

Citywide Traffic Signal Modernization, Phase II - Exhibit A – Project Description

Introduction

With the opening of the CTfastrak Downtown New Britain 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 of New Britain currently maintains 67 traffic signals within the city limits with an average age of 26 years old.

Creating a safe, efficient and reliable transportation system is a vital component of a successful community. New Britain has adopted a Complete Streets policy and implemented multiple complete streets projects throughout the downtown area. Accommodating all users, lane reductions & road diet strategies synonymous with complete streets emphasizes the importance of a reliable and efficient traffic signal network. Phase II of the Citywide Traffic Signal Modernization Program is essential for promoting transit orientated development around CTfastrak.

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. The City selected standard traffic signal equipment that is compatible with city's complete streets philosophy, bicycle friendly and will provide flexibility going forward. ATC traffic controllers and video detection capable of detecting bicycles are among the equipment selected. Phase I, in conjunction with a series of complete streets projects, also reestablished an abandoned closed loop system along Main Street in the City's downtown center and created the start of a centralized transportation management system.

Phase II and future phases of the Citywide Traffic Signal Modernization Program will continue to improve New Britain's traffic signal infrastructure by eliminating unwarranted signals, upgrading older equipment and expanding a centralized transportation management system.

Central Transportation System

A key piece to the Citywide Traffic Signal Modernization, Phase II is expanding the newly created transportation management system. The City's centralized traffic operations center currently consists of only four intersections. The Public Works Department primarily relies on motorists to report issues or public works staff identifying problems while traveling throughout the city.

Expanding the Centralized Transportation Management System will have many benefits. One of the primary benefits will be the ability to manage the timing of traffic signals within the downtown. Management software will allow an operator at a workstation to communicate directly with field equipment and modify traffic signal programs in real time. Other benefits include:

- 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



Under the Phase II project, a total of 23 intersections will be connected & managed with the centralized transportation management system and allow for expansion with future phases.

Citywide Traffic Signal Modernization, Phase II - Exhibit A – Project Description

West Main Street

West Main Street serves as an east-west corridor to/from the downtown center and CTfastrak. West Main Street, CT 555, is a two lane roadway with an average daily traffic volume ranging from 12,800 to 8,600 vehicles. This corridor is a CTtransit bus route servicing Bristol and Plainville. The City of New Britain maintains nine traffic signals along West Main Street:

- West Main Street @ Burritt Street
- West Main Street @ Lincoln Street
- West Main Street @ Vine St. / Curtis St.
- West Main Street @ Park Place / Russel St.
- West Main St. @ Cedar St. / Walnut Hill Park
- West Main Street @ High St. / South High St.
- West Main Street @ Washington Street
- West Main Street @ Pedestrian Crossing at City Hall/Central Park
- West Main Street @ Main Street / Bank St.



Loop vehicle detection at many intersections has failed causing unneeded delay. As part of Phase I, a defunct copper interconnect was replaced with fiber optic cable connecting nine intersections. However, Phase I did not include other traffic signal equipment needed to establish an optimized coordinated system. Building on Phase I, Phase II **improvements include controller and vehicle detection upgrades to reduce congestion**. The proposed video detection will also incorporate bicycle detection. New Britain committed to become more bicycle friendly community. The City has created over 30 miles of bike routes on city streets.



West Main Street Improvements

- 9 Intersections
- 2 Full Intersection Replacements
- 7 Controller & Communication Equipment Upgrades
- Vehicle & Bicycle Detection
- Timing & Phasing Improvements
- Consider Adaptive System

Phase II also includes full traffic signal equipment replacements at the Cedar Street/Walnut Hill Park intersection and High Street/South High Street intersection. Phasing and associated equipment improvements will help alleviate left-turning vehicles from blocking through traffic on West Main Street.

As part of the Citywide Traffic Signal Modernization, Phase II, **an Adaptive Traffic Control System will be evaluated for the West Main Street** corridor. An Adaptive System that collects traffic data, analyzes the data and adjusts timings for current demands has been proven to reduce travel time, delays and emissions.

The West Main Street signalized intersections will be incorporated into the centralized transportation management system.

Columbus Boulevard, Myrtle Street & East Main Street

Columbus Boulevard is a direct link between CT Route 72 to the West, the downtown center/CTfastrak and CT Route 9 to the South. Connections to towns west of New Britain are provided via Route 72 and I-84. Route 72 Exit 8 terminates at the beginning on Columbus Boulevard. Columbus Boulevard, a four lane roadway, then runs east to City Hall, the downtown center, parking facilities and CTfastrak. From the downtown center, Columbus Boulevard also runs south with a connection to Route 9. The average daily traffic volume is about 7,000 vehicles. The City maintains three key intersections along this segment of Columbus Boulevard:

- Columbus Boulevard @ High Street
- Columbus Blvd. @ Washington Street
- Columbus Boulevard @ Main Street



Myrtle Street and East Main Street act as a major east-west artery across the city. Myrtle Street within the downtown area varies from two to four lanes wide with additional turn lanes at intersections and is a signed bicycle route. Dedicated bike lanes were installed along Myrtle Street in 2014 to provide important bike route connectivity between a large housing development, Stanley Works, Downtown and CTfastrak. East Main Street, an urban arterial, is four lanes wide with additional turn lanes. CT Route 72 westbound can be accessed from East Main Street. A Route 9 southbound Downtown exit ramp is located just outside the project limits to the East. The average daily traffic volume on Myrtle Street is in the range of 7,200 vehicles and East Main Street is 15,200 vehicles. Intersections include:

Columbus Blvd, Myrtle Street & East Main Street Improvements

- 7 Intersections
- 4 Full Intersection Replacements
- Pedestrian Improvements
- Controller & Communication Equipment Upgrades
- Vehicle & Bicycle Detection
- Timing, Phasing & Coordination Improvements

- Myrtle Street @ High Street
- Myrtle Street @ Washington Street
- Myrtle Street @ Main Street / East Main Street
- East Main Street @ Route 72 On-ramp / Plaza Driveway

The Main Street and East Main Street traffic signals are not coordinated creating vehicle queues that frequently extend between and through adjacent intersections. Vehicles often queue over and stop on the railroad tracks between Myrtle Street and Columbus Boulevard. Phase II improvements include reestablishing and upgrading an existing interconnect. **Providing coordination with appropriate timing plans will reduce excessive queuing, reduce delay and improve safety.**

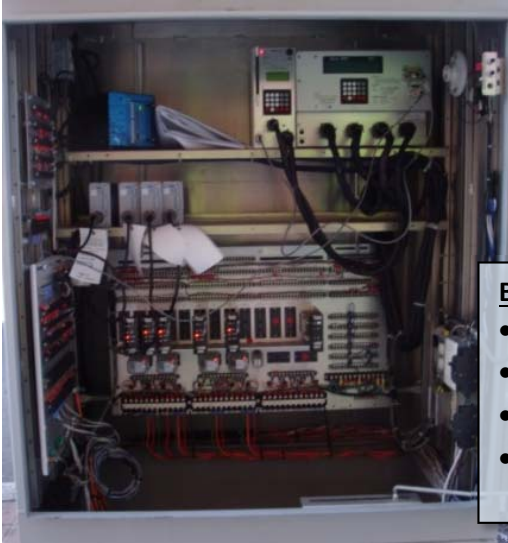
Traffic signal equipment at the Myrtle Street/High Street, Myrtle Street/Washington Street, Columbus Boulevard/High Street and Columbus Boulevard/Washington Street intersections is beyond its design life. City staff routinely responds to equipment issues at these intersections. Pedestrian amenities do not meet current standards. Visually impaired residents travel this route daily often finding the audible pedestrian signal not functioning. Proposed Phase II improvements include full traffic signal replacements at these four intersections. **New equipment will include audible pedestrian equipment upgrades to the MUTCD and ADA standards.**

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

Citywide Traffic Signal Modernization, Phase II - Exhibit A – Project Description

Broad Street

Broad Street is the heart of New Britain's well known Little Poland. Broad Street runs east/west connecting Burritt Street (a significant north/south route through the city) to Little Poland to Main Street to the downtown center and CTfastrak. Broad Street is primarily two lanes with turn pockets at some intersections and on-street parking along both sides of the road.



Five intersections along Broad Street were previously upgraded as part of other projects and are in relatively good condition. These intersections are:

- Broad Street @ Grove Street
- Broad Street @ High Street
- Broad Street @ Washington Street
- Broad Street @ Beaver Street / Main Street
- Main Street @ North Street

Broad Street Improvements

- 5 Intersections
- Interconnect
- Vehicle & Bicycle Detection
- Timing, Phasing & Coordination Improvements

These intersections are not coordinated, however a conduit was installed from the controller cabinets to the City's underground duct subway system to allow for a future interconnect cable. **Under this project, a fiber-optic interconnect within the existing conduit system will link the intersections** and tie into the central transportation management system. Equipment upgrades including new controllers and video detection are included in this project to improve operations. An Adaptive Traffic Control System will be evaluated for Broad Street.



Main Street

The Main Street intersections were or are being replaced through several complete streets projects. However not all intersection were incorporated into the centralized transportation system. Phase II will complete the system and improve coordination along the Main Street corridor. The Main Street intersections include:

Main Street Improvements

- 5 Intersections
- Interconnect
- Timing, Phasing & Coordination Improvements

- Main Street @ Myrtle Street / East Main Street (included in Columbus, Myrtle East Main section above)
- Main Street @ Columbus Boulevard (included in Columbus, Myrtle East Main section above)
- Main Street @ West Main Street (included in West Main Street section above)
- Main Street @ Court Street
- Main Street @ Arch Street / Chestnut Street