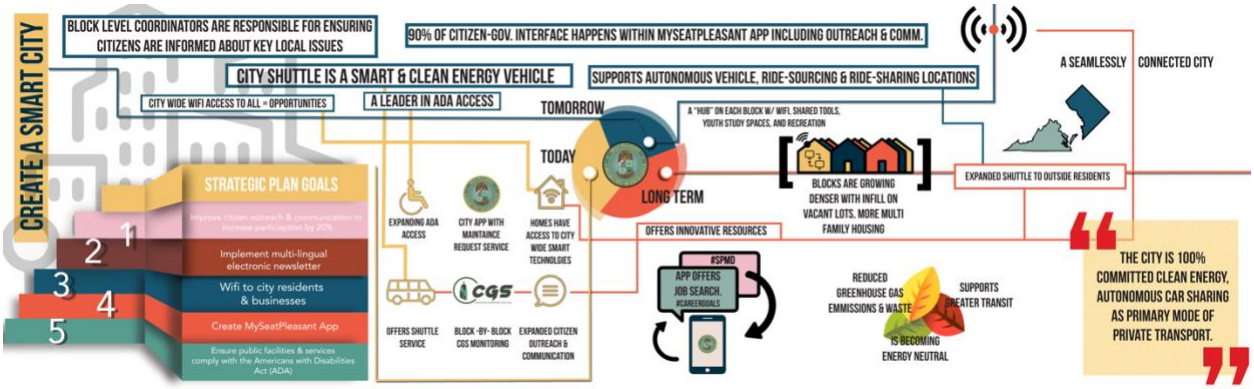
By taking advantage of the immense potential of smart city solutions and digital technologies, the City will improve citizen's quality of life by improving health and safety, developing the economy, sustaining the environment, increasing transparency and accountability, all while strengthening the privacy and security of both personal and public data.

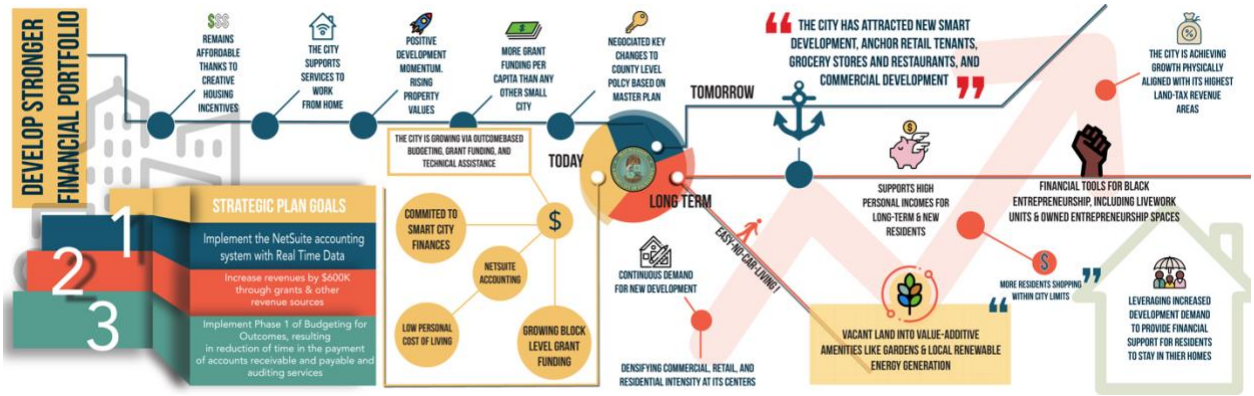
An important theme that is prevalent throughout the ICT Strategic Plan is that becoming a Smart City is not just about technology; rather the ICT Strategic Plan is an outcomes-based roadmap for realizing the City's strategic goals and priorities. Technology is simply the tool that will help the City accomplish those goals and make Seat Pleasant a more vibrant and livable city for all members of the community, from tech-savvy millennials to elderly citizens, and to those who cannot or are not inclined to use technology.

The citizen will be at the core of all of Seat Pleasant's technology investments. These investments will focus on satisfying citizen needs and on transforming the way government conducts business through digitization of services, process improvements, data driven decision making, and the elimination of government silos in order to increase collaboration and coordination.

For example, the City's initiatives will aim to address challenges such as streamlining how citizens and businesses request and pay for services; ensuring a safe community with low levels of crime; providing for the effective movement of people and vehicles within Seat Pleasant and through Prince George's County (first mile and last mile transportation needs); protecting the privacy and security of constituent data; managing energy usage; protecting the environment; providing a connected community to encourage economic development; addressing both public health and support of our population in need, such as the elderly looking to age in place gracefully and safely; and improving decision making through meticulous use of data across the entire government.


INCREASE ECONOMIC DEVELOPMENT
• ZONED TO SUPPORT DEVELOPMENT OF CENTERS & DIVERSE HOUSING SUCH AS LIVE-WORK SPACES
• TARGETING INFILL DENSIFICATION IN KEY CENTERS
• COLLABORATING WITH NEARBY COMMUNITIES ON STRATEGIC REGIONAL INITIATIVES
• SUPPORTS A MORE WALKABLE PUBLIC REALM
• HOSTED OPEN HOUSES FOR DEVELOPERS AND LOCAL BUSINESSES TO INTRODUCE THEM TO THE MASTER PLAN AND ORIENT THEM WITH POLICIES, PROGRAMS, AND OPPORTUNITIES IN THE CITY
GROWING A COMMERCIAL DEVELOPMENT PIPELINE•
ATTRACTING INCREASED MIXED-USE RETAIL IN HIGH-QUALITY SPACES WITH STRONG FACADES•
DEVELOPING GUIDELINES TO IMPLEMENT QUALITIES OF ITS "CULTURAL AESTHETIC"•
ATTRACTING MORE REGIONAL ATTENTION AS WELL AS REGIONAL EVENTS•
GROWTH, WITH MOST NEW DEVELOPMENT CONCENTRATED IN ITS CENTERS
75%
TOMORROW
TODAY
LONG TERM
PUBLIC REALM IS BEAUTIFUL AND ATTRACTIVE TO ENTREPRENEURS AND MILLENIALS
OVER 90% OF RESIDENTS SAY THEIR FAVORITE RESTAURANT IS WITHIN CITY LIMITS
NEAR ZERO VACANCY
DEVELOPING SMART SERVICE TECHNOLOGIES TO PROVIDE BETTER SERVICES TO RESIDENTS
HOME TO A GROCERY STORE, RESTAURANTS, A MOVIE THEATER, FARMER'S MARKET, MEDICAL CLINIC, CLOTHING STORE, BAR/BREWERY, ART GALLERY, DAY CARE & GYM, AND REGIONAL RETAIL ANCHORS
HOME TO A 3 STAR HOTEL
STRATEGIC PLAN GOALS
1 Enhance CGS Infrastructure
2 Identify areas for annexation
3 Improve investment portfolio by pursuing funding for housing and educational trust funds
GOOD SIDEWALKS
LIMITED RETAIL
METRO PROXIMITY
HOME TO AN ELEMENTARY SCHOOL
3% OF RESIDENTS SAY THEIR FAVORITE RESTAURANT IS WITHIN CITY LIMITS
INCLUDES EXPANDED BLOCKLEVEL INFRASTRUCTURE, MANAGEMENT AND BLOCK-LEVEL BRANDING
LOCAL EXHIBITION SPACES FOR ARTS AND CULTURE
REMAINS A PREDOMINATELY RESIDENTIAL COMMUNITY
NEW DEVELOPMENT IS HIGH-QUALITY, ADHERING TO HIGH-QUALITY DESIGN AND SUSTAINABILITY STANDARDS


CREATE A SMART CITY
BLOCK LEVEL COORDINATORS ARE RESPONSIBLE FOR ENSURING CITIZENS ARE INFORMED ABOUT KEY LOCAL ISSUES
90% OF CITIZEN-GOV. INTERFACE HAPPENS WITHIN MYSEATPLEASANT APP INCLUDING OUTREACH & COMM.
CITY SHUTTLE IS A SMART & CLEAN ENERGY VEHICLE
SUPPORTS AUTONOMOUS VEHICLE, RIDE-SOURCING & RIDE-SHARING LOCATIONS
A SEAMLESSLY CONNECTED CITY
CITY WIDE WIFI ACCESS TO ALL = OPPORTUNITIES
A LEADER IN ADA ACCESS
TOMORROW
TODAY
LONG TERM
A "HUB" ON EACH BLOCK W/ WIFI, SHARED TOOLS, YOUTH STUDY SPACES, AND RECREATION
BLOCKS ARE GROWING DENSER WITH INFILL ON VACANT LOTS. MORE MULTI FAMILY HOUSING
EXPANDED SHUTTLE TO OUTSIDE RESIDENTS
STRATEGIC PLAN GOALS
1 Improve citizen outreach & communication to increase participation by 20%
2 Implement multi-lingual electronic newsletter
3 Wifi to city residents & businesses
4 Create MySeatPleasant App
5 Ensure public facilities & services comply with the Americans with Disabilities Act (ADA)
EXPANDING ADA ACCESS
CITY APP WITH MAINTAINCE REQUEST SERVICE
HOMES HAVE ACCESS TO CITY WIDE SMART TECHNOLOGIES
OFFERS INNOVATIVE RESOURCES
#SPMD
APP OFFERS JOB SEARCH, #CAREERGOALS
OFFERS SHUTTLE SERVICE
BLOCK -BY- BLOCK CGS MONITORING
EXPANDED CITIZEN OUTREACH & COMMUNICATION
REDUCED GREENHOUSE GAS EMMISSIONS & WASTE
SUPPORTS GREATER TRANSIT
IS BECOMING ENERGY NEUTRAL
THE CITY IS 100% COMMITTED CLEAN ENERGY, AUTONOMOUS CAR SHARING AS PRIMARY MODE OF PRIVATE TRANSPORT.

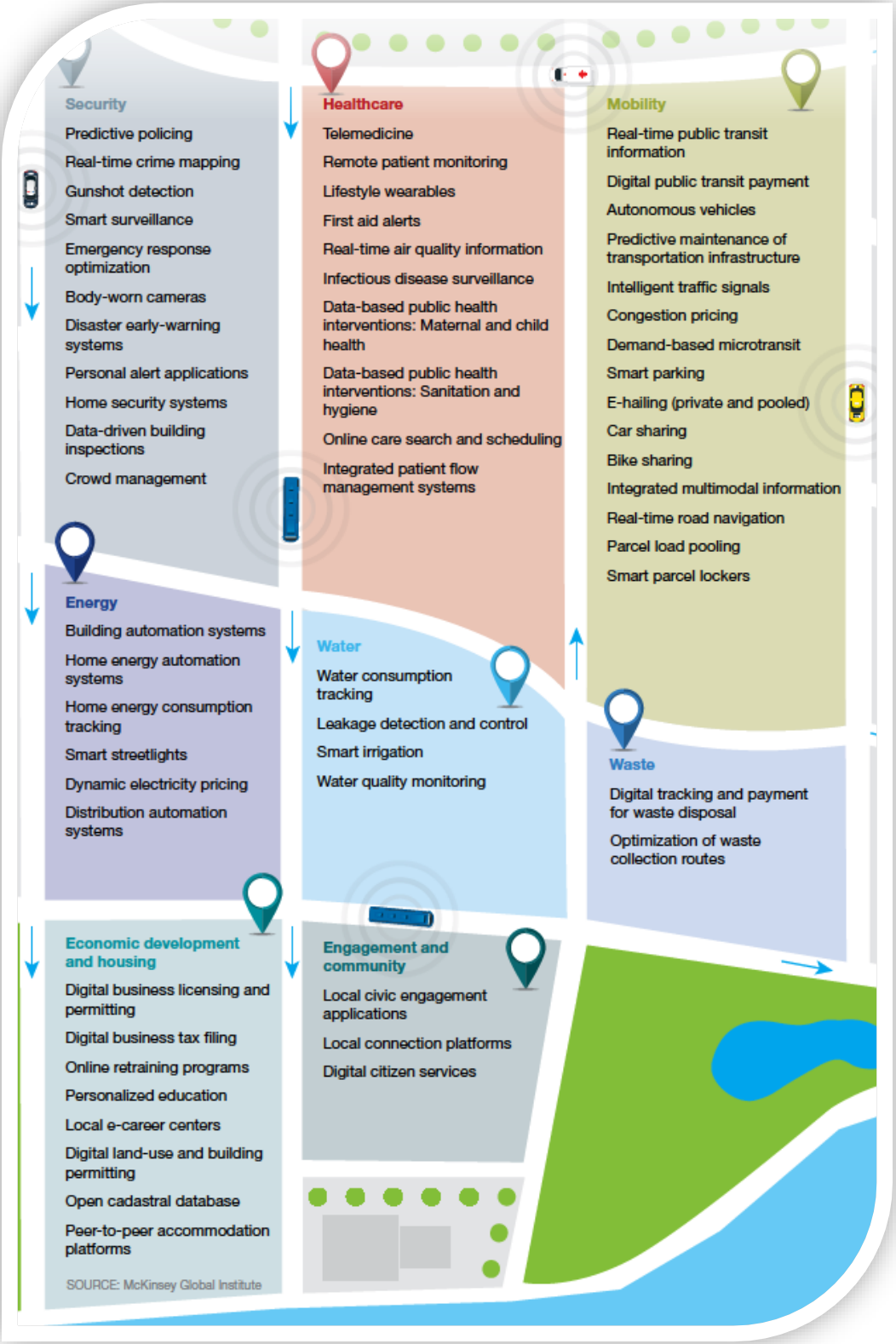

DEVELOP STRONGER FINANCIAL PORTFOLIO
REMAINS AFFORDABLE THANKS TO CREATIVE HOUSING INCENTIVES
THE CITY SUPPORTS SERVICES TO WORK FROM HOME
POSITIVE DEVELOPMENT MOMENTUM. RISING PROPERTY VALUES
MORE GRANT FUNDING PER CAPITA THAN ANY OTHER SMALL CITY
NEGOCIATED KEY CHANGES TO COUNTY LEVEL POLCY BASED ON MASTER PLAN
THE CITY HAS ATTRACTED NEW SMART DEVELOPMENT, ANCHOR RETAIL TENANTS, GROCERY STORES AND RESTAURANTS, AND COMMERCIAL DEVELOPMENT
THE CITY IS ACHIEVING GROWTH PHYSICALLY ALIGNED WITH ITS HIGHEST LAND-TAX REVENUE AREAS
THE CITY IS GROWING VIA OUTCOMEBASED BUDGETING, GRANT FUNDING, AND TECHNICAL ASSISTANCE
TOMORROW
TODAY
LONG TERM
SUPPORTS HIGH PERSONAL INCOMES FOR LONG-TERM & NEW RESIDENTS
FINANCIAL TOOLS FOR BLACK ENTREPRENEURSHIP, INCLUDING LIVEWORK UNITS & OWNED ENTREPRENEURSHIP SPACES
STRATEGIC PLAN GOALS
1 Implement the NetSuite accounting system with Real Time Data
2 Increase revenues by $600K through grants & other revenue sources
3 Implement Phase 1 of Budgeting for Outcomes, resulting in reduction of time in the payment of accounts receivable and payable and auditing services
COMMITED TO SMART CITY FINANCES
NETSUITE ACCOUNTING
LOW PERSONAL COST OF LIVING
GROWING BLOCK LEVEL GRANT FUNDING
EASY AND CAR-LESS!
CONTINUOUS DEMAND FOR NEW DEVELOPMENT
DENSIFYING COMMERCIAL, RETAIL, AND RESIDENTIAL INTENSITY AT ITS CENTERS
VACANT LAND INTO VALUE-ADDITIVE AMENITIES LIKE GARDENS & LOCAL RENEWABLE ENERGY GENERATION
MORE RESIDENTS SHOPPING WITHIN CITY LIMITS
LEVERAGING INCREASED DEVELOPMENT DEMAND TO PROVIDE FINANCIAL SUPPORT FOR RESIDENTS TO STAY IN THIER HOMES

What is a Smart City?

To keep pace and look for ways of improving the experiences of citizens and businesses, many governing bodies have moved away from the traditional buyer-seller relationship model in favor of new ecosystems that include experimenting with service delivery and governance models that remove silos and replace them with shared and integrated platforms. This transformation requires questioning long-held assumptions and being willing to remake produces, process, and policies or phasing them out altogether if doing so can facilitate greater connectivity.

A Smart City is one that utilizes technology as a tool to optimize the infrastructure, resources, and spaces they share in order to respond more effectively and dynamically to the needs and desires of residents, and to make more informed policy decisions. Since the term Smart City was first coined, its definition has remained vague and open ended. Initially, the term was frequently used to describe "green" cities that emphasized environmental sustainability, cities with expansive fiber networks, and cities with smooth functioning infrastructure. Over time, the term came to define digitally connected cities. Today, these concepts are converging, and Smart Cities are being defined as places (e.g. communities, regions, urban or rural ecosystems) where technology and data are employed to make better decisions (e.g. process and policy decisions) in order to achieve a better quality of life for all.

Quality of life has many aspects. On the macro-level, it may cover broad topics, such as safety, health, time and convenience, environmental quality, social connectedness civic engagement, or social justice. On a more micro-level, it can encompass very practical and human concerns such as street crime, the time it takes to get to and from work, access to quality health care, and clean air. For example, in Dubai and New York City, law enforcement agencies improve public safety by using real-time and historical data to better inform decision-making, allocate resources appropriately, and dispatch officers to high crime areas. Singapore, San Francisco are leading the charge in addressing transportation challenges. London was one of the first cities to deploy open data concepts and is continuously devising new approaches to improving citizen's productivity. Seoul is improving overall health outcomes through remote monitoring devices and telehealth, especially among elderly citizens, technologies. Rio de Janeiro improved the efficiency of their business permitting process by ninety-five (95%) using connected software systems, and data generated from San Diego's smart street lights is being used to spur innovation. This eclectic mix of examples emphasizes the endless potential of smart city technology in improving quality of life across a broad spectrum of use cases [Exhibit on page 6].


Security
Predictive policing
Real-time crime mapping
Gunshot detection
Smart surveillance
Emergency response optimization
Body-worn cameras
Disaster early-warning systems
Personal alert applications
Home security systems
Data-driven building inspections
Crowd management
Healthcare
Telemedicine
Remote patient monitoring
Lifestyle wearables
First aid alerts
Real-time air quality information
Infectious disease surveillance
Data-based public health interventions: Maternal and child health
Data-based public health interventions: Sanitation and hygiene
Online care search and scheduling
Integrated patient flow management systems
Mobility
Real-time public transit information
Digital public transit payment
Autonomous vehicles
Predictive maintenance of transportation infrastructure
Intelligent traffic signals
Congestion pricing
Demand-based microtransit
Smart parking
E-hailing (private and pooled)
Car sharing
Bike sharing
Integrated multimodal information
Real-time road navigation
Parcel load pooling
Smart parcel lockers
Energy
Building automation systems
Home energy automation systems
Home energy consumption tracking
Smart streetlights
Dynamic electricity pricing
Distribution automation systems
Water
Water consumption tracking
Leakage detection and control
Smart irrigation
Water quality monitoring
Waste
Digital tracking and payment for waste disposal
Optimization of waste collection routes
Economic development and housing
Digital business licensing and permitting
Digital business tax filing
Online retraining programs
Personalized education
Local e-career centers
Digital land-use and building permitting
Open cadastral database
Peer-to-peer accommodation platforms
SOURCE: McKinsey Global Institute
Engagement and community
Local civic engagement applications
Local connection platforms
Digital citizen services

While each of these cities differ in terms of smart city uses cases, they all make use of three interrelated layers of "smartness that are vital to successful digital transformation. First is the technology base, the building blocks that have to be in place before a city can deploy applications at any kind of scale. The technology base includes high-speed communication networks (e.g. INet), a critical mass of smartphones, open data portals, and sensors (i.e. air quality, smart trash cans, gunshot detection). Second are the specific applications and tools themselves (i.e. City Mobile Apps, Smart City Platforms, Information Access Kiosks). The third and most crucial layer is user adoption and experience. The ultimate goal is to get to the point where people (e.g. citizens and government staff) adopt and use these technologies productively in the day-to-day life and business of the city.

A point that should always be emphasized is that becoming a Smart City is not the goal, but simply a means to an end. For example, the 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership [Exhibit on page 7]. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. Smart Cities present a promising pathway to addressing the challenges laid out in the Sustainable Development Goals.

One issue in particular that needs to be addressed is rapid urbanization. As referenced in Sustainable Development Goal #11, *"Rapid urbanization has brought enormous challenges, including growing numbers of slum dwellers, increased air pollution, inadequate basic services and infrastructure, and unplanned urban sprawl, which also make cities more vulnerable to disasters."*

By improving our ability to deliver basic services to our residents, and by addressing the other issues caused by rapid urbanization through the deployment of Smart City Innovations, such as those being deployed in Seat Pleasant and select cities around the world, cities can *"Ensure healthy lives and promote well-being for all at all ages"*, which is Sustainable Development Goal #3. Such solutions aim to increase access to health care through the use of telemedicine solutions, connected devices, air quality sensors and autonomous vehicles to name a few.

Cities can also *"Ensure availability and sustainable management of water and sanitation for all"*, which is Sustainable Development Goal #6, through the use of IoT sensors that strengthen water management strategies and enhance the ability to monitor this valuable natural resource. Cities can also *"Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation"*, which is Sustainable Development Goal #9, by leveraging the fact that 95% of the world's population is covered by a mobile-cellular signal to foster an information or knowledge based economy, that will attract investment, spur economic development, and move cities away from high emission industries.

Again, the entire point is to respond more effectively and dynamically to the needs and desires of residents. Technology is simply a tool to optimize the infrastructure, resources, and spaces they share. In particular, Smart City applications become more effective when they're paired with complimentary policy moves.

For example, Seat Pleasant leveraged the CGS Smart City platform to quantify the impact of blight on city resources and used that information as the basis of multiple city resolutions and housing programs aimed at addressing this problem. One housing program allows the City to purchase vacant homes, renovate them into smart homes, and put them back on the market. A second housing program serves multiple purposes; address blight and attract millennials to the City. This program allows prospective home buyers to roll up student loan debt into their mortgage, and if they live in the City for a period of 5 years, the City will pay off their student debt.

In short, the definition Smart City can be boiled down to two overarching concepts: **Connectivity** and **Data**.

Connectivity: Smart Cities need to foster connectedness. This includes technology-based connectivity such as the implementation of IoT and 5G networks, as well as social connectivity that aims to foster a greater level of trust, collaboration, and engagement between the citizens and the local government.

Data: Data is essential for a Smart City. As it becomes more readily available across the entire organization, it begins to enable data-driven decision making that ultimately leads to better outcomes.

Ultimately, these two concepts are combined to produce Citizen Centric Smart Cities that enables cities to enact smarter policy and operate more efficiently (e.g. smart processes) in order to improve the quality of life for all members of the city's ecosystem (e.g. residents, businesses, government).

Seat Pleasant's Smart City Journey and Digital Transformation

Seat Pleasant's Smart City journey began in 2016, when the City Council voted to designate Seat Pleasant a Smart City making it the WORLD'S FIRST AUTHENTIC SMALL SMART CITY. The Smart City initiative employs cloud-based "internet of things" (IOT) and cognitive computing capabilities. To that end, Seat Pleasant: "A Smart City of Excellence" will be Citizen Centric: better, faster and providing personalized Citizen Services, making it a "City for Me." As a small American municipality, we are challenged every day with finding ways to deliver services effectively and efficiently and provide meaningful and innovative methods to engage our citizenry.

Cities are complex organizations, with numerous departments in charge of a wide range of essential functions. No matter the size of the city, collaboration across all departments is critical for enhancing the efficiency of planning, daily operations, generating revenue, and providing sustainable, resilient working and living environments to all citizens.

The city has already achieved a centralized, real-time collaborative environment by harnessing the Center for Government Synergism (CGS), which serves as our "main stream" ICT solution where any other ancillary ICT solutions or products must integrate back into the CGS, in such a way to provide tangible benefits to citizens. The CGS Smart City platform processes data feeds and event information from individual departments, open data sources, legacy ICT systems, and IoT devices and sensors, and then presents that information in a total organization view. As a result, City representatives can view report details together, begin communicating instantly, and start developing the right plans and make the right responses to daily events. Collaboration capabilities help accelerate resolution of problems, reduce the impact of unknown information, and minimize the resources needed for getting work done.

The CGS Smart City Platform leverages real-world data that is generated by existing city systems by performing the following tasks:

- Collecting and managing the right data
- Integrating and analyzing that data
- Facilitating easy and timely access to information
- Presenting related information in a coherent way

The benefits of the CGS Smart City Platform are to:

- Analyze information across agencies and departments to make better decisions
- Optimize planned and unplanned operations by using a holistic reporting and monitoring approach
- Anticipate problems, resolve them proactively, and minimize the impact of disruptions
- Build convergence of departments and agencies in a city by facilitating communication and collaboration
- Coordinate resources and processes to respond to issues rapidly and operate effectively
- Improve quality of service and reduce expense by coordinating events

The Smart City Transformation to Date – ICT Deployment Highlights

Revamped Website

The City's website has been given a citizen-centric upgrade. Updated fonts and graphics improve the user experience, in addition to an easy-to-follow site map and navigation designed to help residents find the information they need easily and quickly. Additionally, the City offers online payment, which provides additional options and encouragement to pay taxes and fines while saving paper, postage, and check processing time.

Our front page features the most important city alerts, news, and events. To promote citizen engagement, our homepage incorporates multiple media sources, including social media feeds and our impressive video series including the Mayor's Moment Podcast series, use case videos from city hall departments, and recordings from city meetings. We also have a live map of the city displaying alerts and locations of reported traffic signal issues, road and sidewalk conditions, and other ongoing service requests — putting real-time data directly in the hands of our citizens.

Digitization of services is another major component of the revamped website. Residents can now save a trip to city hall thanks to the digitization of forms for many city programs and services, including, but not limited to, Goodwin Park rentals, Seat Pleasant day registrations, filing a police report, meeting requests with the Mayor and other city departments, and business and rental licenses applications to make the process more convenient and efficient.

Artificial Intelligence

The City has two major use cases for artificial intelligence, which are designed to facilitate communication between residents and city hall.

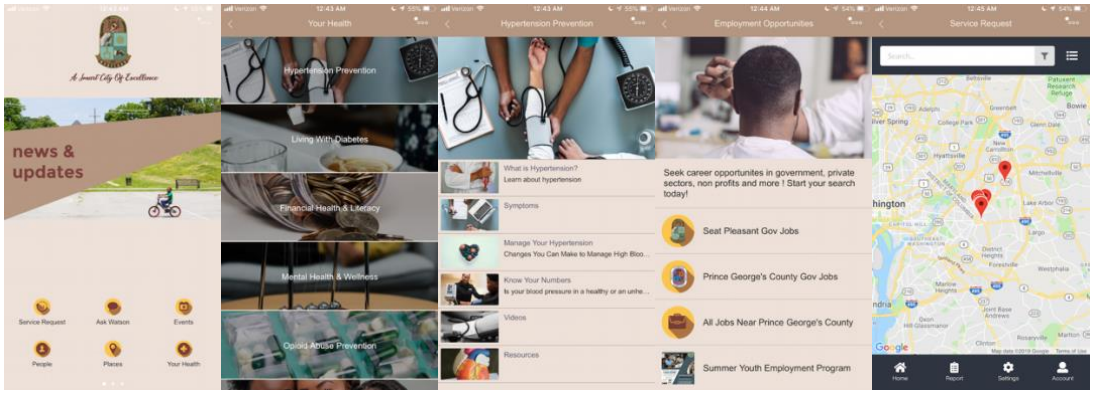
1. **Virtual chat-bot powered by IBM's Watson technology**
    a. Users can type in any questions they have about the city in natural language, and the chat-bot will provide the answer. This functionality is especially crucial in promoting a sense of connection to city services even outside of normal business hours by providing a 24/7 resource for frequently asked questions. In the case that the Watson powered chat-bot is unable to answer a question, users are permitted to submit feedback that is subsequently used to continuously train and improve the chat-bot. This functionality is currently integrated into both the website and the 'MySeatPleasant' app.

2. **The Virtual Mayor Avatar**
    a. Also powered by IBM's Watson technology, this avatar has been named the "Mobile Mayor" and is designed to interact socially with humans and behave as an assisting partner, using human-like speech, body, facial expressions and hand gestures. The avatar can engage in unique conversations for any given situation and can connect humans with data as well as collect and report data. In the near future, the Mobile Mayor will be available on kiosks throughout the city, so that is can interact with citizens, and also provide information about key city services and events. Similar to the linkNYC kiosks in New York. Keeping in line with the

City's Citizen Centric approach, the Mobile Mayor helps city staff by being available when humans can' t be; 24/7, during snow days, and holidays.

'MySeatPleasant' App

The Seat Pleasant app, available on both Apple and Android devices, is a major achievement in the City's citizen engagement journey. The app has sections devoted to addressing systemic inequalities faced by the majority-minority residents of the city including financial literacy, managing prevalent public health concerns including diabetes, heart disease and women's health, as well as updated local employment opportunities. Users can submit crime tips, view community events, and view an interactive map which can be filtered to display local businesses, hospitals & clinics, warming and cooling centers, and other key resources. The app also integrates NextDoor, a popular community message platform, to further amplify the voices of the city's residents and facilitate communication between neighbors. Users can also view all city codes and access the Watson powered A.I. chat-bot for any additional questions.

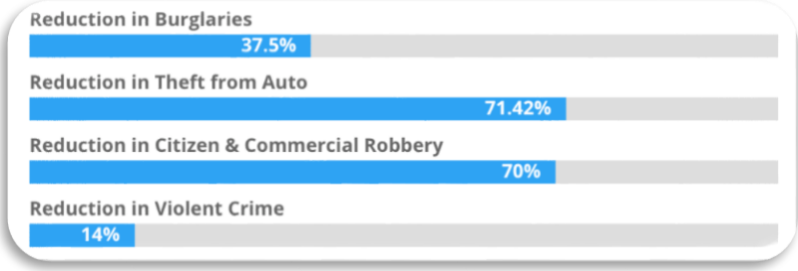


In addition, the 'MySeatPleasant' app allows residents to submit service requests 24/7, and provides a transparent tracking processes with published, key performance indicators (KPIs) which keep residents informed of progress on their service requests, much like parcel tracking services or current pizza delivery metrics do. These benefits create confidence in the residents that their concerns are heard, being addressed, and have a scheduled date for resolution—all at reduced manpower costs to the city. This communicative and engaging approach instills in them a greater sense of belonging and a confidence that their city is "A City I Can Count On."

The Center for Government Synergism (CGS) Smart City Platform

The City has implemented a centralized, real-time collaborative environment by harnessing the Center for Government Synergism (CGS), which serves as our "main stream" ICT solution where any other ancillary ICT solutions or products must integrate back into the CGS, in such a way to provide tangible benefits to citizens. The CGS Smart City platform is utilized by all departments to improve collaboration across government and to promote data driven decision making. In particular, the Seat Pleasant Police Department (SPPD) has realized significant outcomes.

The police department used the CGS platform and its public safety capabilities to understand what is happening around our city and to identify criminal hotspots using the platform's predictive policing capabilities [Exhibit below]. The criminal hotspots were used to inform patrol schedules and patrolling routes. Leveraging the CGS platform in conjunction with the city's new policies to enhance the relationship between the department and its residents has resulted in significant crime reductions [Exhibit to the right].



The Seat Pleasant Police Department (SPPD) loaded three years' worth of crime statistics into the CGS Smart City Platform in order to identify where, when and the types of crime that occurred in the city. SPPD identified that the three most prevalent crimes were Theft from Auto, Breaking and Entering, and Auto Thefts. SPPD then created a hotspot analysis that identified where these crimes have taken place (see images below) and found that 20% of criminal activity was isolated to a few select areas (nearby the intersection of Addison Rd and Central Avenue). By increasing policing activity around these locations in particular, SPPD estimated significant reductions to auto thefts.

Examples of Hot Spot Analysis

Theft from Auto ***Breaking and Entering*** ***Auto Thefts***

The SPPD Drone Program

The department's Drone Program was established in early 2017 to aid in monitoring vehicle traffic flow patterns, spotting roadways needing repairs, gathering data for accident reconstruction, identifying locations were enforcement efforts should be prioritized, and other police operations.

Notably, Seat Pleasant is the first City in the United States to receive clearance from the TSA, DHS, and FAA to operate our drone (sUAS – Small Unmanned Aircraft System) in the Capitol Region's Flight Restricted Zone. In accordance with regulatory requirements, department Drone operators are Part 107 certified by the Federal Aviation Administration.

Internet of Things (IoT)

The Department of Public Works has installed Smart Trashcans throughout the City. The City's solar-powered, smart trashcans detect when they are full and capacity data is sent to DPW, who can more efficiently allocate resources for waste collection.

The City has also installed WiFi counters and Air Quality sensors in key city locations. The WiFi counters measure foot traffic in an area and allow for the analysis of pedestrian and vehicle traffic patterns. This data can be used to spur economic development by supporting our local businesses and by attracting outside investment. The air quality IoT sensors measure key air quality indicators such as CO2, Carbon Monoxide, and pollutant levels. This data can then be used to provide residents with recommendations such as "the best time to go for a morning jog" or "the best time for those diagnosed with asthma to be outside."

BoardDocs

Seat Pleasant is the first City in the State of Maryland to offer BoardDocs as a convenient way for viewers to see up-to-date City Council meeting agendas and minutes.

Seat Pleasant's ICT Vision, Mission, and Goals

Seat Pleasant's ICT vision is to operate as a high-performance team providing technology excellence and easy access to the ICT resources that supports the goals of the city. The City is committed to supporting and enhancing the missions of the municipality, by providing quality service through the effective management and use of ICT resources. In support of this mission, the City will:

- Provide leadership and planning for the effective and strategic use of emerging technologies.
- Fully integrate ICT systems and functionality across each department, which in turn allows for government-wide management of the ICT environment. Ensure that the needs of city operations and constituents (residents, businesses, churches and visitors) are fully considered and satisfied.
- Demonstrate technical and operational excellence through a commitment to continuous improvement and professionalism in the following areas:
    - Operational Efficiency & Effectiveness
        - Digitization of Services
        - Artificial Intelligence (A.I.) for Automation
        - CGS Smart City Platform Expansion
        - City Wide Wi-Fi (step 1) & 5G (step 2)
    - Public Engagement
        - Artificial Intelligence (A.I.) for Natural Language Processing
        - City Kiosks
        - City Wide Wi-Fi (step 1) & 5G (step 2)
        - Autonomous Vehicles
    - Public Safety & Resilience
        - CGS Emergency Management / Fusion Center
        - Regional Public Safety Asset
        - Microgrid
    - Economic Development
        - Retail IoT Programs
        - Seat Pleasant Arts, Culture, and Technology Village
        - City Wide Wi-Fi (step 1) & 5G (step 2)
        - Center of Competency (CoC) for Smart Cities
    - Workforce Development & Education
        - Seat Pleasant Arts, Culture, and Technology Village
        - Learning City
        - Smart City Curriculum with Prince George's Community College (PGCC)
    - Healthcare
        - In Home & Health Monitoring Program
        - Telemedicine
        - City Wide Wi-Fi (step 1) & 5G (step 2)
    - Government Accountability & Transparency
        - Blockchain
        - Open Data
    - Transportation & Mobility
        - Autonomous Vehicles

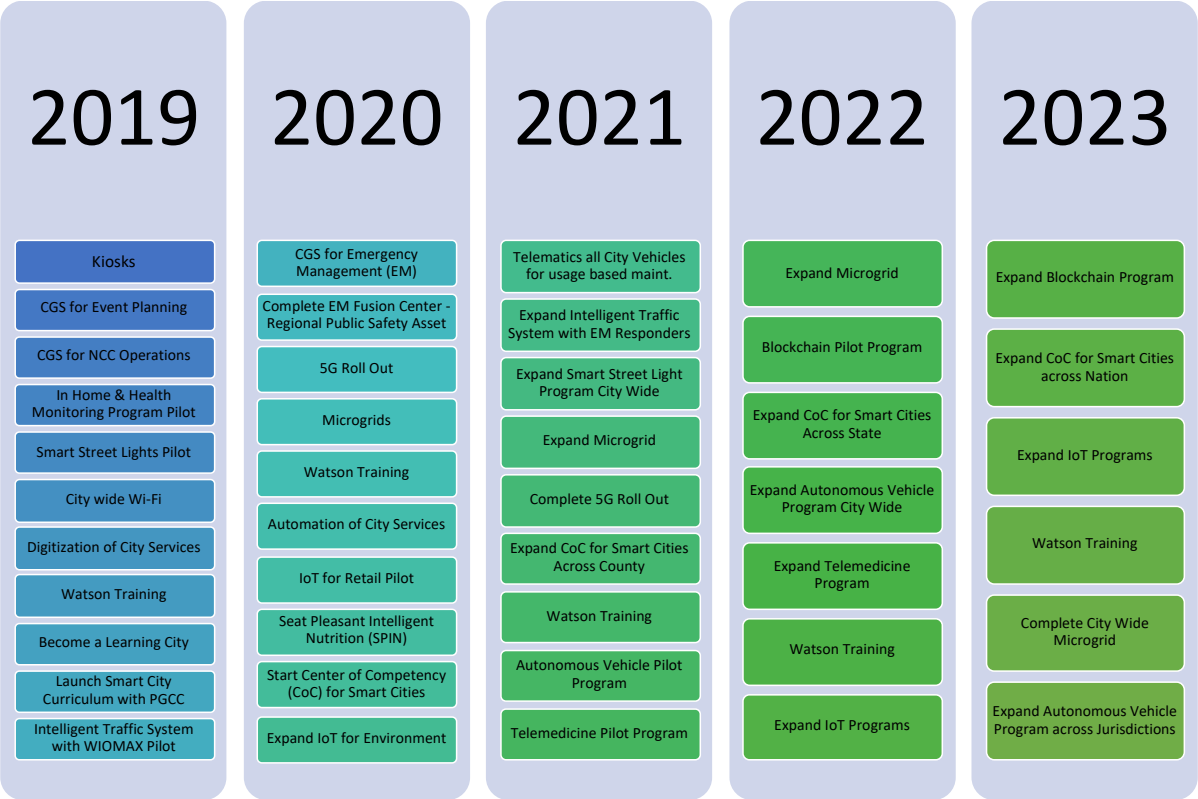
- City Wide Wi-Fi (step 1) & 5G (step 2)

In order to build upon the progress made thus far and in order to achieve the City's stated goals, the City will utilize a multi-phased implementation approach over the course of the next five years that focuses on seamless integration of new and emerging technologies and Smart City solutions into the day to day operations of the city.

Specifically, this means first prioritizing efforts in order to quickly deploy the most critical CGS capabilities in accordance with Seat Pleasant's Smart City vision per the five-year plan.

Five-Year Plan

Seat Pleasant's five-year plan aims to implement a truly citizen-centric Smart City, with a keen focus on improving outcomes with analytics while saving time and money.



Operational Efficiency & Effectiveness

The solutions proposed in this area will facilitate progress towards the goals and priorities set forth in the Seat Pleasant Strategic Plan, specifically:

- *#2 – Create a Smart City*
- *#3 – Develop a stronger financial portfolio*

The City plans to expand data driven decision making capabilities across the government:

The City will continue to integrate data from additional city departments, as well as state and federal agencies, such as Parks & Planning, and Health and Human Services, as well as from utility companies such as Pepco, WSSC and Washington Gas. These additional data sets allow the City to better utilize the CGS for enhanced data driven decision making.

The City aims to enhance Neighborhood and Commercial Compliance (NCC) operations:
To efficiently conduct inspections of residential and commercial properties based on observations and complaints, the Neighborhood and Commercial Compliance (NCC) department needs a centralized information sharing platform that allows them to quickly access city, county, and zoning codes and ordinances as well as the ability to record violations, and citizen complaints. The CGS Smart City Platform will be further developed to provide a records management capability to help city staff quickly conduct and record inspections, and response to citizen-initiated complaints. The City estimates a 30 to 40 % improvement in efficiency due to the expanded CGS Smart City Platform features.

Digitization and Automation:
To further improve operational effectiveness and efficiency, the City plans to continue digitization of city services. Following digitization, the City will begin to leverage A.I. for complete automation of services.

Public Engagement

The solutions proposed in this area will facilitate progress towards the goals and priorities set forth in the Seat Pleasant Strategic Plan, specifically:

- *#2 – Create a Smart City*
- *#4 – Improve neighborhood infrastructure*

The City plans to deploy a city-wide Wi-Fi solution at little or no cost to residents:
The purpose of this municipal network is to provide broadband access for all Seat Pleasant residents in order to drive resident engagement by including them more completely into the Smarter City solution, as well as providing an attractant to potential new residents who wish to be a part of a Smarter. In addition, municipal networks such as this have immense potential to counter inequalities and disparities in the community by removing the ill effects of the "digital-divide".

The City plans to deploy interactive kiosks (e.g. LinkNYC) in key city locations:
Kiosks throughout the city will be deployed and optimized to the needs of pedestrians who are the most likely to use them. These kiosks will empower individuals who do not have access to computers or mobile phones by providing an alternate method to access innovative city services. Kiosks will display pertinent city information, including but not limited to:

- Public transit schedules
- Bill Pay
- Local and Regional Job listings
- The 'MySeatPleasant' App
- The Mobile Mayor Virtual Avatar with A.I. natural language processing capabilities

Potential locations for the kiosks include:

1. Seat Pleasant Activity Center on MLK Highway
2. Addison Plaza Shopping Center
3. Goodwin Park
4. Police Department
5. Metro Station: Addison Road
6. City Hall (current)
7. City Hall (future site, currently under construction)
8. McDonalds Plaza on MLK Highway
9. Playground / Park on 71st Street and Seat Pleasant Dr. intersection
10. Seat Pleasant / DC border on Eastern Ave and MLK highway

Public Safety & Resilience

The solutions proposed in this area will facilitate progress towards the goals and priorities set forth in the Seat Pleasant Strategic Plan, specifically:

- *#1 – Increase economic development*
- *#2 – Create a Smart City*
- *#4 – Improve neighborhood infrastructure*
- *#5 – Decrease all categories of crime*

The City aims to become a Public Safety Asset for the National Capitol Region:
The city hall building located at 6301 Addison Road is currently under renovation. The renovation will add a third floor to the building. This addition will house an Emergency Management and Fusion/Intelligence center. The Seat Pleasant Police Department (SPPD) will be able to provide public safety support for all city, county, state, and federal law enforcement agencies in the National Capitol Region. In addition, as the only municipality in the US with authorization to fly drones in the restricted air space over the National Capitol Region, the SPPD will expand drone operations to provide regional reconnaissance support.

Protect Seat Pleasant from Service Disruptions with Electric Microgrid Components:
To keep critical Smart City solutions and city services online during electrical service disruptions from manmade or severe natural events, Seat Pleasant will deploy an electrical microgrid component for its overall Smarter City deployment. A phased approach to provide a quick deployment of basic generator and solar capabilities will enhance Seat Pleasant's energy security and resilience, providing a turnkey and highly visible achievement to create near term, newsworthy citizen awareness and support for the broader Smart City journey.

Economic Development

The solutions proposed in this area will facilitate progress towards the goals and priorities set forth in the Seat Pleasant Strategic Plan, specifically:

- *#1 – Increase economic development*
- *#2 – Create a Smart City*
- *#3 – Develop a stronger financial portfolio*
- *#4 – Improve neighborhood infrastructure*
- *#5 – Decrease all categories of crime*

Empower citizens by improving their socioeconomic status:
Seat Pleasant's vision for improving the socioeconomic status of citizens is to use integration of multiple technologies (CGS, IoT connected devices, data-driven insights) to revitalize neighborhoods by increasing property values and home ownership while reducing the number of vacant properties and associated blight and crime. At the 2018 Smart City Showcase for residents and city councilmembers, residents were particularly interested in how the city is using technology to make neighborhoods safer and as a result, offer a high return on their homebuying investment. By focusing on increasing home values, Seat Pleasant is making important strides towards increasing financial stability and a greater sense of community for residents.

Seat Pleasant used the CGS Smart City Platform to estimate the true impact of blight and the vacant housing problem. This was accomplished by bringing in data from the Maryland Dept. of Assessments and Taxation, Real Estate Data, Vacant Housing Data, Police Incident, and Public Works data and leveraging research done by the National Vacant Properties Campaign. This analysis estimated that the city was losing upwards of $1M per year. As a result of this analysis, the City implemented new policies aimed at addressing the problem. As a result, property values in the city increased from $175K in 2016 to $216K in 2019.

The City plans to build upon these successes with the goal of continuing to bring Seat Pleasant to state and county medians, with innovative and cost-saving solutions.

Statistic	County Median	State Median	Seat Pleasant Median
Home Value	$298,300 Prince Georges County home values have gone up 5.0% over the past year and Zillow predicts they will rise 3.2% within the next year.	$291,000 The median home value in Maryland is $291,000. Maryland home values have gone up 4.2% over the past year and Zillow predicts they will rise 3.0% within the next year.	$216,000 Seat Pleasant home values have gone up 5.5% over the past year and Zillow predicts they will rise 0.4% within the next year.

The City also aims to increase municipal home ownership rate (currently 58.4%) by not only offering a homebuying incentive program, but also running in tandem a technology solution to make homeownership more attractive. The City will use Smart City technology to map vacant properties, utilize predictive analytics to reduce crime, renovating vacant homes with Smart

technology, and increase efficiency of reporting maintenance requests to the city with the 'MySeatPleasant' app.

The City's IoT and Smart City environment (both of which are enabled by the municipal wireless network) offer several unique benefits to local business and the municipality including revenue growth and cost reductions:
Analysis of pedestrian and vehicle traffic patterns from IoT solutions such as the Wi-Fi counters and intelligent video systems such as those already deployed in Seat Pleasant will provide insights into retail customer buying behaviors and preferences have the potential to greatly benefit local businesses.

Planned inclusion of local business into Seat Pleasant's Emergency Management and Disaster Resilience programs will reduce business risk, speed recovery services to normal revenue patterns, and in many cases, actually reduce insurance premiums because of reduced risk of crime, and lower damage costs from better planning and preparations for natural disasters.

In addition, the planned municipal network will be made available to all members of the community should improve productivity of existing businesses and attract new businesses to Seat Pleasant, allow individuals to work from home more effectively, strengthen local job markets, and represent long term social investments in the form of better-connected schools and libraries. They also create millions of dollars in savings that can be reinvested into local economies.

Create a Center of Competency (CoC) for Smart Cities in Seat Pleasant:
The leadership of Seat Pleasant has a vision for becoming a Center of Competency for Smart City services that exploits technology advances for superior services to its citizens. Recognizing that most Americans live in smaller communities, Seat Pleasant, A Smart City of Excellence is not only becoming the first small municipality to embrace Smart City concepts for the benefit of its constituents, but also becoming the first to employ a shared services model to extend these benefits to neighboring communities in a business model which could eventually scale across the county, the state, and eventually, even nation-wide.

The implications of a shared services model of Smarter Cities solutions are immense, with more services becoming more affordable to smaller municipalities nationwide. This is possible because powerful, preconfigured and highly integrated solutions like the CGS Smart City platform allow cities to benefit from multiple application benefits through a single subscription model called Solution as a Service (SaaS). The benefits of having a SaaS mean it is a solution that is easily scalable, made to be deployed and replicated, and thus also designed as a marketable product to other municipalities.

As a City of Excellence, Seat Pleasant is boldly moving ahead with its transformation to a Smarter City not only for its own citizens, but also providing these integrated capabilities to additional municipalities in Prince George's County in the first shared services model of Smart City benefits. Seat Pleasant expects this initiative to generate revenue for the city, by marketing, selling, and implementing CGS solutions for other cities, that can be re-invested into a wide variety of current and future projects. To accomplish this, the City created the Seat Pleasant

Investment Corporate Enterprise (SPICE) LLC, which is a for profit company that is wholly owned by the City. SPICE is responsible for business ventures and operations for the city, including expansion of the CoC and the shared services model. In addition, the City also created a non-profit arm; The Seat Pleasant Economic and Community Development Corporation (SPECDC). This organization, in addition to its charitable focus, allows the city to apply for funding opportunities limited to non-profit organizations.

Workforce Development & Education

The solutions proposed in this area will facilitate progress towards the goals and priorities set forth in the Seat Pleasant Strategic Plan, specifically:

- *#1 – Increase economic development*
- *#2 – Create a Smart City*
- *#6 – Provide workforce training opportunities*

The Seat Pleasant Arts, Culture, and Technology Village:
This will be a mixed-use development which will be built over a 15-acre site controlled by the city and will include housing, retail and office space. For housing, the Seat Pleasant Arts, Culture, and Technology village will include senior housing and micro units (for millennials and younger generations). The idea is to create a cross generational environment, where both the elderly and the younger generations can bond and learn from one another. In addition, this Village will include tech incubators and accelerators for aspiring entrepreneurs and to spur economic development and innovation. In addition, plans for the village include space for a higher education institution that can be used as a satellite campus.

The City of Seat Pleasant, A Smart City of Excellence plans to become a "Learning City" as designated by the United Nations:
Seat Pleasant's goals in this area include training residents for higher-paying jobs, improving financial literacy particularly focusing on increasing credit scores, saving and planning for college, retirement, and home-buying. The City plans to prepare citizens for the changing economy by preparing citizens for jobs in science and technology, empowering and expanding small businesses, and by offering educational opportunities to increase financial literacy. The City wants all citizens to reap the benefits of solid financial planning and better paying employment. To accomplish this, Seat Pleasant will focus on jobs and skills training through a partnership with Prince George's Community College, targeted financial literacy programs, education and support for small business owners, and increasing homeownership and property values.

Specifically, the City proposes to empower citizens with job and skills training through a partnership with Prince George's Community College to offer affordable courses in Smart City technologies, the Internet of Things (IoT), and other emerging technologies. In addition to financial planning, entrepreneurship, and the Smart City curricula, Seat Pleasant plans to offer flight simulator programs to train traditional and drone pilots. The technology training program is especially crucial as Mayor Eugene W. Grant has committed to requiring new technology employers to hire from within Seat Pleasant; there is high-level political will and community buy-in for this training. Seat Pleasant has invested heavily in Smart City technology and there is

tremendous interest, both from citizens and other cities nationwide, and momentum in expanding and leveraging this technology particularly to benefit business owners.

Seat Pleasant will encourage and support small business growth with an educational program covering how to start a small business, resources available, mentorship, and promotion of these businesses within our Smart City program including but not limited to integration with the 'MySeatPleasant' app.

The City will also focus on improving financial literacy through the free 740 Campaign, focused on helping citizens reach a 740 credit score, community meetings and classes on investing, budgeting for small businesses, and targeted financial literacy programs for youth, families saving for college, first time homebuyers, investing, and retirement/estate planning.

As previously referenced, the average median income in Seat Pleasant is far behind the median income at the county, regional, and state level. Within the region, jobs in the technology sector are the highest-paying and with a median age of 32.9 and 16% unemployment in Seat Pleasant, there is no shortage of residents ready to re-train for better jobs.

Healthcare

The solutions proposed in this area will facilitate progress towards the goals and priorities set forth in the Seat Pleasant Strategic Plan, specifically:

- *#2 – Create a Smart City*
- *#7 – Expand health awareness and cultural and leisure activities*

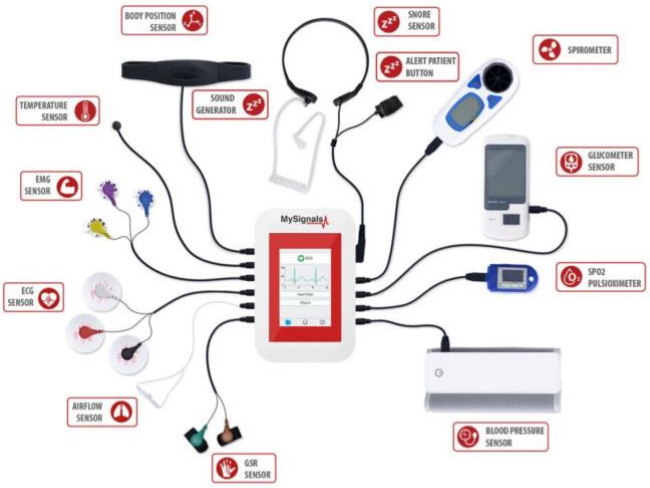
Enabling citizens to safely age-in-place by utilizing in-home monitoring technologies:
The City's In-Home Monitoring program will focus on using remote patient monitoring technology to empower residents aging in place and improving quality of life for caregivers and citizens with disabilities. This program utilizes in-home monitoring for residents with multiple chronic conditions and disabilities to allow them to live more safely, comfortably, and independently while assisting caregivers to ensure safety and security.

The remote patient monitoring technology will securely track physiologic data on vulnerable residents. The data will remotely transmit to a secure, HIPAA-compliant dashboard. Healthcare providers that have authorization to monitor the data, will receive daily updates on the clinical status of persons receiving remote monitoring services. With the addition of new dashboards to the CGS Smart City Platform, the city can continue its vision by providing a broad set of monitoring and response capabilities. By combining these technologies, the City can provide secure reliable data to enhance citizen welfare for disabled residents and caregivers. In-home sensors work to learn residents' patterns and look for anomalies in their routine or unsafe conditions within every room of the home.

Room	Description of Sensor Activity/Use Case
Bathroom	• Detects movement to automatically turn lights on/off • Checks for use of faucet and duration • Alerts for leaks and other running water • Temperature and humidity monitoring
Living Room	• Detects movement, monitors presence and use of lights (auto turn off/on etc. Good for environment too) • Monitors temperatures and humidity Monitors door openings and closing for security
Kitchen	• Detects movement, monitors presence and use of lights • Check for use of faucet and duration • Alerts for leaks and running water • Monitor temperature and humidity
Bedroom	• Watch for changing sleep and rest periods • Detects movement and monitor presence and use of lights • Monitor temperature and humidity
Voice Interface-All Rooms	• Amazon Echo integration • Query via voice commands for alerts, events or current conditions
Mobile Integration-All Rooms	• Web and mobile applications to set and monitor alerts or changes in activity

Additionally, the program will include personalization options including specialty sensors (fire, carbon monoxide, outdoor air quality) and IoT-connected physical emergency call buttons.

Enabling improved health outcomes by utilizing in-home health monitoring technologies:
The City plans to utilize a biometrical IoT platform, which allows for the efficient measurement of 20 different body parameters and physiologic data. All the biometric data gathered is encrypted and sent to the Cloud in real-time to the user's private account. The City will offer training for caretakers and medical personnel on using the devices and monitoring of residents.



At-home capabilities is a key component of the platform. The at-home medical full monitoring kit includes 17 sensors that gather data that is easily organized and visualized on mobile or tablet applications. Lastly, the integrated technology platform will support the full implementation of telehealth technology to support virtual medical encounters, interactive pharmacist medication reviews, and medical triage activities. Lastly, residents that are high utilizers of medical services will have the option of integrating their clinical data with emergency medical services trucks to facilitate rapid deployment of medical interventions, based on changes in the clinical condition physiologic data.

Utilizing 5G to improve health outcomes:
The City's planned 5G rollout will play a big role in improve healthcare delivery. As the City continue to push connected in home medical devices and telemedicine, it will be critical to have quality connectivity and internet access. The ultimate goal is to improve healthcare, by enabling tighter integration between new, high-tech medical services and the patients and caregivers in the community; powered by a robust 5G network.

Conclusion

Smart City transformations are long term journeys that steadily add capabilities at a pace that meets the needs of the city in terms of its ability to absorb change without causing undue financial or social stress that would create resistance to the long-term vision. Accordingly, a solid program management component of the Smart City deployment is key to maintaining positive public sentiment, sound financial management, and the envisioned technical results—through all phases of the program.

A successful Smart City project will simultaneously align the needs and goals of citizens, employees, business partners and suppliers, offering each stakeholder group immediate value in order to solicit their involvement in and support of subsequent work efforts.

History, culture, demographics, and economy make each city unique and this must be taken into account in designing solutions; simply implementing Smart City technologies is not going to deliver the envisioned results.

To recap, a Smart City project is not a technology project – it is a social change project, and society needs to be driving the change. Using agile technologies like cloud and mobile apps, Seat Pleasant will continue to make progress on its Smart City transformation by asking citizens, partners, suppliers and employees what they want, deliver the first iteration, collect feedback, improve the services, and then repeat the entire cycle all over again. Citizens and other stakeholders will feel connected to the process, see the results of the changes they ask for, and continue to provide support and direction. This is how a Smart City stays smart.