

# **NON-UTILITY CAPITAL IMPROVEMENT PROGRAM**

**2019-2023**

## **PROJECT DESCRIPTION**

**Last revised 09-04-18**

### **I. PUBLIC SAFETY**

#### **1. Ambulance Replacement**

The plan is to replace ambulances as necessary to maintain a fully operational fleet of seven (7) ambulances, minimizing breakdowns and expenses incurred from heavy usage and high mileage. The plan involves the on-going replacement from BOND or other alternate funding sources. The mechanical bureau will determine which ambulance will need to be replaced regardless of age based on warranty information, mechanical maintenance records and visual inspections of the fleet at the time of replacement.

#### **2. Fire Apparatus Replacement Plan – Quint Ladder Truck**

Quint Ladder Truck – The back-up ladder truck is in need of replacement. By 2019 the existing Quint, Engine #5 will be 23 years old. The new Quint would replace a Quint purchased in 1997 that has 82,800 miles recorded and 8,000 hours of run time. The City garage should be consulted on the life expectancy of this vehicle in the fire fleet. The replacement apparatus would have both a ladder and fire pump which can serve dual roles within the department. By having a fire pump with the ladder, the need for a second vehicle to feed water to the unit is not necessary. With the development of the 412 corridor, the need for aerial capabilities is becoming more paramount. The total cost of the vehicle is \$1,105,215 that could be leased over 4 years.

#### **3. Fire Apparatus Replacement Plan – Rescue Engine Replacement**

Rescue Engine Replacement – The current Rescue Engine #6 needs to be replaced. Rescue Engine #6 responds to all fires in every section of the City of Bethlehem and is showing significant wear and tear. While this unit was purchased in 2009, there have been numerous problems with the emission systems and motor. As of 2009, there has been \$85,000 spent on repairs to keep the vehicle on the road. At present, there is 46,000 miles logged with 6,800 hours of running time. This engine should be removed from the fleet as a rescue engine due to the reliability issues the department has experienced in the past. The cost of this vehicle is \$737,325 that could be leased over 4 years. Consideration should be taken into refurbishing the motor and emission control systems to keep this vehicle as a reserve piece for apparatus when one of our front line pieces is out of service.

#### **4. Self-Contained Breathing Apparatus**

The Bethlehem Fire Department is in the second phase of replacing outdated SCBA that has met the end of its service life. In 2017 all fire department SCBA were replaced with new equipment that meets the current NFPA requirements in addition to the filling system. The Bethlehem Police Department has several packs that are coming to the end of their service life. It is essential that the police department air packs be compatible with the fire department SCBA program so that filling empty bottles, fit testing, minor repairs and interagency use of spare bottles does not impede public safety. The primary use of the BPD SCBA would be used for Emergency Response Team operations when individuals pose a threat using chemical or biological hazards. Law enforcement packs are designed with less audible alarms so as to not give away an officers position during an operation unlike the multiple alarms on a fire service pack.

5. **Police Body Cameras**

The BPD implemented Phase I of the initiative to update all marked police cruisers with in-car video camera systems and also to initiate a body camera system to be worn by all uniform officers and certain specialized units. The City will now start Phase II (police body cameras) of this two Phase approved initiative.

Currently BPD has no body cameras. This proposal is for funds to support the purchase of 150 body cameras for BPD Officers. The budgeted strength of BPD is 154 officers. With the purchase of these body cameras, we should be able to outfit all BPD uniform officers and some others. These cameras would greatly enhance policing in this city and also bring BPD up to modern DOJ standards that are being recommended for all departments across the country. The average price of a body cameras ranges from \$500 to \$1000 each. Testing and analysis would be done by the department to ascertain the best camera that fits our needs. This proposal is for \$190,000.00 over a two year period. The Budget includes a \$90,000 grant from the Department of Justice.

6. **Fire Apparatus Replacement Plan – Engine Replacement #1**

Engine Replacement – The Fire Department’s fleet of front line equipment is getting older and is starting to show its age through wear and tear. By 2019 two of these vehicles will have reached the 19 year mark as both were purchased in 2000 and need to be considered for replacement. This line item is the first of these two vehicles. These engines would not be removed from the fleet, but be put into reserve status to replace 1997 Engines in reserve status that are used when equipment is down for repairs or put into service during multi alarm events. The engine considered for replacement has over 90,000 miles. This vehicle is being recommended to be purchased with a 4 year lease.

7. **Fire Apparatus Replacement Plan – Engine Replacement #2**

Engine Replacement – The Fire Department’s fleet of front line equipment is getting older and is starting to show its age through wear and tear. By 2019 two of these vehicles will have reached the 19 year mark as both were purchased in 2000 and need to be considered for replacement. This line item is the second of these two vehicles. These engines would not be removed from the fleet, but be put into reserve status to replace 1997 Engines in reserve status that are used when equipment is down or put into service during multi alarm events. The engine considered for replacement has over 70,000 miles.

8. **City Government Center Security Upgrade**

Safety and security at the workplace are a present concern for today’s workforce. This project involves an upgrade of the entire security system within the Bethlehem City Government Buildings A and B. This security upgrade, as provided by CSI, will address present and future security concerns and issues in the City Government Center Buildings and security situational awareness for all of the City workforce. The project covers the upgrade of existing panic buttons, cameras, access control doors, security hardware and software. It also covers the addition of three cameras in the complex, some additional security doors, access control devices, elevator security, stairwell and panic buttons. An updated security desk on the first floor is also provided for, along with all necessary equipment and training for City employees. CSI will provide project management for all areas of the project including electrical work, door hardware and installation and elevator work as associated with access control. This project will

provide and integrated security solution for the City of Bethlehem utilizing our existing Genetec Security Center platform. This is a necessary and common sense upgrade to the obsolete security system currently in place at City Hall, buildings A and B.

## II. PUBLIC WORKS

### A. TRAFFIC

#### 1. TR/Isolated Intersections

Install new or upgrade existing signals at various locations. Each intersection costs between \$200,000 to \$220,000. Proposed potential new signal locations include East Boulevard & Linden Street, Butztown Road & Easton Avenue, Linden Street & Elmhurst Avenue, and Third Avenue & Union Boulevard. Needed upgrade locations include Goepp and Center Streets, Goepp and New Streets, Goepp and Main Streets, Broad and Linden Streets, Market and Center Streets, Market and New Streets, Center and Church Streets and Linden and Goepp Streets. Construction of the upgraded traffic signals at the intersection of Broad & Center Streets will be completed in 2018. Construction of the upgraded signal at Broad and Main Street will be completed in late 2018 or early 2019 if funding is available. Both intersections cost about \$20,000 for design and \$200,000-\$220,000 for construction. Design work for the upgrading of the traffic signals at the intersections of Linden Street & Elizabeth Avenue and Broad and Linden Streets will be completed in 2018 with construction in 2019.

#### 2. TR/Traffic Safety Improvements

Replacement of outdated traffic controllers and traffic signal cabinets at various locations for our 128 signalized intersections and flashers. Purchase of uninterrupted power supply units (UPS), radio communication/interconnect equipment, and video detection cameras and equipment to replace damaged or broken in-roadway traffic loop detection is also budgeted under this item.

#### 3. Route 412 Street Lighting Upgrade

The City continues to undergo complete transition from HPS street light fixtures to LED, including decorative lighting on Route 412. This project is to replace the existing 116 High Pressure Sodium lamps with energy efficient LED fixtures on the Route 412 corridor. This change was proposed during the construction of the Route 412 project as a change order to be paid for by the Project or by the City, but PennDOT did not agree. We now own the system and have the opportunity to make the change. The City will start recouping the annual savings of 60% on our energy bill, which will offset the cost of the upgrade over the next few years. The total cost is estimated at \$150,000.00 for materials and labor. Due to the sealed design of the fixtures, the fixtures will have to be replaced.

#### 4. Decorative Street light LED Lamp Replacement

The City continues to undergo the complete transition from HPS street lighting to LED street lighting, including decorative style street lighting. This project is to replace the existing 2500 high pressure sodium lamps with energy efficient LED lamps in the decorative street lights. The City will start recouping the annual savings of 60% on our energy bill, which will offset the cost of the upgrade over the next few years. The total cost is estimated at \$200,000.00 for materials and labor.

### III. STREETS

1. **Carlton Avenue - Broadway to Summit Street**  
Remove and reconstruct curb, sidewalk, and road reconstruction due to extensive water and sewer upgrades. Remove existing and plant new street trees. Phase 1 began in 2018 and will be completed in early 2019. Phases 2 and 3 will be completed in 2019 and 2020. This project is planned in three (3) phases.
2. **New Street – Third Street to Fourth Street**  
This project is for improvements to this section of roadway in connection with a turnback to the city from Penn DOT. In exchange for the turnback, the city received payment for the repairs/improvements needed to bring the road up to acceptable condition. The work would include mill and overlay, trench and base repair, upgraded curb ramps, and new pavement markings. This work has been postponed due to ongoing construction and excavation by the ongoing development along New Street. In addition, the City received a grant to make streetscape improvements which will incorporate the upgraded ramps and paving.
3. **Public Works Engineering Costs for CDBG Eligible Street Projects**  
Design costs/fees for street reconstruction projects.
4. **West Broad Street – Mangan Street west to Old Coke Plant**  
Replace old deteriorated and missing curb and sidewalk and plant trees.
5. **Fourth Avenue – Prospect Avenue to Kichline Street**  
Replace old deteriorated curb and sidewalks. Remove and replace street trees.
6. **West Packer Avenue – Montclair to Brodhead Avenue**  
Remove and reconstruct curb, sidewalk, overlay and water service lines. Remove and plant new street trees. Water service lines and tree work budgeted separately. Road was repaved in 2011 due to heavily deteriorated conditions and hence the sidewalk work will be postponed to the later years due to that and budget constraints.
7. **West Packer Avenue – Carlton Avenue to Montclair Avenue**  
Replace curb, sidewalks, overlay, and renew water service lines. Water service lines work budgeted separately. Road was repaved in 2011 due to heavily deteriorated conditions and hence the sidewalk work will be postponed to the later years due to that and continued budget constraints.
8. **Street Overlay Program**  
Overlay various streets throughout the City in accordance with our road management program. Proper upkeep/maintenance of the City’s 260 miles plus of roadway would require well over \$2,000,000 in annual expenditures. CDBG funding includes ADA curb ramps.
9. **Streets Mack Heavy Duty Medium Dump Truck**  
This is to replace Unit #196, a 2001 Chevy dump truck, the second listed under 2022 is to replace Unit #161, a GMC dump truck, and the third listed for 2023 is to replace Unit #162, a 2010 International dump truck. All are used for plowing, pulling leaf loaders, clean up, and assist in the streets paving operation. All trucks are in poor condition and need to be replaced.
10. **Streets Leaf Loaders – ODB Extreme Vac Model SCL65TMS**  
This is a plan for the periodic replacement of our leaf loaders as needed based on their

age and condition. The current cost estimate of each loader is \$76,000. One is to replace a 2000 American loader and one to replace a 2005 Giant Vac.

11. **Caterpillar Model 930M Wheel Loader**  
This unit would replace Unit #715, a 2008 John Deere front end wheel loader that is used for loading salt into trucks during winter operations, to load fallen trees during storms, and for road construction during our paving operations. The frame on this unit is rusted and will not be able to be driven across the road during emergency operations.
12. **John Deere Model 624K Wheel Loader**  
This unit would replace Unit #723, a 2006 CAT front end wheel loader that is used for loading salt into trucks during winter operations, to load fallen trees during storms, and for road construction during our paving operations.
13. **GMC Pickup Truck**  
This is to replace Unit #173, a 2006 Ford pickup truck, and the second is listed under 2021 to replace Unit #176, a 2011 Ford pickup, both used for paving and plowing operations.
14. **Mack Heavy Duty Large Dump Truck (Tandem Axle) - \$440,000.00**  
This is to replace Unit # 170, a 2002 GMC Dump Truck in 2021 and Unit #165 in 2023, that are used for plowing, pulling leaf loaders, clean-up, and assist in the streets paving operation. These trucks are in poor condition and need to be replaced.
15. **Elgin Pelican Broom Sweeper**  
This will replace Unit #707, a 2004 Elgin street sweeper that is used to clean the City's curb lines and sweep streets prior to being paved.
16. **Kodiak Model LMSSC3036 Snow Blower for 624K Wheel Loader**  
This is an attachment snow blower for snow removal used to load snow into trucks during our snow removal operations. This would help cut down the cost on getting contractors in to remove snow and make operations more efficient in key areas.
17. **Aqua Tech B-10 Vac Truck**  
This is to replace Unit #152, a 2010 Vac-all truck that is undersized. This unit is used to clean out all storm basins throughout the City.
18. **Stewart Amos Starfire S-5 Truck Mounted Sweeper**  
This will replace Unit #717, a 1998 Elgin street sweeper that is used to clean the city's curb lines and sweep streets prior to being paved. This unit is worn out.
19. **CAT Skid Steer Loader**  
This unit is to replace a Unit 712, a 2002 Bobcat that is in poor condition used for milling operations and screening sweeper dirt.
20. **Eager Beaver 15-ton Trailer**  
This is to replace Unit #738, an Eager Beaver 10-ton trailer used for small paver and rollers.
21. **Eager Beaver 6-ton Trailers**  
These are to replace Unit #741 and Unit #746, both 2006 Imperial trailers.

22. **RAM Small Dump Truck**  
This is to replace Unit #152, a 2004 CMG that is used for cleanup and plow operations.
23. **Spray Patch Truck**  
The spray patch truck the City acquired for road maintenance (pothole repair) has proven to be a great asset and repairs made with this unit have been long lasting. One of the biggest advantages this unit affords is that it only requires one operator versus 4 with a traditional pothole repair crew. Given that we continue to struggle with not having adequate personnel to keep in-house paving going consistently, we propose to add another patch truck to our fleet.

#### IV. **STORM SEWERS**

1. **West Broad Street - 1<sup>st</sup> Ave to 2<sup>nd</sup> Ave**  
This project is for the replacement of an old section of Storm Sewer that frequently clogs requiring significant regular maintenance and backs up causing temporary shallow street flooding. Design and bidding completed in 2017 with construction in 2018. This account is carried over to 2019 to finish final restoration and final payments.
2. **West Laurel Street to the Monocacy Creek**  
This project is for a new storm sewer to connect the existing system at Moravian Hillside Townhouses, along West Laurel Street, along and across Mauch Chunk Road to the Monocacy Creek. The existing system currently discharges to the surface of West Laurel Street and frequently causes flooding by Damper Design. Moravian College has previously committed to pay for the design and 65% of construction costs. Moravian College purchased the Damper Design property in 2016 and this Storm Sewer Improvements project was completed in conjunction with the development of that property in 2018. This account is being carried to 2019 to cover final payments.
3. **Stanford Road - Storm Sewer Extension**  
This project is to extend the storm sewer along Stanford Road west of Ralston Road to drain the low street areas that have ponded water during heavy rain events. This account is being carried to 2019 to cover final payments.
4. **East Boulevard – Boyd Street to Lansdale Avenue**  
The storm sewer needs to be extended due to the flooding at the intersection of East Boulevard and Boyd Street.
5. **Old Brick Sewer on Broadway - Jischke to Third Street**  
This project is to rehabilitate or repair an old 8-foot diameter brick sewer on Broadway from Jischke Street to Third Street.
6. **Millside Drive & Traveler Avenue - Drainage Improvements**  
This project is to replace an undersized and poorly sloped storm sewer and outfall from the intersection of Millside Drive and Traveler Avenue to the Saucon Creek. This area (grass and street) frequently backs up during heavy rains.
7. **Stefko Drainage Swale**  
This project was originally designed to upgrade the existing drainage channel between Broad Street and Lehigh River to eliminate flooding at the former Bethlehem Steel Power Plant and to reclaim existing city owned property for future use. Due to changed conditions, this project has been re-evaluated to principally include a possible

culvert under Lehigh Canal and selected improvements along the swale to reduce erosion and sediment transport to the river. A Growing Greener grant was received in 2013 for design. Engineering/design was completed in 2016. We are currently seeking grant funding for the construction.

8. **W. Goepf Street – Masslich Street to New Street**

Upgrade storm water system (inlets and/or main) to address flooding along this street (south side curblin) during heavy rain (anything greater than a 6-month storm). Additional investigations will be performed to identify potential issues with the existing system and we will conduct a detailed H&H study to define the final scope of work.

9. **E. Fifth Street Storm Sewer Replacement**

This project is to replace the existing clay pipe along E. Fifth Street from Buchanan to Fillmore and along Fillmore from Fifth to Packer. The existing clay pipe was installed in the 1950s and video inspection shows the pipe is deteriorating and has holes in the invert. Considering the age of the pipe, continued deterioration is anticipated. The proposed replacement of the system will eliminate the exfiltration and prevent future damage to the road and adjacent utilities.

10. **Creek Road Culvert Replacement**

The Creek Road Culvert project is to replace the existing deteriorated culvert along Creek Road north of Friedensville Road. The culvert has been damaged by repeated flooding and the roadway is often overtopped during storms. In addition, the existing culvert is narrow, allowing only a single lane to cross. The replacement culvert will be sized to allow two lanes of traffic and reduce flooding of the road. The guiderail also needs to be upgraded to meet current safety standards. The culvert replacement project was bid in 2015 but the bids came in significantly above the available funding. We completed repairs to address the most urgent issues, including guiderail and concrete deterioration in 2015/2016, and defer the full replacement of the culvert until 2022 due to the interim improvements.

11. **Johnston Drive Swale Improvement**

Improvement of an open swale south of Johnston Drive from East Boulevard, under Shakespeare Road, to the City/Bethlehem Township line. The City has problems in maintaining this swale, which is often the subject of dumping of debris. Preliminary plans call for enclosure of this swale.

12. **Easton Avenue to Stefko Blvd Storm Sewer Upgrades (Various locations – Phase I and II)**

This project is to replace and upgrade the storm sewer from Easton Avenue, down Barbara Street, Sycamore Street, Walters Street, Minsi Trail Street, and Wallace Street, to Stefko Boulevard and Pembroke Road. The flow then discharges into the Stefko Swale and ultimately into the Lehigh River. In heavy storms there have been drainage issues along this run. Phase I would be the addition of a second pipe in the lower end of the system from Washington Avenue to Stefko Boulevard. Phase II would be collection system improvements to the system from Easton Avenue to Washington Avenue. Estimated costs are very preliminary as they are not yet based on a detailed analysis.

13. **Miscellaneous Drainage Structures**

These funds are used to make repairs to catch basins, headwalls, culverts, pipes, etc. throughout the City's extensive storm sewer system. We will also replace storm sewer at Santee Mill Road (\$12,000), and at Keim Street (\$65,000). The Santee Mill Road

project is for the replacement of a deteriorated section of pipe. The Keim Street project is to extend the storm sewer from Barbara Street to drain Keim Street.

14. **North Street Storm Sewer Replacement**

This project is for the replacement of the existing deteriorated terra cotta storm sewer along North Street between Main and Guetter Streets.

15. **Broad and Guetter Streets Storm Sewer Replacement**

This project is for the replacement of the existing deteriorated storm sewer at the intersection of Broad Street and Guetter Street. Work will also include sidewalk repair and road restoration.

16. **Stormwater Pollution and Flood Prevention**

This is for the implementation of a stormwater pollution and flood prevention plan. A fee will be implemented to property owners to fund all stormwater capital improvements, storm sewer maintenance, MS-4 program requirements, and stormwater system improvements. Projects may include stormwater pollutant reduction, which could consist of detention basin restoration and water quality improvements as well as stream bank restoration, and other BMP installations.

V. **PUBLIC WORKS - FACILITIES**

1. **Facilities Capital Improvements**

Funding is to support improvements identified by the comprehensive facilities evaluation, other previously identified improvements, and unexpected major necessary capital improvements to all City facilities. Currently identified improvements include Ice House porch and steps replacement, HVAC replacement at Ice House, DAR House Roof Replacement, and replacement of air handlers, heat exchangers, cooling towers, pumps, pneumatic controls, air filters, condensers and pumps at various facilities, exterior improvements, railings, new windows on ground floor for the Police Department, HVAC component replacements, building security upgrades, replacement of asbestos floor tiles, replacement of pavers on the plaza, and upgrade of the City Center elevators (parts are no longer available for existing elevators). In addition, funding is included for improvements/renovations at the City's Fire Houses focusing on functional concerns of the facilities and energy efficiency improvements. Work includes the installation of emergency generators at several north-side Fire Stations, replacing/upgrading heating/cooling/ventilation systems, paving, replacement of doors/windows, other facility interior/exterior improvements and renovations, and purchases for living areas. Safety concerns and code issues identified by Public Works, Safety Committee, Fire Department, and Inspections will also be addressed. Projects may include roof renovations/replacement, exhaust/air systems to improve air quality, emergency lighting, renovation/replacement of unsafe structures, purchase of special equipment as deemed necessary to handle safety/code requirements, and other unforeseen repairs/improvements to facilities/equipment to extend the life of a capital asset.

2. **Rodgers' Street Facility Replacement**

The City's Grounds Maintenance Bureau and Traffic Maintenance Bureau both work out of the facility at Rodgers and Lewis Streets. This is a former Naval Reserve Center built in 1950 and is in poor condition and not suitable or cost effective for the current use. The structure will be demolished and replaced with a new pole barn structure better suited to the City's operations and needs. Funding is to cover design and construction.

3. **City Emergency Services Facility**

This project is the construction of a pole building which would be attached to BFD Company #5 on Easton Avenue. This building would be a storage area for Police, Fire, EMS, Emergency Management supplies, equipment and vehicles. The building would be an “emergency service facility” that would be utilized by all City Emergency Services. Currently, these vehicles are spread all over the City, indoor and outdoor at all times of the year. Having these vehicles in one central location, in a secure indoor facility is instrumental on the wear and tear of the technical equipment in them and also on the life duration of each unit. Attaching the pole building next to a fire station enables a 24 hour security presence. The building would also include an elevated area which would be a joint Fire, Police, EMS and EM training area. This would be a simple classroom style room with two small offices for Fire and Police Specialized Units, i.e.: ERT and EOD Units. With the construction of this building, the City’s Emergency Services; Police, Fire, EMS and EM, would be able to consolidate, secure and protect the specialized equipment they utilize in the City. Several vehicles have to stay plugged into a power source when not in use. Currently, some are outside in the weather attached to a power source by extension cords (EX: BPD Command Center, plugged in outside City Garage). With the amount of festivals, races, minor and major events, Casino events and shows, that bring over a million or more people to this City each year, this update of this emergency safety facility building is a needed project in the long term response and protection of the City from a man-made or natural emergency or event.

4. **City Center Improvements**

Funding to support already identified and unexpected major necessary capital improvements to the City Center over the 2-year bond issue. Currently identified improvements include exterior improvements to sidewalks and steps, railings, landscaping, new windows on ground floor for the Police Department, HVAC component replacements, building security upgrades, replacement of asbestos floor tiles, and replacement of pavers on the plaza. This account will be combined with and funded through the Facilities Capital Improvement Plan in the future. It is included in 2019 to account for existing carryover funds remaining.

5. **Fan Coil Replacements**

This project is to finish the replacement of fan coil units on the second and third floors of the Public Safety Building. The fan coils in the Administration Building and parts of the Public Safety Building were completed previously. This will complete the upgrades for the City Hall Complex.

6. **Chiller Replacement**

City Hall is served by two 230 ton chillers. The chillers utilize R-22 refrigerant and were installed in 1998. R-22 is being phased out and will not be available in the future. Both chillers have needed repairs in the recent past and chiller #2 had a re-gasketing and refrigerant fill in 2017 due to leakage. Chiller #1 will be replaced with a quieter, more energy efficient chiller that uses environmentally friendly refrigerant.

7. **City Hall Plaza Drainage Pipe Replacement**

The drain pipes for the plaza run through the garage and are galvanized steel. The pipes are corroding, frequently clog, and gather calcium deposits which causes backups in the plaza drains and likely contributes to or causes the existing leaks in the facility. The piping is jetted annually, but the problems persist. The drain piping in the garage will be replaced with larger diameter PVC pipe which will not collect the calcium

deposits as readily as the galvanized steel. In addition, some of the existing piping has asbestos insulation that will be abated.

8. **Superior Boiler Replacement**

City Hall was originally served by two Superior Boilers. A Lochinvar Boiler was installed in 2013. Superior Boiler #2 no longer functions and Superior Boiler #1 is original to the building as well and has exceeded its useful life. If Boiler #1 breaks down there will be no back up. The new boiler, to replace boiler #2, will be a new gas fired boiler similar to the Lochinvar.

9. **Police Forensics and DUI Area Heat Pump System**

The Forensics and DUI Center located in the basement are not connected to the central air handling system. Temporary units were installed in the past and are inadequate and have exceeded their useful life. A heat pump system will be added to address these areas.

10. **Library Exterior Column Repair**

The 38 steel columns around the perimeter of the Library are corroded at the bases. Several columns had repairs made in the recent past, but the repairs are beginning to corrode. The concrete slab will be removed below the columns down to the beam and new piers will be built to support the steel column base. This project will be completed in phases to address the repairs in order of need. Some repairs (4-5 columns) should be done as soon as possible (2018) and funding from City Center Improvements will be utilized.

11. **City Hall Garage Structural Concrete Repair**

The concrete beam in the garage below the front of the Library Entrance is spalling and rebar is exposed and corroding. This beam carries much of the load from the front façade of the Library. Temporary shoring will be necessary to support the beam while the deteriorated concrete is removed. Corroded reinforcing steel will be repaired and the repair material will be dowelled into the existing concrete.

12. **City Hall Garage Floor Repair**

The floor in the City Hall Garage has deteriorated over the years due to deicing salts, studded tires and other impacts. This has caused significant spalling of the concrete resulting in various degrees of roughness and tripping hazards. This will be a phased project to address the deterioration, beginning with the worst areas.

13. **Domestic Water Tank Replacements**

This project is for the replacement of two large domestic water tanks with hot water heat exchangers. These tanks are original to the City Hall Complex and are insulated with asbestos. The circulating pumps, controls, and heat exchangers are all beyond their expected life and in need of replacement. The asbestos will be abated and the tanks replaced with smaller, gas fired, condensing water heaters.

14. **Fire House Improvements**

Improvements/renovations to interior/exterior of the City's Fire Houses as identified during the course of the 2-year bond issue focusing on functional concerns of the facilities and energy efficiency improvements. Work already identified/known includes the installation of emergency generators at several north-side Fire Stations, replacing/upgrading heating/cooling/ventilation systems, paving, replacement of doors/windows, other facility interior/exterior improvements and renovations, and purchases for living areas. This account will be combined with and funded through the Facilities Capital Improvement Plan in the future. It is included in 2019 to account for

existing carryover funds remaining.

15. **Roof/Safety and Code Requirements**  
Address safety concerns and code issues as identified by Public Works, Safety Committee, Fire Department, and Inspections. Projects for city-owned facilities may include roof renovations/replacement, exhaust/air systems to improve air quality, emergency lighting, renovation/replacement of unsafe structures, purchase of special equipment as deemed necessary to handle safety/code requirements, and other unforeseen repairs/improvements to facilities/equipment to extend the life of a capital asset. This account will be combined with and funded through the Facilities Capital Improvement Plan in the future. It is included in 2019 to account for existing carryover funds remaining.
16. **Mechanical System Upgrades**  
Continue updating of mechanical systems to improve reliability and energy efficiency of systems/facilities not covered under the Energy Savings Performance Contract. Critical initiatives include replacement of fan coil units in Building A and connecting to new energy management system and phase in the upgrade of the City Center elevators (parts are no longer available for existing elevators). Other projects may include replace HVAC, refurbish/modernize chillers, air handlers, heat exchangers, cooling towers, pumps, boilers, pneumatic controls, air filters, condenser/water pumps/motors at City-owned facilities. This account will be combined with and funded through the Facilities Capital Improvement Plan in the future. It is included in 2019 to account for existing carryover funds remaining.
17. **Administration Building Second Floor Window Replacement**  
The fixed windows on the second floor are older and have deteriorated glazing putty and fogged panes. Minor corrosion is evident on both the interior and exterior of the frames. The majority of the windows in the building have been recently replaced.
18. **Underground Storage Tank Closures**  
The Serenity Garden at the City Hall Complex contains two 10,000 gallon, single wall, heating oil tanks. The tanks provide oil to Superior Boiler #1, the diesel emergency generator and the diesel fire pump. The amount of fuel used is reduced since natural gas is now used as the primary heating fuel. The tanks are oversized and should be removed prior their developing leaks.
19. **Floor Tile Replacement**  
Much of the flooring in the City Center is original 9"x9" resilient tile with a low-percentage asbestos mastic. The City has been remediating the ACM on an as-needed basis with renovations. The flooring in some of the Police areas is chipped and damaged and entire sections are missing, exposing the subfloor. Some finish flooring has already been replaced with VCT or is finished concrete.

## **VI. PUBLIC WORKS - GROUNDS**

1. **Grounds Capital Improvements**  
Funding in this item is to cover smaller capital project needs already identified such as improvements and renovations to athletic fields (grading, aerating, topsoil, and backstops), tennis court resurfacing, landscaping, tree removal/replacements, playground equipment, fencing, lighting, signage, parking lot improvements, sidewalk replacements, pathway improvements, pavilion improvements, parks buildings, and equipment.

2. **Greenway/Saucon Park Ball Fields Connection**  
This project provides for an extension of the Greenway to the ball fields at the north end of Saucon Park off of Millside Drive, along with storm water improvements. Design was completed in 2016 and permitting was completed in 2018. Construction began in 2018 and will be completed in 2019.
3. **Vehicles/Equipment - Acquisition/Replacement**  
Purchase of a 16-cubic yard rear load garbage /packer truck to replace Unit #095, a 2011 garbage truck which is nearing 100,000 miles.
4. **Mack Heavy Duty Medium Dump Truck (Single Axle)**  
These will be additions to the Grounds Maintenance Bureau fleet. One unit is listed under 2019 and the other under 2023. Both units will be equipped with a plow package and salt spreader for snow operations, pulling leaf loaders, hauling materials, and hauling the City bandwagon.
5. **Greenway – Plaza Development**  
Grant funds were received for two additional plaza areas along the greenway. One will be an active area for children located behind Holy Infancy School and Boys & Girls Club. The other will be a Memorial Plaza located at the southern end of Founder’s Way.

## **VII. OTHER PROJECTS**

1. **W Broad Street Lighting-3<sup>rd</sup> Ave to 5<sup>th</sup> Ave**  
A Multimodal Transportation Fund Grant was applied for and received for this work. This project is for the installation of decorative street lights along West Broad Street from 3<sup>rd</sup> Avenue to 5<sup>th</sup> Avenue (application was for 3<sup>rd</sup> Avenue to 8<sup>th</sup> Avenue, but award of grant was not in full and project was scaled back). This is a continuation of previous work from 1<sup>st</sup> Avenue to 3<sup>rd</sup> Avenue completed as a part of the Elm Street Program. Design was completed in 2017. Construction is anticipated to be complete in spring 2019.
2. **Bridge Repairs**  
The project is for repair of nine (9) bridges the City is responsible for maintaining. Two of our bridges are going through the design process to be repaired in the near future (South Main Street and Main Street Ramp). The City most recently completed repair and replacement work on Lynn Avenue, High Street, and Fire Lane in 2017 and early 2018. Several of the remaining bridges are in need of significant repairs. The City be repaired in the near future (Lynn Avenue and High Street). All but one of the remaining bridges is in need of significant repairs. The City receives regular inspection reports through the National Bridge Inspection System (NBIS). These reports detail needed repairs including concrete repair, deck overlay, deck and bearing rehabilitation and painting. The Public Works Department annually completes repairs that are within our expertise utilizing in-house forces. Much of the more complex work requires specialized bridge contractors. In addition, the NBIS inspections sometimes result in “Priority 1” repairs which must be addressed within a few months. Failure to make these repairs may result in further deterioration and greater future costs, as well as possible closures in extreme instances. Repairs to 8<sup>th</sup> Avenue over NS RR and other improvements are anticipated in the near future.

3. **Route 378 Lighting Replacement (Phase 1 & 2)**

The scope of this project has been significantly reduced based on a design to only light the on and off ramps. Tests have been conducted starting in late 2015 by turning off the lights that are not located at the ramps. The results were found to be acceptable. Further evaluation and design will be conducted to finalize the plan to remove the unnecessary poles, replace the ramp poles and the underground electrical in a phased approach at a reduced cost to both the city and the state. There are currently 218 light poles along Route 378 and the light poles and electrical system conduits were installed in the early 1960s and have outlasted their expected lifespan. This replacement will be done in two phases. Phase 1 is to replace damaged light poles and break-a-way bases and remove unnecessary light poles. 107 light poles are anticipated to remain in service upon completion. Phase 1 will be funded and completed in 2019. Phase 2 is the replacement of the underground electrical system. Phase 2 will be completed in 2020. Some of the pole structures are rusted and the metal has deteriorated at the bases from years of weather and salt causing them to become structurally unsound. All of the underground electrical system in PA 378 from the Hill to Hill Bridge to the PA 22 interchange including all of the ramps and overpasses is failing. There are 338 light poles on PA Route 378. The City owns the light poles and equally shares the maintenance and replacement costs with the State. We are requesting this project be placed on the TIP for federal/state funding. The revised project cost estimate is very preliminary, including pole replacements and underground electrical system upgrades, and will be refined during final design. The City has requested Penn DOT place this project on the TIP. We are currently working out the timing for this funding.

4. **Geographic Information System**

This project is the development of a Geographic Information System (GIS) for the City. The GIS will include City infrastructure and comprehensive data that will enable all departments to use it for analysis, monitoring of performance and work flow improvements. Next phase will include updating the server and viewer software, development of certificate of occupancy addressing, continue development of the storm sewer and water systems networks, base map maintenance, integration with the SunGard Software, tools, training, and various workflow applications. Additional tasks for future phases are being considered. Currently, GIS data is being migrated to the local government model. Once complete, updates to the storm sewer layer can be completed.

5. **Citywide Wayfinding Signage**

A comprehensive effort to install a network of wayfinding signage is underway in both downtown areas and at several gateway entrances to the City. This project brands Bethlehem and provides improved wayfinding for tourists and visitors. Phase I was completed in early 2017 and design is being completed on Phase II and III. Additional funds have been acquired from grants and donations to complete the final phases. Installation will be completed in 2019. Operating costs will be affected long term, but the signs are designed with durability and efficient maintenance in mind.

6. **Aerial Bucket Trucks for Electrical Bureau**

In 2014 we began phasing in the replacement of the Electrical Bureau's four (4) 42-foot bucket trucks (estimated cost of \$140,000-\$160,000 per truck), which have exceeded their 10-year recommended replacement intervals. These vehicles are used daily and are developing signs of failure, stress, and increased maintenance costs. Due to safety and reliability concerns, these vehicles need to be replaced at a much higher frequency compared to most fleet vehicles. The final truck will be replaced in 2019.

7. **Service Truck-Mechanical Bureau (New)**

The Mechanical Bureau is requesting a replacement service truck. Currently the truck that is called a “service truck” is a 2000 Chevy pick-up truck with a fuel tank in the bed. It has no air compressor and there are no provisions for tools. Equipment items transported must be placed on the seat or behind the seat and must be transferred in and out as needed. This is time consuming and inefficient, especially for emergency call-outs. The Mechanical Bureau must perform maintenance and repair work on vehicles and equipment at various facilities and locations around the city as well as emergency repairs and refueling on the road. Ideally, to perform these tasks in an efficient, timely manner a service truck, designed and equipped with the proper tools and materials, is needed. This truck would be on a heavy-duty pick-up chassis with a mechanic service body. This body will incorporate cabinets and drawers for gas cans, jacks, tools, fluids, consumable aerosols and other items needed for on-site repairs. It would be equipped with an auxiliary fuel tank and pump for refueling pavers and heavy equipment at construction sites and fire apparatus at fire scenes and refilling several small refueling sites at bureaus around the city. It would also be equipped with a heavy-duty air compressor for repairing tires on the road and for running multiple air tools including impact guns to remove lugs on large rims. It includes a lift gate to help transport large tires, oil drums and other heavy parts and is four-wheel drive for all weather use. A municipality responsible for maintaining a public works and emergency services fleet as large as ours must provide a professional, competent support structure and purchasing this unit is an important step in the continued revamping of the Mechanical Bureau.

8. **Mechanical Bureau-Replacement of Garage Doors**

The overhead doors, openers, and tracks at the Mechanical Bureau are all original equipment installed at the facility in 1978. Being 40 years old, parts have become obsolete and have to be custom made. This causes extended down time with loss of use in whatever bay is affected.

9. **Flood Control System**

The City inherited the responsibility for maintaining the Flood Control dike, buildings, the electrical system, pumps and motors at the Flood Control Station on the South Side on the Lehigh River from Bethlehem Steel. This account is to provide for capital expenditures for maintenance of this system. As a result of mounting needs (replacement of transformers and possibly pumps) and historical use of the pump house component of the station, the City re-evaluated the need for this component and recommended de-commissioning to the Corp of Engineers. In 2009 the Corp of Engineers and FEMA agreed that the pump component is not providing additional flood protection. Nevertheless, a re-delineation of the 100-year floodplain since abandoning the pumps is a change to the Flood Control System. The re-delineation results in minor additional shallow flooding areas, all within the former Bethlehem Steel plant, due primarily to storm sewer system capacity limitation, which exists regardless of the status of the pump stations. Although we are confident the pumping component of the Flood Control Station is no longer needed, this line item budgets for upgraded design and replacement in the event the City desires to restore the pump component of the system and restore the system to acceptable status under USACE regulations. Funds may be used for repairs to the remaining system and, in the event the pumps are permanently abandoned, funds may be used to abandon parts of the system.

10. **Public Safety Trunking System Radios**

The XTS 5000 portable radios used by EMS, Police, and Fire are 11 years old, will no longer be manufactured, and will not be supported past 2018. There is currently only

limited factory support and limited replacement parts. These portable radios have passed their (10) year recommended serviceability for first responders and public safety officers. Fire will require 32 radios, EMS will require 35 radios and Police will require 180 radios. This project is to replace all the radios and the new radios acquired will be equipped as to be able to function on any system in anticipation of the mandated consolidation of 911. The acquisition will be phased and radios taken out of service in 2019 will be “cannibalized” until the rest of the radios are acquired in 2021. Public Works, Water/Sewer, and other departments’ radios required for operations and communications with the 911 Center have been and will continue to be replaced gradually as they are no longer supported, via operating budgets, and they cost substantially less than those for public safety.

**11. Artificial 40 foot Christmas Tree**

The City currently advertises and actually drives every street in the City each year looking for the two large 40 foot Christmas trees for the City display efforts. The pool of large accessible trees has dried up and we are struggling to find suitable trees. In the next year or two there will be no large trees in the City that will work for this annual event. The quality and realistic look of pre-lit and decorated large artificial trees have made huge improvements. The cost of a 40 foot tree with LED lights and decorations is approximately \$90,000.00. The life expectancy of this high quality artificial tree is 20 years. The installation and removal of the artificial tree will not require a crane or police escort to get it to city hall because of the modular design.

**VIII. RECREATION**

**1. General Pool Improvements**

Improvements/renovations will be allocated to pools, bathhouses, filter systems and related buildings based on analysis of the Park and Pool Study of 2017. Other unforeseen repairs/improvements to facilities/equipment to extend the life of a capital asset.

**2. Municipal Ice Rink**

Improvements/emergency repairs/ purchases of equipment as needed for operations and capital upgrades to extend the life of a capital asset. 2019 – upgrade of computer and technical maintenance system. Need to address the ventilation and condensation problems. Future plan to include purchase of a new Zamboni.

**3. Memorial Pool Complex Improvements**

The City completed a Master Plan and Feasibility Study for the substantial upgrade and improvement of this pool complex. A contract has been awarded to URDC for design of the improvements, preparation of plans and specifications, permitting, bidding and construction phase services for the new Memorial Pool Complex. New facilities include three pools, a renovated bathhouse, and related site work. Construction is anticipated to be complete in time for the 2020 pool season. The city has been awarded a grant from DCED in the amount of \$280,000. A \$1 million grant request with DCNR is pending. The remainder of the funding will be local funds and the City continues to look for other supporting grant funds.

**4. Neighborhood Pool Conversion**

The Parks System Master Plan outlines recommendations for future park improvements including all of the City pools. The pool conversion program will only be initiated following the completion of the Parks System Master Plan and will implement the Plan recommendations for all of the City pools.

5. **Parks System Master Plan**

As a follow-up to the recently completed inventory of all parks facilities, the Recreation Bureau is initiating a Parks System Master Plan. The Plan will review the entire parks system including usage and need and will provide specific recommendations for future park renovation, development and investment.

IX. **ADMINISTRATION**

1. **IT Improvement Projects – 2019-2023**

**Virtual Cloud Hardware Upgrade/Replacement**                      **\$ 40,000**

With so much being expected of our virtual environment it is wise to replace our hardware about every 5-7 years in order to take advantage of newer faster technology improvements.

**SunGard Business License Application**                                      **\$ 60,000**

We currently track our City Business Licenses using a work-around in the software which is one way to track them but not the correct way. Purchasing this application will give us the ability to process the license applications, integrate with the General Ledger process as well as the common Entity database and manage the inspections related to the license.

X. **COMMUNITY & ECONOMIC DEVELOPMENT**

1. **Blighted Building Acquisition Funds**

There are currently 30 properties certified as blighted within the City of Bethlehem. In the past year the city has made strides in setting up a uniform process that moves blighted structures toward eminent domain using an RFP issued to qualified developers. Since the implementation of that process the city has acquired 1 residential property using capital funds and has additional 12 properties have been targeted for acquisition. Of those properties it is anticipated that 5 will be acquired by February of 2019 and the remaining properties will be acquired by July – September of 2019. It is anticipated that by the September of 2019 the full \$350,000 will have been utilized for the acquisition of blighted properties.