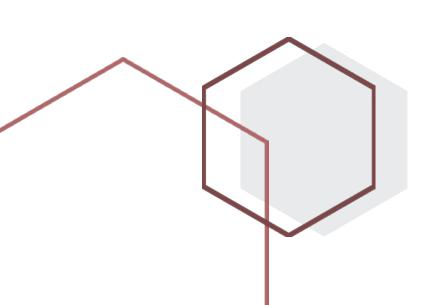


City of New Britain SMART City Initiative

City Initiative
Energy and Innovation Road Map for the Future



2020

Message from Mayor Erin E. Stewart



July 2020

The City of New Britain is proud to be 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 uses 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 explore new initiatives that are aimed at making New Britain a more technology-oriented and sustainable community. Since its inception, the group has overseen, provided guidance, and given feedback on

projects underway in New Britain. The group has also researched and identified additional projects that are focused on the group's mission. Through our work, we are creating a more sustainable environment for future generations.

One of the SMART City's most game-changing projects has been the Energy and Innovation Park, located at the corner of Myrtle and Curtis Streets, at the site of former Stanley Works factory buildings. The first phase of the project involves adding 44 Doosan fuel cells to the site. In subsequent phases, a data center will be added, making this development one of the largest of its kind. New Britain has long been the place where an industrious spirit has helped to spur development and new technologies. I'm proud to be Mayor as we embark on this new chapter in New Britain's history.

The City is also in the process of applying to gain silver status recognition from Sustainable CT, which is an innovative and voluntary program designed to make communities more resilient and forward-thinking by sharing best practices.

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.

Many innovative projects have been completed within the last four years and many wait to be tackled on the horizon. The projects that have been completed range from making our schools more energy and cost efficient, to the Energy and Innovation Park, which will bring \$1 billion in private investment to New Britain. Through public and private investment in our energy efficiency, we can truly pave the way for a stronger and more cost effective society. I encourage you to do your part as well!

Mayor Erin E. Stewart

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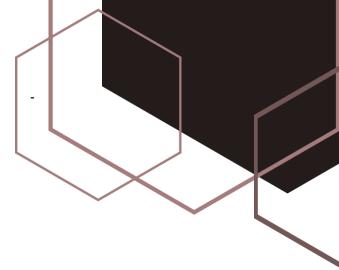


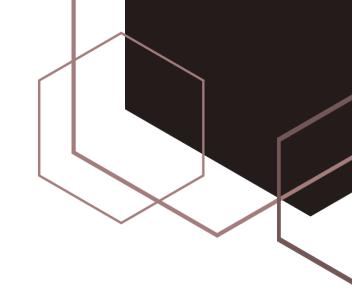
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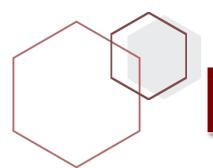


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PART 1: SMART CITY INITIATIVE UPDATE

Vision

The Energy and Innovation Committee was established by Mayor Erin E. Stewart in January 2016 as a way to transform New Britain into a "SMART City." Originally known as the "Energy and Innovation" plan, the original committee conceived this initiative under Mayor Stewart's leadership and in accordance with a directive from the New Britain City Council. Last 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 purpose 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.

The Mayor's SMART City Initiative established 4 objectives:

- **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

Committee Members

Mayor Erin E. Stewart

Justin Dorsey Mayor's Office

Mark Moriarty
Director of Public Works

William Carroll Economic Development

Paul Salina Director of Support Services

> Adam Pokoski Director of IT

Jon Delgadillo Facilities & Energy

Alderman Robert Smedley CSDNB

Bill Moore Chamber of Commerce

James Adams New Britain Resident

Michael Cassella New Britain Resident, Retired Eversource Executive

PART 1: 2020-2021 GOALS

5% Reduction in Energy

This goal aims to decrease electricity usage across all municipal buildings and schools, with the exception of New Britain High School as its main source of power is derived from a fuel cell. This concept has seen great success in the previous fiscal year, which led the committee to retain this goal for 2020.

In 2019, the City of New Britain was able to surpass this goal by double, seeing an 11% reduction in savings. Energy usage declined from 12,129,826 kilowatt hours in 2018 to 10,805,820 kilowatt hours in 2019, resulting in a savings of over \$200,000 for the City. These savings are mostly attributed to energy efficient HVAC upgrades, LED light conversions, and the addition of SMART controls for lights. This is certainly a positive feat our taxpayers can feel upbeat about as the committee continues to operate with their best interest in mind.

City Property Lighting Projects

City Garages: Both Szczesny and Blogoslawski parking garages have been outfitted with state-of-the-art LED lighting fixtures that will save the municipality on utility costs. Blogoslawski Garage had 539 fluorescent lamps replaced with new LED fixtures with motion sensors. The project is estimated to save 264,956 kWh a savings of over approximately \$35,000/year. Szczesny Garage will also have 805 fluorescent lamps replaced with new LED fixtures with motion sensors — a savings of an estimated 340,560 kWh, or \$50,000/year. There is a delay in shipping at this point in time, but the project will be closed out shortly after.

Other Properties: Veterans Stadium, Beehive Stadium, PAL Building, AW Stanley Pool Building, Fairview Cemetery, and two buildings at the City Yard have all been completely equipped with LED lights within the last year. This will result in thousands of dollars in savings annually.

The New Britain Police Department is also in queue to receive a LED light conversion. Through an incentive with Eversource, the \$194,000 project would only cost the City \$81,000 if completed by December 31, 2020. Additionally, the savings from the conversion to LED would be about \$37,000 in energy bills.

Energy Reduction Competition Between Schools

The Consolidated School District of New Britain facilitates public education for over 10,000 students over ten elementary schools, three middle schools, and one high school. The costs associated to power and maintain these buildings can be a financial burden to the Board of Education's operating budget. By reducing these costs, the difference in financial expenditures can be put toward other budget line items that benefit students.

The competition will involve a comparison of the energy consumption rate versus the previous year for each building. This friendly contest will encourage staff in all schools to make a conscious effort to practice energy saving solutions to combat "Vampire Energy." This term comes from all the common ways we neglect to "unplug and shutdown." Some of the most notorious ways we waste electricity are by leaving desktop monitors and TV's on or in standby mode, leaving lights on continuously after vacating a room, and non-programmable thermostats. The U.S. Bureau of Labor Statistics estimates that roughly 14% of our annual electricity costs are attributed to vampire energy. This number is up from 5-10% since 2015, which means we doubled our standby power costs.

While some buildings are already set or scheduled to receive new energy efficient boilers, data provided by this contest can help identify opportunities for savings within other schools and prioritize upgrades for each building. Fifteen new, energy efficient boilers were installed last summer to the following schools: Three boilers each were replaced at Pulaski Middle School, Slade Middle School and Roosevelt School and six were installed at New Britain High School. In addition, new boiler systems were included at the renovated Smalley and Gaffney Schools as well as the recent addition to the DiLoreto School.

LED Light Retrofit Projects in Schools

Roosevelt school will be the first school to have lighting fixtures replaced and retrofitted for interior and exterior LED lighting. The school district will evaluate the savings upon completion and look to do the same for Vance Elementary, Lincoln Elementary, and Northend Elementary. In addition, 26 boilers have been replaced throughout the district to account for more efficient heating operations.

Chamberlain Elementary

Chamberlain Elementary School is slotted as the next school to be renovated as new with an expansion. It is currently the oldest school to not have been updated since it was originally built. A feasibility study was presented at the June 24, 2020 Common Council meeting that estimates the cost to be \$49 million. The School Building Committee will be interviewing architects and builders soon as the intention is to break ground on this project in June 2021. In a memo to the School Building Committee, Mayor Stewart urged the committee to select vendors that supported the best interest of our students from a safety and public health

perspective. Building a brand new school gives the City a unique opportunity to set a new standard for public school buildings moving forward.

Re-install Solar on Smalley Elementary School

Smalley Elementary received a much needed renovation that including a full overhaul of the facility. During the renovations, the solar panels located on the roof had to be removed. A re-installation of panels could not take place until the building had its official Certificate of Occupancy issued and for the roof warranty to be in effect.

During the renovation, HVAC units were added to the existing and new roof areas and a building addition added roof area to the overall building. In November, Tesla sent a contractor to measure and diagram the Smalley roof to analyze the ability to re-install the panels. Due to the lapse in response from Tesla, the re-install was much debated as solar panel technology is not the forefront of energy saving technology anymore without state subsidy. The northeast is seeing a surge in fuel cell technology instead and the cost to put the panels back is \$150,000.

However, after consideration, it was decided that re-installing the solar panels was the more practical option as there is still 15 years left on the contract with Tesla. Additionally, a termination fee of \$235,000 would apply.

Additional Ways to Expand Solar

Alternative energy is gaining traction as we work to eliminate the need to run of depleting fossil fuels. The recently closed landfill on Deming Rd. was identified as a practical site to add more solar panels to our inventory. Many residential homes and businesses have utilized this option for their utility needs. Our municipality will also be able to capitalize on the benefits from solar energy by using this inoperable site to generate clean energy to feed back into the grid.

The first round of the approval process is under way and C-Tec Solar was selected as the vendor to lease and maintain the site. In the agreement, C-Tec will lease the panels from the City at a cost of \$130,000 year for 20 years. This is projected to make the City \$2.6 million in revenue with no liability to maintain the site.

An additional ambition we hope to execute would be to use the soil dredged from the Stanley Quarter Park Pond to fill in a second landfill location on Christian Lane. Our Public Works Department will need to coordinate with DEEP to see if this is a possibility.

Complete Streets Masterplan Phase 6, 7, & 8

The Complete Streets Masterplan was developed for Downtown New Britain in 2013 to provide a vision and set-by-step plan to unify its downtown area with an attractive streetscape while maintaining esthetics authentic to New Britain's history. The Master Plan follows design practices that improve the overall livability of the downtown area. It is important to configure a framework to connect people to a main focal point of everyday happenings through increased walkability, decreased traffic congestion, and through access to alternative transportation methods. The overall goal is to balance the needs of cars, people, bicyclists, and transit riders while in a safe, inviting environment.

A series of grants through HUD, CRCOG, and CT DOT have allowed the City to afford these improvements and fund the planned future construction to roads and sidewalks, updates to lighting fixtures, and landscaping.

Phases 1-5 of the Master Plan have been completed and the next couple of years will see phases 6-8 come to an end.

Phase 6: Expected completion May 2021

Phase 7: Out for Bid

Phase 8: Construction will begin in 2020

Phase 8 involves roadway improvements to Chestnut Street, Columbus Boulevard, and Washington Street. These serve as main gateways into downtown New Britain, and therefore face high traffic volumes, speeding, long intersection crossing distances, and challenging environments for pedestrians. Improvements to help alleviate these obstacles include reducing the amount of travel lanes in some areas, new drainage, granite curbing, paving, brick paver sidewalks, ADA upgrades, and vegetative landscaping. Altogether, phase 8 will cover about 2300 feet of roadway. The traffic signal at the intersection of Columbus Boulevard and Chestnut Street will be replaced and will be tied into the City's new centrally-controlled coordinated signal system that allows for remote changes to maximize traffic operations to be discussed later in the report.

Additionally, the Washington Street bridge crossing over State Route 72 will have the sidewalks reconstructed and the bridge rail will be removed and replaced with a new decorative rail to match adjacent projects recently constructed. In addition, there is a proposal for a multi-use trail on the north side of Columbus Boulevard, which requires taking approximately 10,000 square feet of state owned property along Route 72. The trail will terminate on Main Street south of the Beehive Bridge and is envisioned to be part of a 4.5 mile gap closure to connect with the Farmington Canal Heritage Trail.

Future planning for Complete Streets Masterplan

Continuing the Complete Streets Masterplan would lead to a Phase 9, which encompasses the remainder of Columbus Blvd through Ellis St. Similar actions to redefine this area are obtainable to make a uniform focal point where the highways connect.

An area outside of the downtown area has potential for similar action as well. The "East Side" could visually benefit greatly by applying the same concept to commercial corridors. This would revitalize the neighborhood and improve the appearance of many store fronts. Home to many manufacturing businesses in New Britain, John Downey Drive is a straight stretch that faces chronic speeding and worn-down infrastructure. Recently, the Department of Public Works submitted a Local Transportation Capital Improvement Program (LOTCIP) application to secure funding to repave this main route. The plans would narrow the street overall and add a multi-use trail along one entire side. Such upgrades would continue to support the manufacturing businesses that helped the New Britain land the Hardware City nickname, while catering to future businesses looking to develop in this area with upgraded aesthetics.

Preparation for the Impending Trash "Crisis"

The unfortunate reality when it comes to trash sustainability is that we consume and waste at a rate that far exceeds our capacity to handle. Aging infrastructure can no longer support the elimination of excess waste. Disposal prices are soaring for regular garbage and recycling. Our options are dwindling when it comes to solutions at a global level. Current means of disposal will come to a halt, which makes it imperative we have a plan in place to continue with waste management.

An alternative would be to incorporate an incentive for people to generate less trash, such as a pay-as-you throw program. This type of program requires residents to buy specific trash bags that must be used to dispose of their household waste. Some towns have seen success with this type of program — such as much as a 50% reduction in waste. When residents are accountable for their own waste it forces them to pay attention to the amount they actually generate.

However, it will take time for a system like this to be put in place statewide. Many legislators cannot advocate on behalf of a pay-as-you-go program for fear of backlash from their constituents, especially if they would not see a decrease in taxes owed. Lobbyists have also played a role at the state capitol to slow the implementation.

Add a Second Anaerobic Digester to City Portfolio

The addition of a second anaerobic digester will provide an extra source of sustainable energy to our community. Fort Hill Ag-grid, LLC is on the process of constructing another Anaerobic Digester in Coventry, CT. The expected completion date for this development is at the end of 2021, with the ability to start receiving discounted VNM credits at the start of 2022. For more information on how the anaerobic digester system, operates, scroll to page 16.

Expand Fiber Network to Increase Connectivity to City Hall

November 2019, the Connecticut Superior Court has issued its decision in favor of State Statute 16-233 which gives municipalities the right to use the municipal gain on poles and underground duct systems. This ruling provides the authority for the City to connect its facilities and assets such as Schools, Police, Fire Department, Traffic Control Signals, Parks, DPW buildings, and any other facilities and devices.

Services identified as necessary or favorable to the City such as public Wi-Fi, parking meters, remote lighting and surveillance, traffic control, gunshot detection, automated meter readings and systems monitoring, kiosks, signage, emergency call boxes, etc. are all possible with a connected city-wide network.

The Mayor and department heads will discuss projects and objectives, work with Public Works and the IT Department to develop a ranking system of which locations should be brought online. Options for communication pathways in order to maximize the number and the value of those items will be reviewed. These communications pathways will be assigned based on need and the return on investment.

A Master Plan with construction cost estimates intended to aid the Mayor in selecting and budgeting these projects will be provided.

Plan for 4G/5G Cellular Communication

U.S. mobile carriers have been planning the deployment of faster network connections known as 4G & 5G. Top carries like Verizon, AT&T, Sprint and T-Mobile have timelines to completely phase out 2G & 3G as soon as 2021. This technologically advanced system has potential to help the City function better with record high data speeds, however, more research is needed to determine what will be needed to carry out this conversion in terms of necessary infrastructure.

Cleary Energy Telecommunications Audit

At the recommendation of the SMART City Committee, the City agreed to enter into a contract with Cleary Energy Consultants to audit our telecommunications expenses. Communication services like internet, mobile devices, and television are often overlooked when compared to other operating expenses. Cleary Energy will conduct the audit of these expenses to help find ways to cut costs on these routine bills. Cleary Energy will only be reimbursed for their services if they can find tangible savings.

Apply and Achieve Next Level Sustainable CT Certification

Sustainable CT is an independently funded, grassroots certification program to recognize Connecticut municipalities taking strides to become more sustainable. It is a voluntary certification program offering a wide-ranging menu of best practices for municipalities to choose and implement in order to earn points toward certification. Much like the SMART City Committee aims to achieve, the certification was initiated to invigorate municipalities to think about the future. The categories associated with the Sustainable CT certification align with the initiative set forth by the SMART City committee, such as:

- Fostering energy-efficient and renewable energy
- Supplying municipal buildings with efficient operations, maintenance, and energy systems
- Promoting enhanced health, safety and access for all roadway users
- Balancing livability and economic opportunity
- Establishing policies and practices that recognize our finite resources and strive to find solutions to achieve a balance

The City was awarded the Bronze Certification in June of 2020, which remains valid through December 2023. Recognition was received by the New Britain Herald for this achievement. This award also put New Britain on the map for the few amount of CT municipalities to be awarded thus far. Departments in the City will continue to work together to garnish more points that will put us at the next level, the Silver Certification.

 $\frac{http://www.newbritainherald.com/NBH-New+Britain+News/374348/new-britain-earns-bronzelevel-certification-in-sustainability$

New Resolution from City Council Reaffirming Commitment to SMART Initiative

The last resolution to come from the Common Council was in January of 2016. Since then, the Common Council has seen many new faces sworn in ready to serve the City. In order to get our latest leaders on board with the SMART City Committee's progress towards a sustainable and energy efficient community, it is important to loop them in to our work. Formally known as the *Energy and Innovation Committee*, we will now seek to be recognized as the *Smart City Committee*.

COVID-19 Lessons: Remote Capabilities & Mobile Preparedness

The COVID-19 outbreak truly tested the ability of national, local, and state government to lead in a pandemic. Quick response from the administration was necessary to keep municipal operations active while information from the state changed on a day-by-day basis.

An immediate assessment was conducted of all City Hall departments to navigate how we could continue to provide services while eliminating in-person contact with the public and make each office as safe as possible.

With the help of the IT Department, many documents were uploaded to the City's website to help instruct residents on how to take care of routine items such as obtaining birth certificates, applying for building permits, and to facilitate online payments. However, some shortcomings included conducting virtual Common Council and commission meetings. Limited full-time staff and difficulties running proper technology posed challenges.

In planning for the future, the financial costs to employ additional staff along with the purchase of enterprise solution software and similar technology to broaden remote capabilities will come at a high premium. The virtual world allows regular business to be conducted much faster, however, the capabilities that would best serve the residents need to be evaluated in order to source the most practical options for the City.

PART 2: ONGOING PROJECTS

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. 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.

SMART Parking Operations

In an effort to improve the City's outdated parking systems, both city garages will be equipped with a new Parking Access and Revenue Control Systems (PARCS) to accommodate to the public's needs. These self-automated machines allow customers to pay their parking fee with a credit card through an intuitive interface when a parking attendant or cashier is not on duty. This upgrade is a part of an agreement with the Department of Transportation to share the cost of the new equipment. In return, the City negotiated a lease to allow 100 free parking spaces for fast track riders.

The resolution to implement PARCS (Parking Access Revenue Controls System) went before the New Britain Common Council during their November 13, 2020 meeting. It passed unanimously. The new system was expected to be up-and-running by mid-April 2020 but due to COVID related delays the system should be fully functional by the end of July 2020.

The resolution to implement On-Street Parking System Upgrades went before the New Britain Common Council during their January 8, 2019 meeting. It passed unanimously. The new system is expected to be up-and-running by end of August 2020.

In addition to garage parking improvements, the City will also see parking meter upgrades in the high-traffic areas currently lined with coin operated meters. The latest meters available offer additional conveniences to allow users to pay by credit card or through their cellular device. The new meters will function on a 4G & 5G network, offering the fastest speed for devices and serves to communicate with each other. It is important to wait for the newest models to become available as we phase out those that are only capable of operating on 2G&3G, which will soon be obsolete. Vendors will have the opportunity to bid shortly, and contracts will go into place upon review.

Traffic Signal Modernization Program

With the opening of the CT fastrak Downtown Station and various developments throughout New Britain, the City recognized the need to update its traffic signal equipment and implemented a Citywide Traffic Signal Modernization Program. The City currently owns and maintains 66 traffic signals within the city limits with each having an average lifespan of over 20 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 came from a Federal Program titled Congestion Mitigation and Air Quality (CMAQ) Improvement Program; only 13 towns or transit districts in the state received the funding. The funds were able to be used to upgrade technology to allow 23 traffic signals to communicate with each other and a Centralized Transportation Management Center in order to improve traffic flow, reduce idling time for motorists, and reduce carbon emissions.

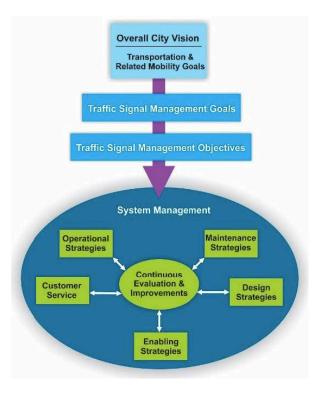
Creating a safe, efficient and reliable transportation system is a vital component of a successful community, which is why New Britain has adopted a Complete Streets policy and implemented multiple complete streets projects throughout the downtown area. In 2017 the City also adopted a Traffic Signal Management & Operations Plan. The goal of this plan is to identify what constitutes good basic service to the citizens of New Britain, and what is needed to ensure good basic service is provided. Along with this document a Citywide Traffic Signal Modernization Program was formed which included several phases:

Phase I of the Citywide Traffic Signal Modernization Program focused on evaluating existing equipment, identifying new City of New Britain Standard Traffic Signal Equipment, and forming the program. Other aspects of Phase I included removing unwarranted traffic signal installations and implement a Traffic Signal Preventative Maintenance Program.

Phase II of the Citywide Traffic Signal Modernization Program is essential for promoting Transit Orientated Development (TOD) around CT*fastrak*. Phase II is largely focused on Downtown New Britain which includes several traffic signal replacements and upgrades along with the creation of a Centralized Traffic Management Center (TMC). Establishing a Centralized Transportation Management Center will have many benefits. Including:

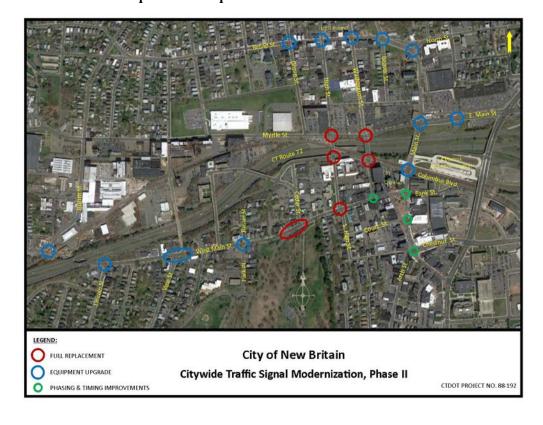
- Regularly monitor and adjust traffic signal timings
- Implement alternate local timing plans when incidents/closures occur on CT Routes 9 & 72
- Instant reporting allowing for timely response to issues
- Traffic Signal Controller Scans
- Data Collection
- Monitoring intersections during inclement weather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

Initially 23 intersections will be managed with the TMC with the ability to expand with future phases. Providing coordination with appropriate timing plans will reduce excessive congestion, reduce delays and improve safety. Coordination will be implemented along the West Main Street,



Main Street/Broad Street, Myrtle Street and Columbus Blvd. corridors. New equipment will also include audible pedestrian equipment upgrades to the Manual Uniform Traffic Control Devices and Americans with Disabilities Act standards.

The Common Council entered into an agreement with NY-Conn Corporation of Danbury for this phase during their May 13, 2020 regular meeting. 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 for this Phase is the summer of 2021.



Phase III will focus on retiming and upgrading traffic signals citywide as well as removing other unwarranted signals. Expanding the number of intersections connected to the TMC will continue. Establishing coordination and reducing congestion along other corridors within the City will be evaluated and implemented as funding becomes available. Phase III of the Citywide Traffic Signal Modernization is ongoing and will continue for several years.



Real Time Traffic Monitoring

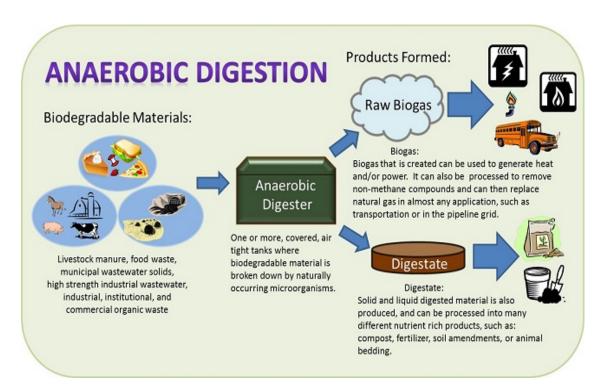


Anaerobic Digesters

A new and innovative opportunity to save on energy consumption was presented to the City by 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. 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 biogas is combusted to generate electricity and heat, or it can be broken down into renewable gas and transportation fuels. In our case, the renewable energy created is measured in Virtual Net Metering (VNM) credits.

The first facility, located in Thomaston, CT will be the first in the state and will generate green electricity and reduce organics from going into landfills. The site is currently under construction with an estimated completion within the fourth quarter of 2020. Upon completion, the City will be able to purchase energy at a discounted rate through the VNM credits starting at the beginning of 2021. New Britain will share the VNM credits with Middletown at this location. The second Coventry location in the works would only benefit New Britain.



A recent article on the first digester can be found here: https://americanbiogascouncil.org/two-leading-women-break-ground-on-connecticuts-first-dairy-

digester-at-fort-hill-farms/

Energy and Innovation Park

The City is extremely excited to soon be home to a high-speed data center complex powered by fuel cells—called the Energy and Innovation Park (EIP). 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 45,000-square feet of the empty industrial building. Additionally, 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 EIP has been in the planning stages for 10 years and Phase 1 construction began in 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, Phases 2-4 are predicted to create an additional 2,500 jobs and produce \$45 million in tax revenues for New

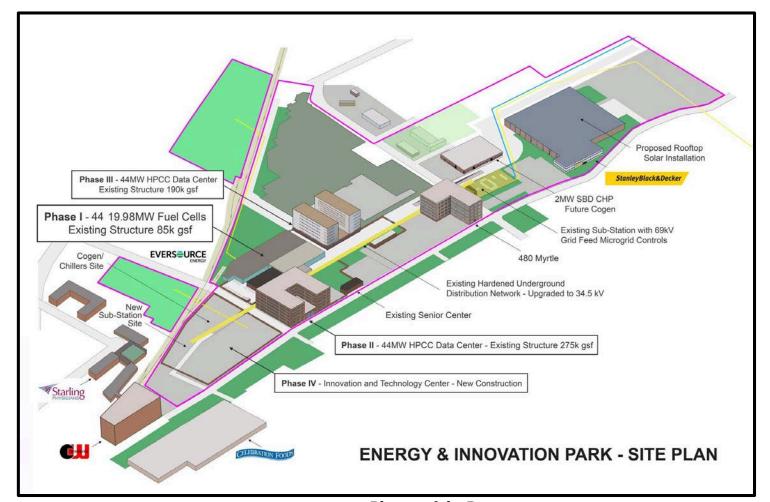
Britain, while producing over \$200 million in tax revenue for the state. With a project of this magnitude coming to New Britain, the City will attract IT related companies from several sectors, creating new jobs and development opportunities for local residents and businesses for decades to come.

Another exciting component of the project involves an eco-friendly hydroponic farm powered by the heat byproduct from the facility. H_2O Farms out of Guilford, CT specializes in hydroponic greenhouses that produce fresh, clean, high quality lettuce. Their technology uses a combination of water and heat to grow a controlled amount of product depending on demand all year round. It also cuts down on transportation and import costs. The greenhouse can be expected to produce mass quantities of heads of lettuce a week right here in New Britain. More information on H_2O Farms can be found here: $\underline{\text{http://www.h2o-farm.com/}}$

While the global pandemic known as Covid-19 has delayed production of the Doosan Fuel Cells, investors are anxious to move forward. Aside from delays on production time, the viability of the project remains intact.

Follow the link below to take the virtual flyover tour.

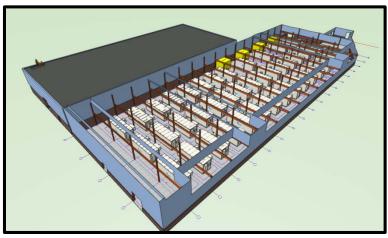
https://www.faceclips.net/video/rrnMn80A So/eip-new-brita.html



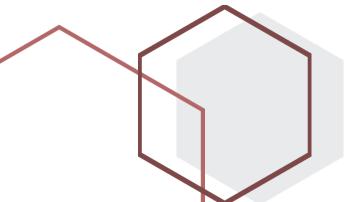


Potential design of data storage facility

Phases of the Project



Fuel Cell Floor Plan



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. These locations are:

- AW Stanley Pool
- Downtown Central Park
- New Britain Health Department
- New Britain Public Library
- Senior Center
- Veterans Stadium
- Walnut Hill Park
- Willow Street Park

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.

Locations planning to be equipped in the near future:

- New Britain Police Substation
- Osgood Park
- Washington Park
- Martha Hart Park

Since the COVID-19 pandemic, Wi-Fi access for all students has been a priority when public schools closed their doors in March to move to online teaching. Through a federal relief package known as the CARES Act, the school district received \$5 million in funding, which has been allocated to cover the cost of technology to give the students' access to Wi-Fi. A committee to help manage and advise on how this funding is spent was created called the School Technology CARES Act Task Force. The committee agreed to focus on expanding service to the playgrounds and parking lots in case classes must be conducted outside. Chesley and Stanley Quarter were also added to the list of parks to be equipped with Wi-Fi as they border neighborhoods that are in need of access. Pricing for other public locations like the Boys & Girls Club, YWCA, and OIC are also needed to move forward.

Watershed Management Plan

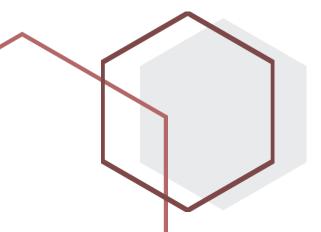
New Britain is fortunate to have its own Water Department that can supply safe, high quality drinking water to all residents. In 2018, the average daily demand was 9.21 million gallons per day. The NBWD maintains its water levels from nine different sources: The Shuttle Meadow Water Treatment Plant draws water from the Shuttle Meadow, Wasel, Whigville, Wolcott, White Bridge, and Hart Ponds Reservoirs. The department also has three well fields: The upper and lower White Bridge well fields in Bristol, and the Patton Brook well in the Town of Southington. New Britain can also supplement its water supply by withdrawing water from the Metropolitan District's Nepaug Reservoir.

A water assessment of New Britain's source water was completed by the Department of Public Health, Drinking Water Section. The updated assessment report can be found on the Department of Public Health's website:

www.dir.ct.gov/dph/Water/SWAP/Community/CT0890011.pdf

Plan of Conservation and Development

This year, the City of New Britain has committed itself to undertaking a wholesale and comprehensive update of its Plan of Conservation and Development. Doing so will allow us to gather data and to thoroughly assess the current demographic, social and economic conditions of the community. Additionally it will allow us to draw insight from the various current trends and developments that are becoming evident on state, regional, national and worldwide levels. In conjunction with the Mayor, the process will strongly encourage and incorporate input from community stakeholders into the planning document, as well as in the development and analyzing of goals and policies for the City to pursue in its future development and redevelopment efforts. The plan will examine the City's strengths, weaknesses and opportunities and help us to devise and implement measures that will aid us in becoming a stronger, more attractive, and more prosperous community for all. The State of Connecticut requires the POCD to be up-dated every 10 years. Furthermore, the City's code of ordinances requires this process to be done through the City Plan Commission, and adopted by Commission and Council per Sec 19-19 thru 19-24.



PART 3: LOOKING AHEAD

In an effort to educate the entire community about the initiatives and technology that exists to bridge government with the people for SMARTER living. This SMART City Initiative Report can be found at: **NewBritainCT.gov/smartcity**

Meeting Dates

January 6, 2020 April 6, 2020 July 8, 2020 October 5, 2020

Conclusion:

The SMART City Initiative will continue to meet as a committee quarterly to lead the City through current projects and routinely advise on future ideas. This report will evolve as new ideas come to light, with many more additions to the "completed project" section. 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 to serve our stakeholders at the highest level.



Shuttle Meadow Reservoir Solar Array (2015)

The solar array located on the campus of the water treatment plant has the capacity to produce up to 568 kwh 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.

Electric Vehicle Charging Stations (2015)

This project involved installing electric vehicle charging stations in downtown New Britain. Wall mounted charging stations were placed within the Szczesny and Blogoslawski parking garages. A dual-head pedestal charging station was also installed at the surface parking lot located 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 the State of Connecticut Department of Energy and the Environmental Protection 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.

OneSolution – Financial Management Software (2015)



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 and W2's, as well as change personal contact information. Through this upgrade, the City is saving money on check stock, ink, and labor to produce check stubs on a weekly basis, including the reduction in 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 called Time Clock Plus. This module allows workers to access their accruals and to request time off. This saves city staff countless hours of manually calculating individual time accruals, thus providing applicable departments with the efficiency they need to operate.

Fuel Cell Technology (2015)

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.

Online Surplus Equipment Auction (2016)

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. 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 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.

The provider chosen was 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 through GovDeals and then sets up a time to pick up the item from the City.

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. The proceeds of the auction purchases are deposited into the General Fund. From 2016-2020, surplus vehicles and equipment accounted for just over \$149,000 in sales.

City Fleet Management (2016) 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. Thousands of dollars can be saved each year through the proper management of the City's fleet by 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 to reduce the size of the City's fleet, and improve fuel efficiency. The Department of Public Works' Fleet Operations Division has been tasked to carry out this goal.

Following FY-16's 7.8% or 25 vehicle reductions, the City further reduced the size of its fleet by

another 10 vehicles in FY-18, and continues to make 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 involved the establishment of 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 vehicle shares allow City Hall employees to better utilize these assets.

Several efforts to improve the fuel efficiency and to reduce fuel consumption of the City's fleet have also been implemented. Three 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 usage. 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 is not only an unnecessarily waste of fuel, it places extra 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 will generate automatic weekly reports to document vehicles idling at high percentages. Vehicle idling has been greatly reduced since this has been implemented.
- 3. New Britain Police Department —Police vehicles have notoriously low fuel efficiency due to a number of different factors. 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 by police on "special duty" assignments. 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.

GPS Tracking for Public Works Operations Expanded (2017) 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 roadway. These are large scale operations and require a substantial number 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.

Ideally, 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 Website Redesign & Expansion (2016) www.newbritainct.gov



The City's Information Technology Department has expanded the City's web presence with both a recently redesigned government website, and 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 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.

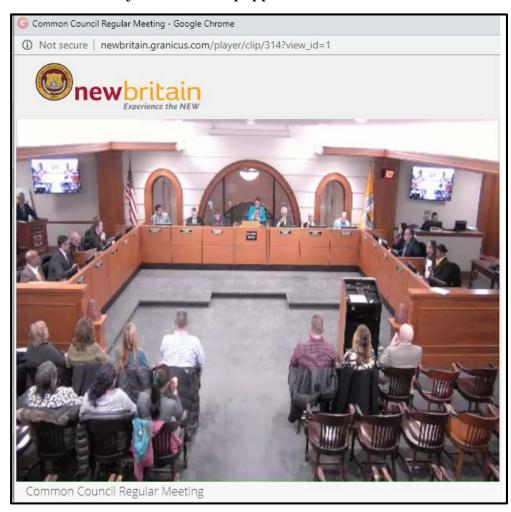
Granicus Legistar automates City Council meeting on and meeting facilitation with tools to streamline minutes, voting, full reporting and publishing to a citizen-facing web portal. The legislative portal includes Common Council demographic information, resolution sponsorship, and voting history. It's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

Common Council Chambers Technology Upgrades (2017)

The Common Council Chambers have received a much needed innovation project to bring our public hearings up to speed with the 21st 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 council member, 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.

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, citysponsored 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 (2017)

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.

Simple Recycling (2017)

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.



See-Click-Fix (2017)

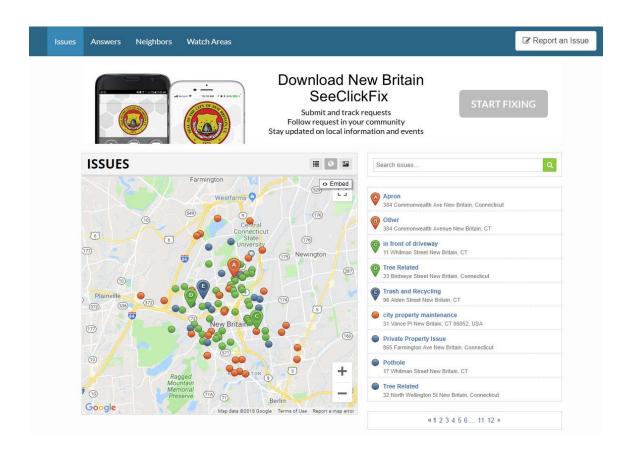
See-Click-Fix is a mobile app platform for residents, business owners, and visitors to report non-emergency issues to Public Works and other departments accordingly. Mobile users can

download the app from the Android and Apple stores by searching for "SeeClickFix New Britain." Users can also access the SeeClickFix website at the following link:

https://seeclickfix.com/new-britain



Users can report blight, potholes, graffiti, and other issues witnessed by submitting photos and descriptions of the problem with the location. The information submitted is passed on to respective City Hall departments for action. After a complaint is reported through the application, residents are able to keep track of the progress to resolve the issue by logging into the See Click Fix application. They are also notified by email. The app and website also provide links for residents to the City website to pay water, sewer and tax bills online.



SolveIT NB (2017)

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. 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 (2019)

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/

Monitoring at Traffic Intersections and Parks (2019)



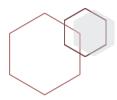
Surveillance cameras can help make parks, public spaces, city sidewalks, and neighborhoods safer and safer for everyone. Cameras mounted on the City's infrastructure help deter crime and if a crime is committed help identify the offender quickly and more efficiently. This creates a safer, more attractive place for residents, consumers, business owners and motorists.

The City's IT Department and Public Works Traffic Division have and continue to expand the City's monitoring program. Several cameras have been installed on traffic signal equipment throughout downtown. The camera feed is viewed "live" at the City's newly created Traffic Management Center to aid in monitoring and identifying traffic issues. In addition, cameras are positioned in

Central Park and Walnut Hill Park in conjunction with the "Smart City" public Wi-Fi initiative. Most recently, cameras were installed to view the new Bee Hive Bridge. All cameras are recorded and shared with the New Britain Police Department.

Cameras are being incorporated into current and future construction projects to reduce installation costs. Public safety areas are also being identified by the New Britain Police Department for camera installations.

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.



This concludes the 2020 SMART City Report.

