

2019

City of New Britain  
SMART City Initiative  
Energy and Innovation Road Map for the Future



Mayors Smart City Initiative  
Updated 2019



## *Message from Mayor Erin E. Stewart*

The City of New Britain is a SMART City. This New Britain SMART City Initiative was launched in the winter of 2016 along with the creation of the Mayor's Energy and Innovation Committee.

What is a SMART city? A SMART city use data and technology to create efficiencies, improve sustainability, create economic development, and enhance quality of life factors for people living and working in the city. It also means that the city has built a smarter energy and information infrastructure.

The committee is not just about energy savings. It's an opportunity to allow stakeholders to think outside of the box and bring a focus on bringing New Britain into the 21<sup>st</sup> century through technology.

The committee oversees and provides guidance and feedback on current projects and researches and identifies additional innovative projects that will allow New Britain to have a sustainable plan that lives far beyond its inception.

One of the easiest actions a citizen can take to help in this SMART city initiative is to walk the walk. I participated in a home energy audit that reduced my energy costs. The audit was the 'Energize Connecticut' program sponsored by EVERSOURCE. 'Energize CT' is just one of many energy auditors that will help you save on your energy costs. Certified and insured contractors will evaluate your household energy use and provide an average of \$1,000 in energy efficiency and weatherization services to you. I noticed a significant difference in my comfort and in my reduced energy costs! Check out 'Energize CT' here:

<https://www.energizect.com/>

According to Energize Connecticut, every \$1 of investment in energy efficiency programs in Connecticut offsets \$2.80 of new generation and other energy costs for which consumers would otherwise have to pay. In 2018, residential energy efficiency changes resulted in Connecticut residents saving up to 50% on annual energy costs, which are among the highest in the nation, with residents paying \$51 dollars more per month than the national average. In New Britain, city residents and businesses have also saved a substantial amount of energy and money and reduced carbon emissions due to energy efficiency measures. Energize CT estimates these annual savings at \$1.76 million - This has led to 5,676 (tons) in CO<sub>2</sub> saved and more than 8,906,557 kWh worth of electricity right here at home in New Britain.

By becoming energy efficient, New Britain aims to join other cities around the state that have implemented energy saving policies. We have the opportunity to save tremendous amounts of money, while helping our environment at the same time. SMART city initiatives are the future of cities like New Britain, and with everyone buying in, we can make our city one of the leading advocates for energy & innovation in Connecticut.

The last three years have brought much success to the City when it comes to energy and innovation. The projects that have been completed range from making our schools more energy and cost efficient, to the most recently announced project, which will bring \$1 billion in private investment to New Britain's former Stanley Works site. Through public and private investment in our energy efficiency, we can truly pave the way for a clearer and more cost effective society. I encourage you to do your part as well!

Mayor Erin E. Stewart

# Table of Contents

## **SMART City Initiative Update**

*Vision*  
*Completed Projects*  
*Goals*  
*Members*

## **SECTION 1 - INSIDE THE HIVE**

City Website Expansion  
OneSolution Financial Management Software  
Board of Education Facility Upgrades  
Common Council Chambers Update  
City Hall Energy and Lighting Upgrades  
Solve IT NB  
CrimeView  
See-Click-Fix

## **SECTION 2 – ON THE STREET**

Electrical Vehicle Charging Stations  
Streetlights Purchase  
SMART New Britain  
GPS Tracking for Public Works Operations  
City Fleet Management Report  
Online Auction of Surplus City Equipment  
Simple Recycling

## **SECTION 3 – ON THE GROUND**

Shuttle Meadow Reservoir Solar Array  
Fuel Cell Technology  
Anaerobic Digester  
Energy and Innovation Park

## **SECTION 4 – IN THE “AIR”**

Public Wi-Fi Access  
Monitoring at Traffic Intersections and Parks  
Traffic Signal Modernization Program

## **SECTION 5 - COMMITTEE RECOMMENDATIONS**

*Looking Forward*  
*Conclusion*

### **APPENDIX:**

Committee Meeting Schedule  
Common Council Resolution

# The Vision

Mayor Erin E. Stewart established the Energy and Innovation Committee in January 2016 as a way to transform New Britain into a “SMART City.” The original plan, known as the “Energy and Innovation” plan for the city was born from this original committee and in accordance with a directive from the New Britain City Council. This year the name was changed to the “SMART City Initiative” in order to designate the Energy and Innovation Park as a project of its own.

The committee’s aim is: to make New Britain’s government more streamlined through the effective use of existing and new resources, focusing on:

- Energy Efficiency and Reliability
- Asset Management
- Realistic Budgeting

By looking at these three areas, the city has realized savings through smart energy management and conservation measures in addition to living within its means.

Further actions will result in additional savings; the committee has focused on attaining an overall goal of 15% energy reduction over the next four years. By bringing the message on saving energy to our residents, we can set the standard we would like our residents to follow.

# Completed Projects:

Shuttle Meadow Reservoir Solar Array  
2015

One Solution--Financial Management Software  
2015

Fuel Cell Technology Installation at NBHS  
2016

Online Surplus Equipment Auction  
2016

Fleet Management Report  
2016

GPS Tracking-Public Works Operations  
2016

City Website Redesign  
2016

Simple Recycling Program  
2017

City Hall LED Lighting Upgrades  
2017

Common Council Chamber Technology Upgrades  
2017

LED Lighting Upgrade-School District  
2017

For project summaries, please refer to Mayor's Energy & Innovation Plan of 2016:

<http://www.newbritainct.gov/civicax/filebank/blobdload.aspx?BlobID=2277>

# Committee Goals

*The Mayor's SMART City Initiative established 4 goals:*

1. Oversee, provide guidance and give feedback on current projects underway within New Britain
2. Research and identify additional Energy and Innovation (E&I) projects to achieve savings
3. Brand New Britain as a SMART and Sustainable City
4. Raise awareness to city residents on SMART City goals

## SMART City Initiative Committee Members

<b>Mayor Erin E. Stewart</b>	<b>Jodi Latina-Mayor's Office</b>
<b>William Carroll-Economic Development</b>	<b>Timothy Stewart-Chamber of Commerce</b>
<b>Jon Delgadillo-Facilities &amp; Energy</b>	<b>Mark Moriarty-Public Works</b>
<b>Michael Cassella-Energy Consultant/resident</b>	<b>Alderman Robert Smedley</b>
<b>James Adams-New Britain Resident</b>	<b>Kim Villanti-Marketing Team</b>
<b>Paul Amarone-Mayor's Office</b>	<b>Dr. Barry Westcott-CCSU/resident</b>
<b>Paul Salina-Support Services Director, City of New Britain</b>	

# Section 1: Inside the Hive

*“Inside the Hive” represents many of the projects we are working on or would like to see happen inside the walls of City Hall.*

## **City Website Expansion**

*[www.newbritainct.gov](http://www.newbritainct.gov)*



The City’s Information Technology Department has expanded the City’s web presence with not only a recently redesigned government website, but also added a dot com site. The SMART City Initiative has led in the creation of a commercial site to promote the City. The new website, [VisitNBCT.com](http://VisitNBCT.com) advances the mission of the Chamber of Commerce, helps the Economic Development Department market businesses, and when fully updated, will allow city departments to promote their community events.

The City of New Britain has partnered with Granicus for live video streaming of our meetings and has been live for several years now. It’s software is used to disseminate electronic documents to Common Council members. In combination with the Town and City Clerk’s office and Clerk of the Council, the IT Department customized the entire legislative agenda using an application called Granicus Legistar. The application tracks changes through a custom workflow creating a more efficient method for managing decisions by reducing workload, improving record retention and information retrieval.

Granicus Legistar automates City Council meeting on and meeting facilitation with tools to streamline minutes, voting, full reporting and publishing to a citizen-facing web portal. The legislative portal includes common council demographic information, resolution sponsorship, and voting history. It’s user friendly modules are why the committee recommended it’s installation, bringing government in a more transparent, accessible way to our residents.

## ***OneSolution – Financial Management Software***

In late 2015, the City of New Britain purchased new financial management software called “OneSolution”. OneSolution provides a more streamlined workflow for city finances and the ability to track and create reports, among many other functions. With the new software, the Finance Department has established the Employee Online module where employees now have the ability to electronically view their paycheck stubs. Through this upgrade, the city is saving money on check stock, ink, and labor to produce check stubs on a weekly basis as well as reduce our carbon footprint through energy savings. In total, the City’s Finance Department saves approximately \$25,000 each year all because we no longer provide printed checks to our employees.

OneSolution allows city employees an online time tracking system. This module, once up and running, will allow workers to access their personnel information like vacation, sick and personal time in one module all on our online portal. This saves human resources staff countless hours of calculating individual time accruals.

## ***Board of Education Facility Upgrades***

The school district has dedicated a tremendous amount of effort in making sure the city utilizes energy and money saving opportunities both now and in the future. They have done so by hiring a full time energy manager who works toward monitoring energy usage in all school buildings and has made efforts to change human behaviors to save electricity costs. The district has seen incredible results because of its focus on changing the culture of its employees and students to become more ‘energy-aware’.

The Consolidated School District of New Britain has taken advantage of energy efficiency incentives offered by the utility company Eversource. Four schools have seen upgrades to lighting fixtures. The Slade, Pulaski, and DiLoreto schools have had interior lighting fixtures retrofitted with LED bulbs and ballasts, while New Britain High School had all exterior fixtures replaced with new LED lighting equipment. The installation of the LED light fixtures has paved the way for significant savings. The cost of changes to the lighting fixtures will be financed based on the savings generated with the utility company. The school district expects the projects to be paid back over a 4 year period.

In an effort to assure our facilities are being maintained properly and efficiently, the City now has its first ever energy and facilities manager, as well as an energy consultant to help track energy use in our buildings.

The city’s Facilities and Energy Division will be assisting the Board of Education with solar panel relocation from Smalley to a city garage in order to save energy and allowing the contract to continue with Tesla as the panels will continue to transfer energy to the grid.

## ***Common Council Chambers Technology Upgrades***

The Common Council Chambers have received a much needed innovation project to bring our public hearings up to speed with the 21<sup>st</sup> century. By increasing the use of technology within the chambers, residents now have access to council meetings online and have better viewing and listening capabilities through the technological advancements within the chambers.

The chambers are now equipped with two large viewing screens, computers for each member of city council, a projector for presentations being made, upgraded LED lighting fixtures, a new surround sound system, and a city-operated live stream during all council meetings, enabling residents to tune into the council meetings online at [www.newbritainct.gov](http://www.newbritainct.gov).

Each floor of City Hall is now equipped with an electronic screen with a City Hall directory that can be adjusted to add important announcements, city-sponsored events, and other important information. The screens also livestream government meetings when the council chambers are in session. These directory boards also serve to provide information on the day's events to those visiting City Hall.

## ***City Hall Energy and Lighting Upgrades***

City Hall recently underwent an LED lighting conversion project that allows the building to be more environmentally friendly as well as cost-effective. Both interior and exterior lighting fixtures at City Hall were replaced with LED lighting fixtures, improving lighting effectiveness, cost, and the environmental impact as a whole.

The LED lighting fixtures will have a state of the art control system, which will allow them to be dimmed, brightened, turned on and off, and adjusted accordingly through a website or app.

City Hall has also replaced 27 year old HVAC units that have a typical life of 15 years. The new units have variable air volume controls, as well as energy management controls to improve the environment within City Hall and generate significant gas and electric savings.

## ***SolveIT NB***

Policing website, "SolveIT NB" was launched in September of 2017 to help residents and business owners submit anonymous tips to help solve crimes and cold cases. The interactive website can be accessed through computers and smartphones at [www.solveitnb.city](http://www.solveitnb.city). Users can scroll through a digital bulletin of open cases and submit tips, photos, documents, and video footage directly into the website anonymously. As smartphones become increasingly crucial to everyday communications, this technology allows the community to share concerns and take initiative to help make their neighborhoods safer. Check it out at the link below!

<https://www.solveitnb.city/>

## *Crimeview*

Crimeview is a crime analysis, mapping, and reporting software that allows constituents to be more involved and knowledgeable of what's going on around the City. Crimeview allows constituents to view a live interactive map that pin points exactly where a crime took place and what kind of offense it was. As our City progresses and becomes more tech savvy, our police department has made lasting strides in their transparency with constituents. Check it out at the link below!

<https://www.crimemapping.com/>



## See-Click-Fix

See-Click-Fix is a mobile app platform for residents, business owners, and visitors to report non-emergency issues to Public Works and other departments accordingly. Mobile users can download the app from the Android and Apple stores by searching for “SeeClickFix New Britain.” Users can also access the SeeClickFix website at the link below:

<https://seeclickfix.com/new-britain>

Users can report blight, potholes, graffiti, and other issues seen fitting. The app and website also provides links for residents to the City website and links to pay water, sewer and tax bills online.

Users can submit photos, texts, and other information, which is passed on to respective City Hall departments for action. After residents report the issue on the application, residents are able to keep track of the progression of the issue by logging in to the See Click Fix application and searching for the issue they reported. City officials update the application with the latest progression of the

Issues   Answers   Neighbors   Watch Areas   [Report an Issue](#)

**Download New Britain SeeClickFix**  
Submit and track requests  
Follow request in your community  
Stay updated on local information and events

**START FIXING**

**ISSUES**

Search issues...

- A Apron**  
384 Commonwealth Ave New Britain, Connecticut
- B Other**  
384 Commonwealth Avenue New Britain, CT
- C in front of driveway**  
11 Whitman Street New Britain, CT
- D Tree Related**  
33 Birdseye Street New Britain, Connecticut
- E Trash and Recycling**  
96 Alden Street New Britain, CT
- city property maintenance**  
31 Vance Pl New Britain, CT 06052, USA
- Private Property Issue**  
865 Farmington Ave New Britain, Connecticut
- Pothole**  
17 Whitman Street New Britain, CT
- Tree Related**  
32 North Wellington St New Britain, Connecticut

« 1 2 3 4 5 6 ... 11 12 »

**SeeClickFix**  
Report, track, and discuss issues in your neighborhood. With just a few clicks, fellow citizens and your government can find and manage 311 issues instantly.

Download on the App Store   Get it on Google play

## Section 2: On the Street

*“On the Street” represents initiatives we are taking to innovate our city streets.*

### ***Electric Vehicle Charging Stations***

This project involved installing electric vehicle charging stations in downtown New Britain. Wall mounted charging stations were placed at the Szczesny and Blogoslowski parking garages, and a dual-head pedestal charging station was installed at the surface parking lot at 121 Main Street near the rear of the Police Department. Combined, these locations provide a total of six charging stations.



New Britain was selected to receive up to \$30,000 of reimbursements through a Connecticut Department of Energy and the Environment program for the installation of these electric charging stations, which were completed in 2015. The city also received \$15,000 from the Eversource Bright Ideas grant program for the replacement of exterior LED lights on city buildings.

The city is looking to add more charging stations in the near future as the demand continues to increase across our state and city.

### ***Streetlights Purchase***

The City of New Britain researched joining the ranks of a growing number of Connecticut municipalities that are purchased streetlights from Eversource Energy and converting the fixtures to high efficiency LED lighting resulting in large costs savings.

Overall, there are approximately 5,800 street lights in New Britain, and the combination of their purchase, and conversion to energy efficient LED fixtures was anticipated to save the city approximately \$600,000 per year in energy costs.



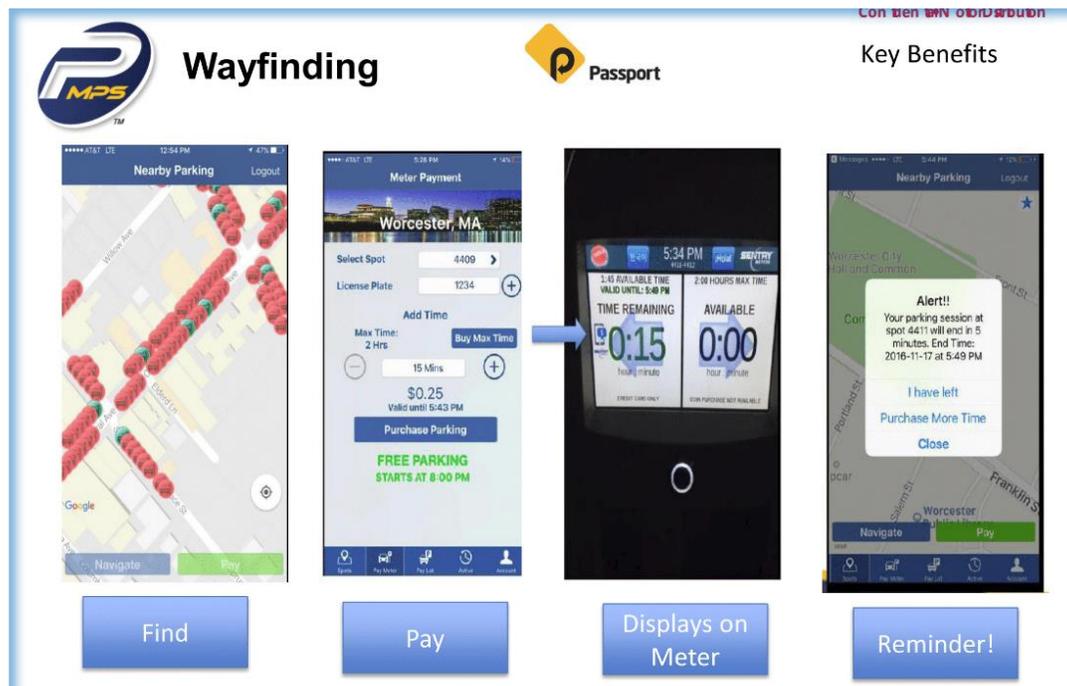
The first step in research involved a third party audit of the city’s street lights; this review was completed in February. Eversource Energy quoted the City an original purchase price of \$1,923,714.50.

After careful deliberation the city decided to not purchase the system. However, we have instead looked into utilizing Eversource's conversion to LED lighting campaign, which would allow for the city to limit the amount of light poles and maximize energy efficiency.

## ***SMART Parking Operation***

In an effort to improve the city's parking system, the city has partnered with Municipal Parking Services (MPS) to install new and innovative meters around the city. The system allows for constituents to download an app on their phone and use numerous user friendly options to make their experience easy and fast. The new system offers friendly consumer features such as expiration grace periods, text alerts, open space notifications, and optional safety features.

The city currently has a payment compliance rate of 45%. With the new MPS system in place, that percentage is projected to reach 90% due to real time technology and an interactive monitoring system. The city hopes to see an uptick in compliance in order to help ensure safety and efficiency.



To that end, the city piloted a program along Main St. to test their new technology in an effort to maximize safety, revenues, and consumer experience. These new state-of-the-art meters have the ability to enforce parking and come equipped with street and sidewalk facing cameras for additional security. Built in screen also allow up-to-date emergency information to be displayed, as well as the opportunity for advertising.

The Common Council is expected make a decision on whether or not to move forward with the installation in early 2019.

# ***GPS Tracking for Public Works Operations***

## ***Verizon Network Fleet***

New Britain Public Works manages the City's Winter Storm Operations which involves snow and ice clearing on nearly 170 miles of streets. These are large scale operations and require substantial numbers of employees and vehicles to be dispatched for this work. Critically important to these operations is effective communication and accurate and timely information being conveyed to the management team controlling these services. Historically, Public Works' Winter Snow Operations have been managed without real-time information about snow removal. Examples of real time metrics for these functions include current statuses of plows and field supervisors, the number of lane miles plowed, and the quantity of streets with successful mitigation completed.

The implementation of the Verizon GPS Tracking system provides real-time, web-based information about the current location of vehicles as well as a history of where they've been among other information. This allows for Public Works to manage Winter Storm Operations from a Command Center more efficiently and thus improve the level of service to residents during storm related clean-ups. The system has both senior management analytical and summary reporting, as well as in-storm activity reporting, after event tracking and detailed worker performance metrics. Snow fighting is a labor intensive relatively high cost activity. The system can produce high quality maps of progress on snow plow routes and aggregate metrics for each city neighborhood. In the ideal, a summary map will

be made available on the city web site, so citizens can measure progress on their street relative to other streets in the city. A snow operations center was recently established at the new Public Works yard.

There are a series of mission critical reports that have been developed which are ready for installation. Some changes in the user interface are necessary to facilitate dispatcher/manager updates to the system reflecting legitimate out of service time.



## ***City Fleet Management***

### ***Energy Efficiency and Cutting Costs***

Like all cities, the City of New Britain maintains a large fleet of vehicles and equipment that is needed for everything from routine maintenance activities to emergency response, and the City's fleet itself is one of the most important and costly assets to manage. The proper management of the City's fleet assets is critical. Thousands of dollars can be saved each year through the proper management of the City's fleet through making efforts to minimize fuel consumption, maximize vehicle and equipment life cycles, and minimize the overall size of the fleet.



In 2016 Mayor Erin Stewart established a goal of reducing the size of the City's fleet, and improving fuel efficiency. Public Works Fleet Operations has been continuing working towards achieving these goals ever since.

Following FY-16's 7.8% and 25 vehicle reduction, the City further reduced the size of its fleet by another 10 vehicles in FY-18, and continues to take efforts to minimize the size of the fleet. A good example of this is the current "Pooled Vehicle" initiative for City Hall staff. This program will be in place by September of 2018 and initially involves establishing five (5) "pooled" vehicles for use by all City Hall staff. The keys for these vehicles will be available through an electronic key keeper system located on the third floor of City Hall. The key keeper system also tracks the specific employee's use of the pooled vehicles. Historically a number of vehicles were either assigned to specific departments and/or employees, and were underutilized to justify these assignments. Pooled vehicles shares the use of these vehicles by all City Hall employees, and thus better utilizes these assets.

Several efforts related to improving the fuel efficiency and reducing fuel consumption of the City's fleet have also been implemented. Four of these recent efforts involve:

1. GPS Tracking System – The City implemented Verizon's Network Fleet real-time GPS Tracking System on all (non-emergency) Fleet Vehicles in 2017, and continues to use this system to monitor the use of its vehicles. One significant benefit of real-time GPS tracking systems is they reduce the amount of road miles driven by up to 20% because employees are less prone to make unnecessary trips, and more prone to take the most direct route for their assignments.
2. No Idling Policy - Vehicle idling not only unnecessarily wastes fuel, it also places unnecessary wear and tear on engines, and emits unnecessary carbon emissions. In 2017 the City implemented a strict "No Idling" policy which eliminates discretionary vehicle idling. The City's GPS Tracking System allows for the tracking of vehicle idling, and also generates automatic weekly reports to track vehicles idling at high percentages. Since this policy was issued in 2017 vehicle idling has been greatly reduced.
3. New Britain Police Department –For a number of reasons police vehicles have notoriously low fuel efficiency and the City has made some fleet management decisions to help improve the fuel efficiency and reduce the fuel consumption of NBPD vehicles. Two of these recent initiatives include:
  - V6 powered Ford Explorers have replaced V8 powered Crown Vic's as NBPD's standard front line police cruiser. This change has resulted in an improvement in fuel efficiency by as much as 10 miles per gallon.
  - Vehicle idling has been a problem for vehicles used on police "special duty" assignments because these cars needed to remain running to keep the warning lights on without draining the battery. Recently five (5) older police vehicles were designated as "special duty" vehicles, and have been retrofitted with systems that automatically start and stop these vehicles when the battery drains down eliminating the need for idling.

The City's Fleet Operations are also reducing costs by prolonging the life of vehicles within the City's fleet when compared to industry standards. A good example of this is the Water Caretaker Group's

1998 and 2002 pick-up trucks that are currently being programmed for replacement. The life cycle for pickup trucks in the City's fleet are planned for 10-12 years so at 20 and 16 years old both of these pickup trucks have far outlasted their planned lifecycle. Industry standards for the life cycle of pickup trucks is even less at 8-10 years. Most of the vehicles currently being planned for replacement in the City's fleet have surpassed their originally planned life cycle.

## ***Online Surplus Equipment Auction***

***www.GovDeals.com***

In February of 2016, the City began using an online auction for surplus property with a value of less than \$12,000. The old system was done by hand with a US Postal Service mailer sent out to hundreds of interested parties with the hope they will return a call and say they are interested.

That was very labor intensive, time consuming and didn't get the results necessary for the city to make money and unload scrap from the city yard in a timely manner. Items that sat at the yard became targets for thieves.

This new online process acts a platform similar to eBay for government surplus goods such as old cruisers, trucks, fire truck mirrors, and old equipment.

The provider chosen was [www.GovDeals.com](http://www.GovDeals.com). They have more than 8,000 sellers in 48 states and have done business in several towns around Connecticut. They have a financial settlement service which allows them to electronically collect funds from winning bidders. The bidders pay a fee to GovDeals and the city gets the value of the item sold at auction. There are 315,000 buyers that use this website.

The auction provides the city flexibility with length of time of the auctions; the average time is 14 days. The city can reject bids, or accept on items that are over a certain value which we can stipulate to our representative. Once the item is sold the buyer pays GovDeals and then sets up a time to pick up the item from the City.

The proceeds of the auction purchases are deposited into the General Fund. In 2017-2018, 26 City of New Britain vehicles were sold through GovDeals, amounting to a total of \$45,140.00.

The city uses GovDeals on an annual basis, especially when looking to significantly limit energy and fuel consumption while keeping the city's fleet efficient and effective.

## ***Simple Recycling***

The EPA estimates that over 85% of clothing, or 14.2 million tons of clothing, gets sent to landfills each year in the United States. New Britain has led the way in bringing one of the most innovative and up and coming recycling services in the country to the State of Connecticut.

The City has recently partnered with an Ohio based curbside textile recycling business to help eliminate the unneeded waste heading to our local landfills each day.

Simple Recycling provides residents with pink waste bags to dispose of textiles such as clothing, blankets, toys, kitchenware, and small electronics. The filled bag is then placed next to your normal recycling bin on the same day as your normal recycling pick up. Once collected, an unused pink bag is provided and new bags can be ordered free of charge.

Simple Recycling then separates the items within the pink bags based on condition, size, and worth. Some of the items are sold to consignment shops, others are sent to international markets, while most are recycled.

This new and quickly growing innovative service cuts local landfill tipping fees and allows for residents to dispose of items properly, as opposed to unnecessarily adding to our trash crisis. This environmentally driven service is free of charge to the city and residents. The city will profit \$20 per ton but will benefit most from a decrease in tipping fees.

In the first month of service in November of 2017, Simple Recycling collected nearly 18,000 lbs. of textiles in just New Britain alone. The city continues to monitor the service and has an open line of communication with Simple Recycling to help keep residents aware of the program and the impact it has on our community.



## Section 3: On the Ground

*“On the Ground” represents many of the projects we are working on or would like to see happen on city property.*

### ***Shuttle Meadow Reservoir Solar Array***

The solar array located on the campus of the water treatment plant has the capacity to produce up to 568 KW of energy instantaneously, which is more than enough to power the water treatment plant. Any excess power will flow back into the local electrical grid lowering the cost to operate the facility.

The array is located on 2-plus acres of land and is made of 16 rows which hold 2564 panels. These rows are arranged to have a southern exposure to maximize energy production. In total, the solar array is capable of producing approximately 1 million Kilowatts-hours of power annually.

This array’s carbon foot print is so low that using it is equivalent to having 1 million trees remove carbon from the atmosphere. By eliminating tons of greenhouse gases from being discharged into the atmosphere, the use of this array will provide the citizens of New Britain with a cleaner and safer environment.

The total electrical cost savings of this project over the 20 year life of the contract with Solar City is estimated to be \$2 million or \$100,000 annually.

Overall, the City has seen up to 35% savings on electrical costs.



## ***Fuel Cell Technology***

New Britain High School is home to one of the state's only fuel cells located on a high school campus. Fuel cells use natural gas to generate electricity through a chemical reaction using a hydrogen core. As electricity is created, a byproduct of heat is also generated. The heat can be used to supplement boilers, or hot water heaters being used to heat the building. The fuel cell generates 3.6 Million kWh of electricity annually. Currently, NBHS only uses roughly 2.5 million kWh of electricity each year.

The excess energy generated is sold back to the grid for credit

on the NBHS electricity bill. The School District Energy Manager says the fuel cell is incredibly efficient for the NBHS campus. Not only has the City seen cost avoidance with the school's electricity bills, but the district has been able to heat the building during the winter months with the heat byproduct helping to generate savings on heating fuel.

The fuel cell at NBHS is approximately the size of a 40 ton shipping container and has a 20 year life expectancy. This now enables the high school to be a standalone emergency shelter for the City during times of crisis.



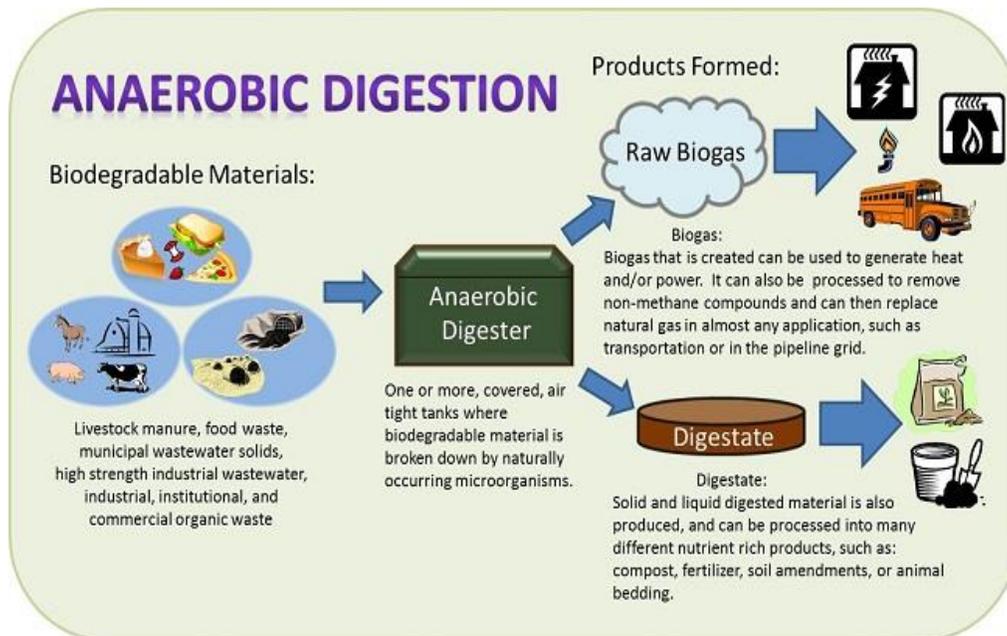
## Anaerobic Digester

In a great opportunity to save on energy consumption and become more environmentally friendly, the City is closing on a partnership with Fort Hill Ag-Grid LLC, a company that has formed to develop, build, and supply energy through an anaerobic digester.

Anaerobic digestion is a series of biological procedures in which microorganisms breakdown biodegradable material in the absence of oxygen. The end product is biogas, which is combusted to generate electricity and heat, or can be broken down into renewable gas and transportation fuels.

Waste such as livestock manure, municipal wastewater solids, food waste, industrial wastewater and residuals, fats, oils, and grease are among the sources of digestion that leads to the creation of biogas. The facility would be the first in the state and would generate green electricity and reduce organics from going into landfills.

The site is located in Thompson, CT and is currently going through the permitting process with the state and local government. Upon completion, the city will be able to purchase energy at a discounted rate. Completion is set for the second quarter of 2019.



## ***Energy and Innovation Park***

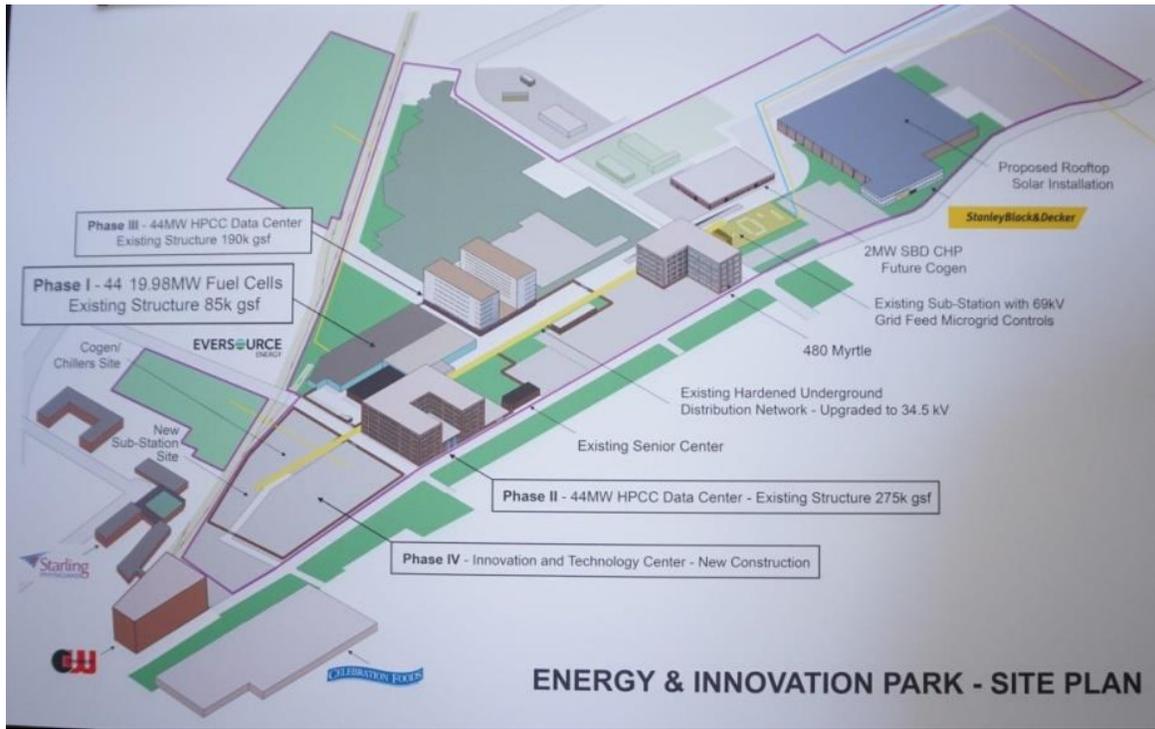
The City is extremely excited to soon be home to a fuel cell-powered high-speed data center complex – called the Energy and Innovation Park. This \$1 billion project will be constructed on Stanley Black & Decker’s downtown property, which was once home to the company’s original operations but has sat vacant for an extended period of time. The fuel cells will be manufactured by Doosan in South Windsor, CT and installed on site, making it the largest indoor fuel cell installation in the world. Doosan is a South Korean conglomerate that has vast experience in fuel cell technology around the world.



Phase 1 will supply provide 19.98MW of clean energy to the grid while only using 45,00- square feet of the empty industrial building. Furthermore, the waste heat from the fuel cells will be recycled in a “heating and cooling loop” to serve surrounding businesses and help reduce the carbon footprint of the entire project. The Energy and Innovation Park has been in the planning stages for 10 years and Phase 1 is expected to begin construction in early 2019.

As smartphones and data usage exceed user consumption on a daily basis, the long-term economic effects will benefit the City of New Britain and the State of Connecticut tremendously. Over the next 10 years, the tech park is predicted to create more than 3,000 jobs and produce \$45 million in tax revenues for New Britain, while producing over \$200 million in tax revenue for the state. With a project of this magnitude coming to New Britain, the city will attract IT related companies from several sectors, creating new jobs and development opportunities for local residents and businesses for decades to come. Take the virtual flyover below:

<https://www.faceclips.net/video/rrnMn80A So/eip-new-brita.html>



(Phases of the project)



(Potential design of data storage facility)

## Section 4: In the “Air”

*“In the Air” represents many of the projects we are working on or would like to see above street level.*

### ***Public Wi-Fi Access***

Internet has become an integral part of our citizen’s daily lives and a basic expectation. As part of the SMART initiatives, the City offers free Wi-Fi at several city-owned locations.

During the construction of the new revitalized downtown area, Wi-Fi radio signals were relayed throughout the area via a series of access points or radio transmitters. These newly installed access points offer those visiting with enough bandwidth to provide a pleasant internet experience that benefits those smart phone and tablet users with limited data plans. By providing the convenience of free connectivity to the internet, the hope is to increase the number of visitors to the downtown area and to make their stay more enjoyable while dining, shopping or just visiting.

As an additional benefit to providing free internet, the City will be positioned to disseminate vital information in cases of emergency and public safety to all connected users.

The Senior Center now has access to Wi-Fi and numerous parks are currently being equipped with Wi-Fi signals to enhance the overall park experience.

### ***Monitoring at Traffic Intersections and Parks***

Public cameras can help make parks, city sidewalks, and neighborhoods safer and more welcoming for everyone. Cameras posted in high-traffic areas can help reduce street crime and encourage more consumers to frequent stores and restaurants, increasing business and local revenue.

The city’s IT department, working in tandem with Public Works Traffic Division, has expanded the city’s monitoring program. The installation of cameras followed traffic control upgrades to most arms and traffic control boxes in the area of Main and West Main Street. In addition, cameras are positioned in Central Park and Walnut Hill Park as part of the “Smart City” public Wi-Fi initiative.

Cameras will also be placed in areas currently under construction to reduce installation costs or in high crime areas identified by the Police Department.

Surveillance requires an interconnected network of fiber optic cabling, switches, and cameras. The foundation being planned today will position the city to expand its coverage in all directions in the hope that one day we are able to have citywide coverage providing an increase in safety and security.

### ***Traffic Signal Modernization Program***

With the opening of the CTfastrak Downtown Station and various developments throughout New Britain, the City recognized the need to update its traffic signal equipment and has implemented a Citywide Traffic Signal Modernization Program. The City currently maintains 69 traffic signals within the City limits with each having an average lifespan of 25 years.

In the winter of 2016, the City was awarded \$3 million in funding from the state of Connecticut's Department of Transportation to modernize and upgrade the City's downtown traffic signals. The funding has allowed for 23 traffic signals to communicate with each other in order to improve traffic flow, reduce idling time for motorists, and reduce carbon emissions. The funding comes from the DOT's Congestion Mitigation and Air Improvement Program; only 13 towns or transit districts in the state received the funding.

Creating a safe, efficient and reliable transportation system is a vital component of a successful community, which is why New Britain has adopted a Complete Streets policy and implemented multiple complete streets projects throughout the downtown area.

**Phase I** of the Citywide Traffic Signal Modernization Program focuses on evaluating existing equipment, identifying new City of New Britain Standard Traffic Signal Equipment, and forming the program.

**Phase II** of the Citywide Traffic Signal Modernization Program is essential for promoting transit orientated development around CTfastrak, a key piece to the Citywide Traffic Signal Modernization.

**Phase III** is creating a transportation management system. Establishing a Centralized Transportation Management System will have many benefits. Including:

- Regularly monitor and adjust traffic signal timings
- Implement alternate local timing plans when incidents/closures occur on CT Routes 9 & 72
- Instant reporting allowing for timely response to issues
- Traffic Signal Controller Scans
- Data Collection
- Monitoring intersections during inclement weather and snow operations

The system incorporates the closed loop systems reestablished in Phase I along with ten other traffic signals in the downtown area. Under the Phase II project, a total of 23 intersections are managed with the centralized transportation management system and allow for expansion with future phases.

Providing coordination with appropriate timing plans will reduce excessive congestion, reduce delays and improve safety. New equipment will also include audible pedestrian equipment upgrades to the Manual Uniform Traffic Control Devices and Americans with Disabilities Act standards.

Seven intersections along Myrtle Street, East Main Street and Columbus Boulevard are incorporated into the centralized transportation management system.

An existing copper interconnect along Main Street was restored under Citywide Traffic Signal Modernization, Phase I and the traffic signals at these intersections are being replaced as part of other complete streets projects.

This project is expected to reduce the wait time for motorists by 38%, resulting in at least a 16% reduction in carbon monoxide emissions. The expected completion date is the fall of 2019.



## Section 5: Committee Recommendations

The SMART City Initiative Report provides this living document which can be found at [NewBritainCT.gov/smartcity](http://NewBritainCT.gov/smartcity) in an effort to educate the entire community about the initiatives and technology that exists to bridge government with the people for SMARTER living.

### *Looking Ahead*

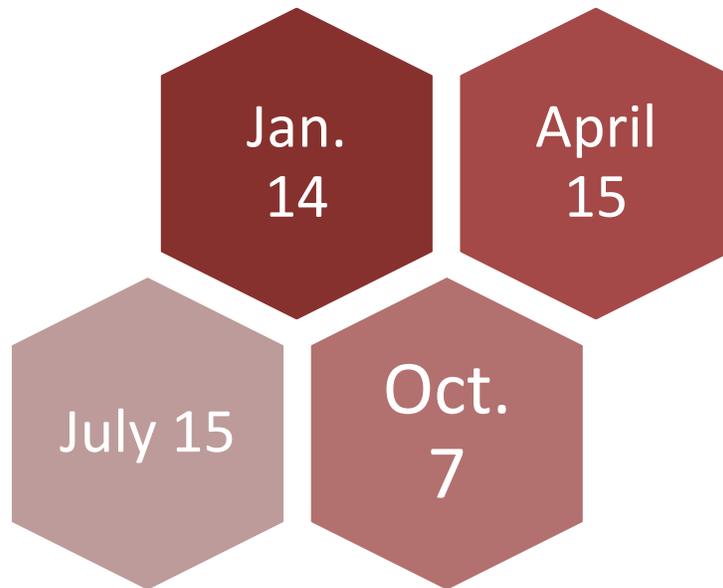
#### *Goals 2019*

- A 5% reduction in energy and electrical consumption in city owned buildings
- Anticipated efficiency measures will include: peak demand reduction, replacement of existing city-owned lights with LED retrofits, and the replacement of existing LED lighting fixtures
- Installation of user-friendly parking meters
- Implementation of Complete Streets Masterplan
- Use city-owned cell towers to full capacity in order to generate revenue
- Bring “Lime Bikes” to city residents for local transportation needs
- Address the impending ‘trash crisis’
- Look for additional ways to expand solar capacity on city properties
- Use technology to have better controls on our water system
- Automate our parking garages for 24/7 access
- Solidify the use of the statewide Everbridge system for emergencies

### **Conclusion:**

The SMART City Initiative will continue to guide the city on current projects and will seek and advise on future ideas. This guidance will come in the form of quarterly meetings. This report will evolve as new ideas come to light. The “green industry” is ever changing and the goal will continue to remain; stream lining government and maintaining SMART city practices. The city council and future leadership must look ahead and continue to evolve with best practices in mind.

# Committee Meeting Schedule 2019





# RESOLUTION

Item# 33373 RE: SMART City Initiative

**To Her Honor, the Mayor, and the Common Council of the City of New Britain:**  
the undersigned beg leave to recommend the adoption of the following:

WHEREAS, Mayor Erin E. Stewart, has launched a SMART City initiative where the city uses information and communication technologies to enhance quality, performance, and interaction with urban services to reduce costs and resource consumption and to improve contact between citizens and government; and

WHEREAS, the City of New Britain will endeavor to achieve its goals with the help of the Mayor's Energy and Innovation Committee; and

WHEREAS, the City of New Britain will seek to utilize the ideas such as conservation of energy in municipal buildings, the utilization of SMART technology to manage and control energy usage including the retrofiting of street light systems, and utilizing fuel cell technology among many other initiatives that will be set by the committee.

NOW THEREFORE BE IT RESOLVED, that Mayor Erin E. Stewart and the Common Council of the City of New Britain are committed to creating a new and improved "Hardware City" that will seek to reduce the city's carbon footprint and enable citizens to be energy conscious for generations to come.

  
Alderman Jamie Giantonio

  
Alderman Robert Smedley

  
Alderman Daniel M. Salerno

  
Christopher Polkowski

No 33373 Rec'd 01/27/2016  
(Above For Town Clerk's Use Only)

**RESOLUTION**  
Re: SMART CITY INITIATIVE

Ald. Smedley moved to accept and adopt, seconded by Ald. Salvio. So voted.

  
\_\_\_\_\_  
City Clerk

APPROVED  
  
\_\_\_\_\_  
Mayor  
1-28, 2016