City of Washington, Illinois

Capital Improvement Plan

Years 2020 to 2025

Prepared by CMT Engineers and Consultants

4/29/2020

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1.0 INTRODUCTION

The City of Washington leadership met on November 2, 2019 for a strategic planning and goal setting work session. The work session resulted in thirty-five new initiatives intended to move the community forward. A survey of the community held over fourteen days generated 836 responses about the new initiatives. The survey results were reviewed and discussed at the Washington City Council November 18, 2019 meeting. The Council approved the following six goals:

1. Complete a new Comprehensive Plan
2. Consider adopting an Economic Development Strategic Plan
3. Adopt a Capital Improvement Plan
4. Create a Master Development Plan for the W223 property
5. Review and revise city council and staff roles, responsibilities, and organizational structure
6. Evaluate budget to maximize funding for capital improvements

Washington's City Administrator immediately took steps to address some of these goals. On December 9, 2019, the Administrator recommended the City Council select a consultant in the month of December to create a Capital Improvement Plan to address goal number 3. At the same meeting, the Administrator presented a staff reorganization plan for the Public Works Department in response to goal number 5.

The City Council authorized the City Administrator on December 16, 2019 to contract with Crawford, Murphy & Tilly, Inc. (CMT) to prepare the Capital Improvement Plan (CIP). CMT's contract specifies the CIP will include recommendations for:

1. Capital improvement projects for 2020 and associated project budgets.
2. Recommend means, methods and costs to collect additional facility data needed to make better decisions in future years.
3. Provide recommendations for a risk-based assessment management system that will prioritize capital investments in future years
4. Identify capital improvement projects for years 2021-2024
5. Identify long-term goals for facility needs and revenue constraints

1.1 WHAT IS A CAPITAL IMPROVEMENT?

The term capital is used to describe wealth in the form of assets. Assets are property and tangible things of value. The financial industry refers to assets in terms of their financial value. The public works domain uses the term asset in reference to equipment, facilities and infrastructure systems such as street and utility networks. A municipality financial position is reported each year in a Comprehensive Annual Financial Report (CAFR) prepared by Certified Public Accountants in compliance with the Government Accounting Standards Board (GASB). The CAFR itemizes municipal expenditures, revenues and asset valuations.

All equipment, facilities and infrastructure require maintenance, repairs, improvement, and eventual replacement. In order to clarify what is considered a capital improvement, we refer to guidance published by the U.S. Internal Revenue Service that went into effect on January 1, 2012. The IRS General Principle of Capitalization indicates a capital improvement is:

1. Fixing a defect or design flaw (*fix*)

2. Creating an addition, physical enlargement or expansion (*expand*)
3. Creating an increase in capacity, productivity or efficiency (*expand*)
4. Rebuilding property after the end of its economic useful life (*rebuild*)
5. Replacing a major component or structural part of the property (*replace*)
6. Adapting property to a new or different use (*repurpose*)

This CIP will address improvements to municipal assets in accordance with the above guidelines. The words in parenthesis following the above six guidelines will be used in this CIP to describe the type of capital improvement. Any other activity is considered maintenance and/or repair work.

We provide this clarification about improvements versus maintenance/repair relative to capital investments in municipal infrastructure because we find these terms are rarely defined in a CIP or municipal budget and are misunderstood by many people in the public works industry. Many times, the terms capital budgets and operations budgets are used to describe who is performing the service. Municipal employees typically perform maintenance and repair work while capital improvements are typically done by contractors. However, in many cases municipal employees also perform capital improvements and contractors perform maintenance and repair services. Therefore, we need to be careful to use the terms "capital improvement" and "maintenance/repair" with respect to what is being done regardless of who is doing the work.

This CIP will deal with assets that need to be fixed, expanded, rebuilt, replaced or repurposed.

1.2 What is the Plan Timeline?

Washington's initial request was a 20-year timeline for the CIP. However, the contract negotiated with CMT specifies a 5-year Capital Improvement Plan. CMT will include discussion about long term considerations beyond the initial 5-year period and present guidelines and suggestions for future capital planning efforts.

1.3 How are Priorities Determined?

Municipal leaders typically find themselves with a seemingly endless list of projects to repair and replace aging infrastructure. The problem faced by municipal leaders isn't a lack of information; the problem is prioritizing investments across a diverse range of equipment, facilities and infrastructure systems. In fact, many municipalities have excellent historical records that have been moved to a geographic information system (GIS) to manage information about asset locations, characteristics, condition, and history. GIS systems are the foundation of asset management systems. Asset management is a systematic process of maintaining and preserving assets (equipment, facilities and infrastructure systems) such that they serve their intended purpose in the most cost-effective manner.

Typical asset management systems are very useful in the process of maintaining assets over their life cycle. A comprehensive asset management program provides an effective means of tracking and reporting who, what, why, when and where maintenance work was performed. The challenge faced by public works leadership is deciding when an asset has reached the end of its economic useful life and how does that project compare to other capital project needs. Establishing priorities for rebuilding, replacing and expanding the municipal assets is the critical component of a successful capital improvement plan.

CMT is working with municipal clients to create systems based on the principles of risk management as an enterprise-wide approach to establish priorities for the allocation of resources to ensure organizational success. The International Standards Organization (ISO) defines risk as the effect of uncertainty on objectives. CMT is developing a process to use available asset information to compute Risk Factors for asset elements based on the likelihood of an asset failing and the consequence should the failure occur. This CIP will include recommendations to gather additional information about asset locations, condition and history. This type of information can be used to establish Likelihood of Failure and Consequence of Failure values that can then be used to compute a Risk Factor. Some of this information is currently available but, it is beyond the scope of this CIP to implement a comprehensive risk management system. However, using available information from the City's GIS database, risk factors have been computed for pavements and will be reported and used a factor in establishing priorities for pavement improvements. Within this report, Levels of Service Indicators is a term used to assess the condition and the importance of water and sewer system infrastructure.

1.4 Current Revenues and Expenditures

The City of Washington 2020/2021 Budget provides detailed information about the City's forecasted revenues and expenses for the Fiscal Year of May 1, 2020 to April 30, 2021. The City begins the fiscal year with a General Fund cash balance of $11,414,946. The General Fund balance is forecasted to be $8,576,874 on April 30, 2021. Washington's fund balance is far above the City's policy (25% of revenues) minimum balance of $2,762,350. In addition to the General Fund ledger, Washington has several proprietary, or enterprise, funds. The water and sewer funds are proprietary funds that are used to pay expenses directly related to the drinking water and sanitary sewer systems. The city also receives other revenues that are dedicated to the operation, maintenance, repair and replacement infrastructure systems. The following table lists the budgeted 20/21 infrastructure revenue sources:

Revenue Source	*Revenue*
Home Rule for Infrastructure	$900,000
State Motor Fuel Tax (MFT)	$638,000
Streets, Sidewalks & Bridges	$253,500
Water Funds	$2,692,550
Sewer Funds	$2,910,776
Annual Infrastructure Revenue	**$7,394,826**
Safe Routes to School Grant	$400,000
FEMA Grant	$412,500
TIF District	$545,000
Total 20/21 Infrastructure Revenue	**$8,752,326**

Table 1.4.1

The 2020/2021 Budget itemizes capital improvement spending for a variety of municipal assets. The total capital improvement expenditure budgets for 2020/2021 is $9,961,190. The following table itemizes those expenditures by the asset type.

Asset Type	*Expenditure*	*% of Total*
Streets & MFT	$3,873,750	38.9

Asset Type	*Expenditure*	*% of Total*
Stormwater	$1,613,490	16.2
Water	$1,697,750	17.0
Sewer	$1,269,500	12.7
Trails & Sidewalks	$605,000	6.1
Equipment	$300,200	3.0
Buildings/Property	$331,000	3.3
Legal Services	$22,500	0.2
Misc. TIF Projects	$248,000	2.5
Total 20/21 Capital Budget	**$9,961,190**	100

Table 1.4.2

The MFT, water and sewer funds maintain positive cash balances from year to year. The water and sewer funds are proprietary funds and are not supported by any other revenues. However, the streets, stormwater, and trails funds are typically supported by transfers from General Fund Reserve. The 2020/2021 budget allocates $3,025,240 of the General Fund Reserves to underwrite the Capital Improvement Plan. The fund balances of the MFT, water, and sewer funds remain very high with respect to the annual expenditures. The following table itemizes the expected fund balances as of April 30, 2021.

Fund	*4/30/21 Balance*
State Motor Fuel Tax (MFT)	$1,581,135
Water Funds	$2,104,162
Sewer Funds	$7,525,314
Total Fund Balance	**$11,210,611**

Table 1.4.3

The 20/21 capital improvement expenditures are spread across a wide variety of projects. The largest single project, by far, is the reconstruction of North Lawndale from Jefferson Street to the TP&W Railroad; a total length of 1,600 feet. The N. Lawndale budget of $2,777,980 is 28% of the 20/21 Capital Improvement Plan. The project includes replacement of pavement, curb & gutter, sidewalk, storm sewers, water and sewer mains, and lateral water and sewer connections to homes. The second largest project is West Holland between Market Street and Main Street; a length of 560 feet. The W. Holland improvements are the same type of project as N. Lawndale. The total budget for W. Holland improvements is $864,160 which amounts to 9% of the 20/21 Capital Improvement Plan. These projects have been described as complete street projects because all the public infrastructure in these streets are being replaced. These projects are within the Southeast Planning Area (the oldest portion of the city) that was prioritized in recent years for water and sewer main improvements. The following table itemizes the N. Lawndale and W. Holland costs by fund.

Fund	*N. Lawndale Project Cost*	*W. Holland Project Cost*
Streets	$1,049,250	$342,000
Stormwater	$611,330	$236,160
Water	$483,900	$126,000

Fund	*N. Lawndale Project Cost*	*W. Holland Project Cost*
Sewer	$633,500	$160,000
Project Cost	**$2,777,980**	**$864,160**
Improvement Length (ft)	1,600	560
Cost per Foot	**$1,736**	**$1,543**

Table 1.4.4

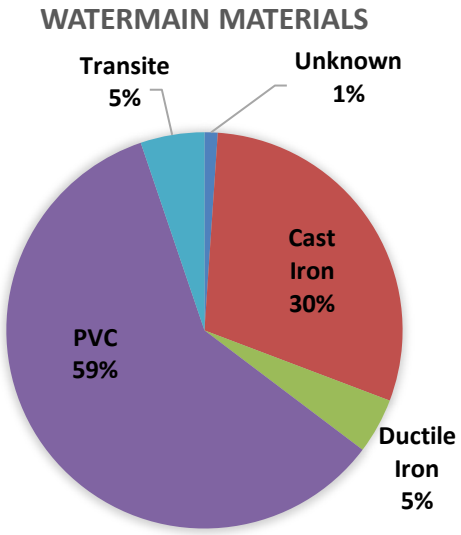
The cost of Washington's complete street program in the 20/21 budget is 36.6% of the Capital Improvement Plan. Future year capital improvement planning will consider repair and replacement options with respect to the available revenue sources for infrastructure. The following sections of this report will review the available information about the existing systems and provide improvement recommendations based on the respective needs of each asset element. Recommendations will also identify information needs for each asset element that will allow for better decision making based on asset condition and significance.

2.0 POTABLE WATER SYSTEM

The reliable operational of the potable water treatment and distribution system is critical to the public health and safety of the community. A combination of regular inspection, maintenance, and rehabilitation planning can ensure that this public infrastructure provides the proper LOS while maintaining cost effective life cycles. The capital improvement planning reviewed the potable water system assets and developed recommendations for major maintenance/replacement expenditures, additional inspection requirements, engineering studies, and data collection needs.

The potable water system consists of:

- Water Treatment Plant No. 1 and No. 2
- Water Tower No. 1 and No. 2
- 3 Pressure Reducing Valve Systems
- 85 miles of Watermains ranging int size from 4 to 16 inches
- 1,315 valves
- 672 fire hydrants
- 5400 water accounts



Over the past five years, the City has increased their focus on the existing potable water system. This focus has included:

- Automatic Meter Read Project
- Development of a Hydraulic Model for the Distribution System
- Water Treatment Evaluation Planning Report
- Backup Generator at Water Treatment Plant No. 1
- Water Treatment Plant No. 2017 Improvement Project (Replacement of existing Brine Tank and construction of a Fluoride Room).
- Development of an extended period simulation for the Distribution System (as a part of Water Tower #3)
- 1-Softener and 1-Filter Media Replacement at Water Treatment Plant No. 1
- Water Tower #1 Coating (to be completed in early 2020)

The City currently uses several software systems to document, organize, and track information related to the potable water system. ArcGIS is utilized to maintain standard naming and nomenclature for the watermains and associated distribution system items (fire hydrants, valves and curb stops). The operational data and maintenance data for the water treatment plant is captured using excel spreadsheets and some maintenance/repair data is not currently being recorded.

2.1 LEVEL OF SERVICE INDICATORS

LOS of the existing equipment within the water treatment plant is based on age and performance. The City staff is constantly assessing the performance of the equipment within the water treatment plant through

their daily readings. These daily readings can be combined with the age of equipment to identify and plan for major repairs/maintenance. The Water Towers are inspected every 5 years by a specialty contractor. These inspections identify needed maintenance for the towers and can be used to maintain an acceptable LOS. Watermain pipe material and age have a significant impact on the LOS of a watermain. Break history and complaint history can also be used to develop a complete understanding of a watermain LOS and help prioritize any needed replacements.

Developing and capturing the information noted above will be critical in the future to allow the City to leverage this data to make informed decisions on needed repairs/replacements and the associated risks for delaying repairs/replacements.

2.2 OPERATION AND MAINTENANCE

Regular maintenance on these assets are essential to maximizing the life of the asset and maintaining an acceptable LOS. The City regularly performs maintenance and operates existing assets though out the system. There are however some assets that will require additional maintenance and inspection in the future.

2.3 FINANCIAL CAPACITY

The City completed a rate study in 2019 and enacted a scheduled rate increases through FY 2024. The rate increase is expected to provide new funds for water system capital improvements at a level of $500,000 for FY 2020-2021, $600,000 for FY 2021-2022, $700,000 for FY 2022-2023, and $800,000 for FY 2023-2024. The City was also able to build the Water Fund above the minimum balance and could spend these reserves to fund capital projects. Finally, the City has funds in the Water Subdivision Development Fee and Water Connection Fee that could be used from capital projects that meet the fund requirements.

2.4 RECOMMENDATIONS

FY 2020 – 2021 ($1,874,050)

- North Lawndale Drive Watermain Replacement ($483,900) – Watermain replace associated with the complete street project.
- West Holland Street Watermain Replacement ($126,000) – Watermain replace associated with the complete street project.
- Water Tower #1 Re-coating ($590,350) – Maintenance, painting, and engineering for water tower #1 as recommended by the tower inspection.
- Valve exercise Program ($82,000) – The IEPA inspection issued a recommendation to locate and operate each valve every 12 months.
- Water Tower No. 3 Design ($70,000) – The City has currently exceeded the IEPA recommended design standards for available storage within the distribution system. The engineering effort will review the impacts of adding additional storage to the system, while completing the design of a 3rd water tower on the north side of the City.
- Water Treatment Plant No. 1 Filter & Softener Rehabilitation ($350,000) – The Water Treatment Evaluation Planning Report indicated that the media in the softener and filters

needed to be replaced because they were more than 20 years old. The IEPA inspection indicated that the filters often fail to meet secondary drinking water standards.

- Water Quality Study ($85,000) – The water treatment plants use different disinfection methods. The combination of these methods at the pressure zone boundaries can produce chlorine residual issues and potential taste and order complaints. In addition, IEPA implemented regulations in July 2019 that increased the minimum required chlorine residual within a distribution system and requires the City to develop a "Nitrification Action Plan". To address these questions and requirements, we recommend a water quality study to determine the necessary improvements and maintenance to meet the IEPA regulations and provide safe levels of disinfection within the water distribution system.
- Water Treatment Equipment Inventory (City Staff) – Development of a complete inventory of equipment list for both water treatment plants. The inventory should include all equipment data (horsepower, voltage, serial number etc.) and be used to document maintenance, repair, and replacement. This information will be critical in developing an equipment replacement schedule for the treatment plants. The replacement schedule will attempt to plan for critical equipment replacement prior to failure.
- Water Complaint Documentation (City Staff) – The City should develop a system to document water quality complaints, water leaks, and watermain breaks in the City's GIS system. This data will be critical in assessing improvement needs and will be utilized to prioritize replacements and identifying system needs.
- Misc. Capital Items included in the budget ($86,800)

FY 2021 – 2022 ($675,000)

- Southeast Planning Area Watermain Study ($30,000) – Cast iron and transite watermain continue to be the primary source of watermain breaks and leaks. Most of the cast iron and transite watermain is in the southeast portion of the City, along with some of the lowest fire flows. The goal of the planning study would be to develop a phased approach to the replacement and upgrade of the water system and the improvement of the fire flows in this area.
- WTP #2 Brine Tank Clearwell Project ($75,000) – Water Treatment Plant No. 2 has seen numerous brine pump failures over the past 5 years. The brine pump failures are due to the dirt/debris that is in the brine pit that is pulled into the pumps. The installation of a stilling well between the brine tank and the brine pump (similar to Water Treatment Plant No. 1) will allow the City to limit brine pump failures and improvement the reliability of the system.
- Cumming's Lane Watermain Improvement Project ($400,000) – A 12-Inch watermain needs to be installed along Cummings Lane from Constitution Street to the Barry Business Center. The watermain improvement is required to provide the transfer capacity from Water Treatment Plant No. 2 to the proposed Water Tower No. 3.
- Watermain Replacement Project ($150,000) – The Southeast Planning Area Watermain Study will identify and prioritize watermain replacement within the southeast area of the City. This project would improve 1 city block of watermain.
- Leak Detection Study ($20,000) – To address the IEPA inspection recommendation of the reduction of lost water, we would recommend a leak detection study. The study will complete an AWWA Water Audit and perform targeted leak detection.

FY 2022 – 2023 ($700,000)

- WTP #2 Filter and Softener Media Replacement ($550,000) – The media at Water Treatment Plant No. 2 would be 17 – 26 years old and in need of replacement.
- Water Tower No. 3 (Loan/Bond) – The construction of a 500,000-gallon water tower on the north side of the City. Funding for the Water Tower No. 3 project would need to be a loan/bond. The City will not have built up enough reserves to fund the project.
- Watermain Replacement Project ($150,000) – The Southeast Planning Area Watermain Study will identify and prioritize watermain replacement within the southeast area of the City. This project would improve 1 city block of watermain.

FY 2023 – 2024 ($750,000)

- Watermain Replacement Project ($750,000) – The Southeast Planning Area Watermain Study will identify and prioritize watermain replacement within the southeast area of the City. This project would improve 5 city blocks of watermain.

FUTURE

- Route 24 Watermain Relocations to accommodate IDOT roadway improvements
- Chemical Flow Pacing at the Water Treatment Plants
- Water Treatment Plant No. 1 Abandoned Reaction Basin Demolition
- Lead service line replacement

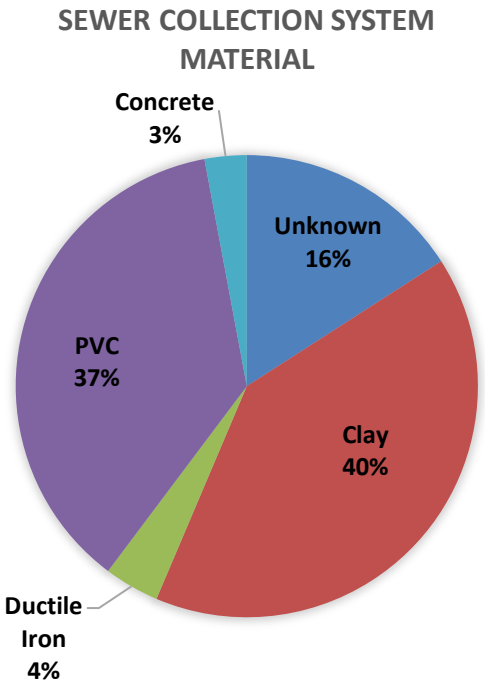
It should be noted that the data collection, inventory development and engineering studies will likely identify additional improvement needs that will require a review of capital priorities on an annual basis.

3.0 SANITARY SEWER SYSTEM

The construction and maintenance of a sanitary sewer collection and treatment systems represent one of the largest investments made by public works entities. The reliable operational of this system is critical to the public health and safety of the community and environment. A combination of regular inspection, maintenance, and rehabilitation planning can ensure that this public infrastructure provides the proper LOS while maintaining cost effective life cycles. The capital improvement planning reviewed the sanitary sewer system assets and developed recommendations for major maintenance/replacement expenditures, additional inspection requirements, engineering studies, and data collection needs.

The sanitary sewer system consists of:

- Sewer Treatment Plant No. 1 and No. 2
- 6 collection system pump stations
- 1690 Manholes
- 79 miles of Sanitary Sewer Pipe ranging in size from 4 to 42 inches
- 5900 sewer accounts



The City has completed numerous projects in the past to improve the sanitary sewer system. These projects include:

- Sewer Treatment Plant No. 2 (STP #2) Improvement Project Phase 2A
- Capacity Management Operations Maintenance (CMOM) Program Report
- Maintenance Building
- Tornado Damage Repair
- Numerous Improvements and Upgrades at STP #2
- Installation of VFD at collection system pump stations
- Inventory of the existing equipment at the STP #1 and STP #2

The City currently uses several software systems to document, organize, and track information related to the collection system and treatment plant. ArcGIS is utilized to maintain standard naming and nomenclature for the sewer pipes and structures, to map the locations of collection system sewers, and to store information on the construction and physical properties of the pipe. Aries Camera Truck is utilized to perform closed circuit televising (CCTV) inspection of the sewers. The operational data and maintenance data for the sewer treatment plants is captured using excel spreadsheets and some collection system maintenance/repair data is not currently being recorded.

3.1 LEVEL OF SERVICE INDICATORS

LOS of the existing equipment within the wastewater treatment plant is based on age and performance. The City staff has developed an inventory of this equipment and is constantly assessing the

performance of the equipment within the sewer treatment plant through their daily readings. These daily readings can be combined with the age of equipment to identify and plan for major repairs/maintenance.

Pipe materials along with sewer age within the collection system have a significant impact on the life expectancy or the level of maintenance required for a sewer segment. Collection and documentation of past sewer customer service calls can also be used a good indicator of the LOS for a sewer segment. Numerous calls for roots or blockage within a single area can help a municipality begin to schedule preventative cleaning/root cutting or prioritize a repair in that area.

TV Inspection of a sewer segment is the final and most important level of service indicator. These inspections can identify problems before they cause LOS problems. The inspections also allow the municipality to identify the defects within their system and allow them to plan for repairs/maintenance instead of reacting to a failure after it has occurred. The CMOM report (as submitted to the IEPA) indicates that the City will target system-wide jetting and cleaning every 2 years. The City does not meet this target and performs minimal preventative maintenance CCTV inspections of their system.

The City's GIS system has done a good job of documenting sewer age and materials. However, developing a method to capture complaints and maintenance, along with performing CCTV inspection of the entire sanitary sewer system will be critical for the development of a long-term capital plan to allow the City to move from reactive repairs to proactive maintenance.

3.2 OPERATION AND MAINTENANCE

The City has done a good job keeping up with the operation and maintenance of the sewer treatment plants. The improvement projects at the plants has replaced/upgraded critical equipment throughout the facility.

Regular cleaning and maintenance of the collection systems is critical to preventing blockages, back-ups, or other types of failures. In addition, regular inspection of the collection system allows for an assessment of pipe conditions, identification of potential needs, and the prioritization of capital improvements through asset management principles. As an overall goal, these activities should provide customers with a high level of service from their sewer system while maximizing the benefit of sewer funds spent.

The City will need to increase the inspection and maintenance activities of the sewer collection system to meet the requirements of the CMOM report requirements. We recommend the City revise the CMOM program by establishing a goal of cleaning and inspecting the sewer collection system within five years. A five-year investigation plan will allow for a phased approach to identify system defects and develop a capital and maintenance plan for future years. The data collection process will require adoption of a standardized pipe rating system that will allow for informed decisions about future capital improvements and maintenance needs.

3.3 FINANCIAL CAPACITY

The City completed a rate study in 2019 and enacted a scheduled rate increases through FY 2024. The rate increase is expected to provide new funds for sewer system capital improvements at a level of

$500,000 for FY 2020-2021, $600,000 for FY 2021-2022, $650,000 for FY 2022-2023, and $750,000 for FY 2023-2024. The City has increased the Sewer Fund balance above the minimum balance and could spend these reserves to fund capital projects.

Unfortunately, the City has not experienced the revenue increases anticipated by the rate study. Revenue is projected to be $200,000 less than the amount expected by the rate study for FY 2020-2021. The City has also seen a substantial increase in the anticipated construction cost for STP #2 Phase 2B. The project cost has increase from $3.5M to $12.8M. The City plans to utilize an IEPA loan to fund the STP #2 Phase 2B project. The anticipated yearly IEPA loan payment is $780,000 on a 20-year loan or $575,000 on a 30-year loan. These payments will have a major impact on the City's ability to fund capital projects. The impacts of the Phase 2B loan payment will not affect the City's budget until FY 2022-2023. The Sewer Fund balance provides the City with some flexibility to fund capital improvements on the sewer collection system over the next few years while they also fund the Phase 2B project with an IEPA loan.

3.4 RECOMMENDATIONS

FY 2020 – 2021 ($1,521,500)

- North Lawndale Drive Sewer Replacement ($633,500) – Sewer replace associated with the complete street project.
- West Holland Street Sewer Replacement ($160,000) – Sewer replace associated with the complete street project.
- Cummings Lane Sanitary Sewer Extension ($50,000) – Sanitary sewer extension under Cummings Lane to support a commercial development.
- Sanitary Sewer Collection System Cured-In-Place-Piping ($150,000) – The CIPP lining of sanitary sewers that in need of repair due to backups and pipe failures.
- STP #2 Phase 2B Engineering/Easements/Bond Council ($245,500)
- WWTP/Collections Large Equipment ($20,000)
- CCTV Equipment Upgrade and Staff Training (City Staff) – The City should work with their Aries representative to improve their existing CCTV truck to record and download inspection videos to the GIS system. The City Staff will need training so that they can inspect and rate the sewers using the NASSCO rating system. The use of the rating system will be critical to be able to compare sewer segments and prioritize repairs.
- Sanitary Sewer CCTV Inspection of Southeast Planning Area ($215,000) – The sanitary sewer collection system in the Southeast Planning area makes up some of the oldest clay pipe in the system. The City should contract with a contractor to have this area inspected and assessed. This inspection will allow the City to determine the appropriate needed repairs (Replace, point repair, or CIPP). 90,000 lineal feet of 6-inch to 12-inch sanitary sewers are in the Southeast Planning Area. The CCTV of this area will be completed over two fiscal years.
- Sewer Complaint/Maintenance Documentation (City Staff) – The City should develop a system to document sanitary sewer backups and blockages in the City's GIS system. This data will be critical in assessing improvement needs and will be utilized to prioritize replacements and identifying system needs.

- Misc. Capital Items included in the budget ($47,500)

FY 2021 – 2022 ($640,000)

- STP #2 Phase 2B ($12.5M) – IEPA loan application process in progress.
- STP #2 Generator ($250,000) – The City should include generator improvements in the STP #2 Phase 2B project to ensure that during a power loss the City can continue forward flow through the STP #2. The savings from developing a separate set of drawings could be experienced if it were included and phased with the STP #2 Phase 2B project. There would also be additional savings since the contractor will have already mobilized to the project site.
- Demo & Removal of Abandoned Influent Pumps ($25,000) – The City should include the demo and removal of the abandoned influent pumps in the STP #2 Phase 2B project. The savings from developing a separate set of drawings could be experienced if it were included and phased with the STP #2 Phase 2B project. There would also be additional savings since the contractor will have already mobilized to the project site.
- Sanitary Sewer CIPP Lining ($150,000) – It is anticipated that the inspection of the first half of the sewers in the Southeast Planning Area will identify urgent repairs. The amount is assumed and will need to be updated per the inspection results.
- Sanitary Sewer CCTV Inspection of Southeast Planning Area ($215,000) – The sanitary sewer collection system in the Southeast Planning area makes up some of the oldest clay pipe in the system. The City should contract with a contractor to have this area inspected and assessed. This inspection will allow the City to determine the appropriate needed repairs (Replace, point repair, or CIPP). 90,000 lineal feet of 6-inch to 12-inch sanitary sewers are in the Southeast Planning Area. The CCTV of this area will be completed over two fiscal years.
- Sanitary Sewer CCTV Inspection (City Staff) – To achieve the goal of cleaning and televising the system in 5 years, the City Staff will need to inspect 45,000 lineal feet of sanitary sewer per year for 4 years (first year was spent training and updating equipment). An outside contractor will inspect the remaining sewers over a five-year period (232,000 lineal feet).

FY 2022 – 2023 ($800,000)

- Remove and Replace exiting catwalk at STP #2 ($225,000)
- STP #2 Creek Erosion and Culvert Extension Design Engineering ($75,000)
- Sanitary Sewer CIPP Lining ($150,000) – It is anticipated that the inspection of the second half of the sewers in the Southeast Planning Area will identify urgent repairs. The amount is assumed and will need to be updated per the inspection results.
- Sanitary Sewer CCTV Inspection ($350,000) – The City's CCTV equipment is limited to the inspection of 12-Inch diameter and less. The City will need to contract the inspection of all truck sewers greater than 12-Inches.
- Sanitary Sewer CCTV Inspection (City Staff) – To achieve the goal of cleaning and televising the system in 5 years, the City Staff will need to inspect 45,000 lineal feet

of sanitary sewer per year for 4 years (first year was spent training and updating equipment). An outside contractor will inspect the remaining sewers over a five-year period (232,000 lineal feet).

FY 2023 – 2024 ($612,000)

- Sanitary Sewer CIPP Lining ($250,000) – It is anticipated that the inspection of the sanitary sewers will identify urgent repairs. The amount is assumed and will need to be updated per the inspection results.
- Sanitary Sewer CCTV Inspection ($215,000) – The City should contract with a contractor to inspect 45,000 lineal feet. This inspection will allow the City to determine the appropriate needed repairs (Replace, point repair, or CIPP).
- Sanitary Sewer CCTV Inspection (City Staff) – To achieve the goal of cleaning and televising the system in 5 years, the City Staff will need to inspect 45,000 lineal feet of sanitary sewer per year for 4 years (first year was spent training and updating equipment). An outside contractor will inspect the remaining sewers over a five-year period (232,000 lineal feet).
- STP #2 Outfall Culvert Replacement/Extension ($75,000) – Removal and replacement of existing outfall culvert. The culvert would be extended to allow for an access road over the culvert. The culvert entrance and exit, along with the drainage swale extension would need to be armored with riprap to protect against erosion.
- STP #2 Fence Replacement ($72,000) – Replacement of 2,500 lineal feet of chain link fence at STP #2.

FUTURE

- STP #2 Creek Erosion Protection/Repair
- Sanitary Sewer CIPP Lining ($250,000) – It is anticipated that the inspection of the sanitary sewers will identify urgent repairs. The amount is assumed and will need to be updated per the inspection results.
- Sanitary Sewer CCTV Inspection ($215,000) – The City should contract with a contractor to inspect 45,000 lineal feet. This inspection will allow the City to determine the appropriate needed repairs (Replace, point repair, or CIPP).
- Sanitary Sewer CCTV Inspection (City Staff) – To achieve the goal of cleaning and televising the system in 5 years, the City Staff will need to inspect 45,000 lineal feet of sanitary sewer per year for 4 years (first year was spent training and updating equipment). An outside contractor will inspect the remaining sewers over a five-year period (232,000 lineal feet).

It should be noted that the data collection, inventory development and engineering studies will identify additional improvement needs that will require a review of capital priorities on an annual basis.

4.0 PUBLIC STREET SYSTEM

The public streets of every community are the most visible and often criticized infrastructure element of the vast array of assets maintained by public works officials. A visitors first impression of a community is formed by what they see. Well maintained homes and businesses are a large part of that first impression. However, streets with potholes, crumbled curbs and medians, and intermittent sidewalks will leave a poor impression. In addition to providing safe and efficient travel, a well-maintained street network also serves as an economic development resource by creating a positive image for the entire community.

4.1 EXISTING CHARACTERISTICS

Washington's existing street network is 79.4 miles in length. Street types are classified by their use and physical characteristics. Terms like arterial, collector and local are used within the transportation industry to classify streets by their significance. We also identify streets by their physical traits, such as urban and rural. An urban street is characterized by curb and gutter, sidewalk and storm sewer system whereas a rural street has shoulders and roadside ditches that carry runoff. The following tables tabulate Washington's street system.

Street Type	Length (miles)	Percentage of Total Length	Area (sq. yards)	Average Width (feet)
Urban	64.5	81.2	1,168,995	30.9
Rural	9.9	12.5	111,405	19.1
Cemetery Road	1.8	2.3	10,746	10.0
Alleys	3.1	4.0	21,353	11.6
Totals	79.4	100.0%	1,312,499	28.2

Table 4.1.1

Functional Classification	Length (miles)	Percentage of Total Length	Area (sq. yards)	Average Width (feet)
Minor Arterial	3.5	4.4%	80,227	39.1
Major Collector	9.1	11.5%	128,299	24.0
Minor Collector	5.3	6.7%	92,690	29.6
Local Street	56.5	71.1%	979,185	29.6
Cemetery Road	1.8	2.3%	10,746	10.0
Alleys	3.1	3.1%	21,353	11.6
Totals	79.4	100.0%	1,312,499	28.2

Table 4.1.2

4.2 PAVEMENT CONDITION

Washington's GIS database contains pavement condition ratings (PCR) for all city streets except for the alleys and cemetery roads. The most recent data collected in 2017 is a scale of 1 (failed) to 10 (excellent) based on the PASER pavement condition evaluation system.

The rural streets have an average rating of 6.5 and the urban street average rating is 6.9. The average rating by functional classification are:

- Local Street: 6.9
- Minor Collector: 6.8
- Major Collector: 6.6
- Minor Collector: 6.2

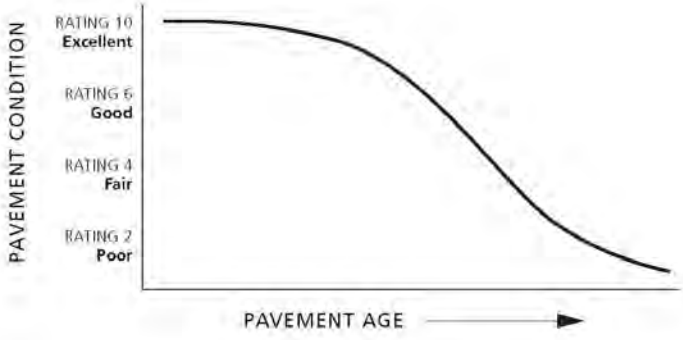
Since 2017, the following streets have been rehabilitated with a hot-mix asphalt overlay:

- 2017 MFT Program: Asphalt Overlay of the following streets:
  - Jefferson Street – Wilmore Road to Walnut Street (PCR of 5.5)
  - Lexington Drive – School Street to Summit Street (PCR of 6.0)
- 2018 Street Fund Program: Asphalt Overlay of the following streets:
  - Freedom Parkway – McClugage Road to Eastern terminus (PCR of 7.0)
  - School Street – North City limits to South City limits (PCR of 7.1)

The 2019 MFT program of $855,000 is scheduled for completion in FY 2020/21. Streets in the following subdivisions will receive a seal coat treatment.

- Beverly Manor – 27,519 Sq. Yards (11,779 LF) Average PCR of 6.8
- Sherwood Manor – 1,507 Sq. Yards (646 LF) Average PCR of 4.1
- Hillcrest – 64,378 Sq. Yards (21,151 LF) Average PCR of 6.6
- Kara Steeplechase – 11,886 Sq. Yards (2,797 LF) Average PCR of 7.1
- Firethorn – 40,590 Sq. Yards (11,092 LF) Average PCR of 7.1

This graph and table are from the "PASER Manual for Asphalt Roads," published by the Wisconsin Transportation Information Center. The PASER Manual provides guidelines for conducting the ratings as well as treatment recommendations based on the rating. Routine maintenance and preservation treatments are the recommended course of action for pavements rated in the 5 to 7 range. Pavements rated less than 5 typically require an asphalt overlay and reconstruction when the condition has completely deteriorated.



In addition to indicating the surface condition of a road, a given rating also includes a recommendation for needed maintenance or repair. This feature of the rating system facilitates its use and enhances its value as a tool in ongoing road maintenance.

RATINGS ARE RELATED TO NEEDED MAINTENANCE OR REPAIR

Rating 9 & 10	No maintenance required
Rating 8	Little or no maintenance
Rating 7	Routine maintenance, cracksealing and minor patching
Rating 5 & 6	Preservative treatments (sealcoating)
Rating 3 & 4	Structural improvement and leveling (overlay or recycling)
Rating 1 & 2	Reconstruction

The good news is that only 2% of Washington streets have a rating less than 5. The 2017 data also rated 89% of Washington streets in the 5 to 7 range in 2017. If the rating data is believed to be a fair representation of pavement condition three years ago, we conclude that Washington has maintained the pavement in an acceptable condition. The future challenge is to adequately fund and execute pavement maintenance programs each year and apply the appropriate treatments based on actual pavement conditions.

The following is a simple analysis of an annual seal coat maintenance program based on Washington's street system:

- The total surface area of Washington streets is 1,312,500 square yards per the GIS database.
- The 2019 MFT program will apply an A-1 treatment to 145,880 square yards at a cost of $825,000.
- The cost per square yard was $5.66.
- If an A-1 seal coat is applied every 10 years to every street,
- the annual program will need to treat 131,250 sy per year.
- The annual construction cost to apply an A-1 seal coat would be $742,875 based on 2019 cost data.

Based on this quick analysis, Washington will need to continue an annual investment in the order of $800,000 per year to keep pace with the annual maintenance needs of the pavement system. The annual program will need to increase as additional pavement is added to the system and keep pace with the inflation costs of construction. The other question to be addressed is when it is necessary to perform more extensive repairs. That question is typically answered when the conditions of sidewalks, curb & gutter, water mains and sewer pipes are factored into the decision.

4.3 Street Infrastructure Elements

Pavement – Most of Washington's street network has an asphalt pavement surface. Section 4.2 of this report provides further details about the type and condition of the city streets. We expect that many of the streets in the oldest subdivisions (Southeast Area) were originally constructed with brick. Currently, the only brick streets that have not been covered with an asphalt surface are Catherine Street, 100 block of W. Holland, 100 block of Zinser Place and 100 block of S. Spruce. The reconstruction of W. Holland in 2020 will produce a new brick pavement surface. Though most of the existing brick streets remain in fair condition according to the 2017 Pavement Condition Ratings, spot repairs have resulted in concrete and asphalt patches that detract from the character of a brick street.

Cemetery Roads & Alleys – The 20/21 Budget allocates $32,000 for a seal coat treatment to approximately half of the cemetery's 9,671 feet of roads. A similar treatment will be required for the remaining roads in future years.

The current budget does not allocate funds for the 3.1 miles of alleys. The average width of an alley in Washington is 11.6 feet. Sixty-three percent of the alleys are paved while thirty-seven percent are gravel.

Sidewalks – The existing GIS database has limited information about the location and no information on the condition of sidewalks. Knowing that 81% (64.5 miles) of Washington streets are an urban cross section (described above in Section 4.1), it is reasonable to assume that most of the urban streets include

sidewalks on one or both sides. Sidewalks have a very positive effect on the social and economic character of a community. The sidewalk network of Washington must be maintained, improved where necessary, and constructed where absent. In addition to the obvious reasons to provide a comprehensive sidewalk network, federal and Illinois laws require municipalities to develop and implement a plan to provide accessible sidewalks in accordance with the 2010 policies of the American's with Disabilities Act.

Curb & Gutter – The defining characteristic of an urban street is the use of curb and gutter along each pavement edge. Given that 64.5 miles of the street network are urban, we can calculate the network has approximately 681,000 linear feet of curb and gutter. In the older subdivisions we observe that many of the streets have received asphalt overlays which also covers the curb and gutter. Many of these streets would benefit from new curb and gutter to restore the urban character, improve storm drainage conditions and extend the pavement life.

4.4 Fiscal Year 20/21 Street Improvement Program

The 20/21 Capital Improvement Budget itemizes several street projects in addition to the MFT funded seal coat program that is described above. The Introduction section of this report described the N. Lawndale and W. Holland reconstruction programs. The plan also budgets $497,000 for replacement of the Stratford Drive Bridge over Farm Creek. Other projects provide for street repairs on various routes and engineering services for the extension of Freedom Parkway east to Cummings Lane and a northerly extension of Lakeshore Drive from Business 24 to the future Freedom Drive. The total amount being invested into the Washington street system is 3.9 million dollars (Table 1.4.2) in the 20/21 Budget.

4.5 Financial Capacity

Funds dedicated exclusively for the maintenance, repair and replacement of street infrastructure are the MFT and Street funds. The annual revenues of these funds in the 20/21 budget is forecasted to be $912,000, of which, $638,000 is the Illinois Motor Fuel Tax Fund and $274,000 is the City's Street Fund. Most of the Street Fund revenue ($220,000) is from the Township Road & Bridge property taxes. (These values are tabulated in Table 1.4.1) Washington's leaders have consistently adopted budgets that subsidize the Street Fund with inter-fund transfers from the General Fund.

4.6 Project Priorities

Street improvement recommendations of this plan will list the projects in the current budget and continue the multi-year projects in future years. The plan will rely on available pavement condition rating (PCR) data to prioritize projects in the near future. Street reconstruction projects will also need to be closely coordinated with the needs of the water, sewer and drainage systems that are all within the street right of way. The city's plan to reinvest in the SE Area is a logical approach given that those streets and utilities are the oldest infrastructure within the system. However, rather than replacing all infrastructure within a selected street section, we suggest an approach that replaces those assets that have reached the end of their useful life and rehabilitates those assets whose life can be extended. It will be necessary to perform pavement condition ratings on a recurring basis (3 to 4-year interval) in order to track the rate of pavement deterioration and provide data for the prioritization process. Locations and condition data will also need to be gathered for the existing sidewalks and curb and gutter in order to improve the capital planning process.

4.7 RECOMMENDATIONS

Based on the information reviewed for this plan and the observations reported previously in this report, the street improvement recommendations over the next 5 years are provided in the comprehensive project list in Section 8 of this report.

The project costs are based on recent construction cost data. For some projects, professional services are identified separately while other projects list a single cost as the total budget item. The following unit costs have been used to establish project budgets reported in Section 8.

- A-1 Seal Coat with Cape Seal applied: $6.00/SY
- Asphalt Overlay and Milling ($2^{1/2}$" thickness): $24/SY
- Sidewalk reconstruction (4" PCC, remove & replace): $12/SF
- Curb & Gutter reconstruction: $48/LF
- Preliminary engineering: 6% of construction
- Design/Bidding Docs engineering: 6% of construction
- Construction phase engineering: 10% of construction

The following table provides annual costs to apply an A-1 Seal Coat and Cape Seal based on a treatment interval to the existing pavements (1,312,500 SY at 30.9 feet wide) using the unit price data provided above.

Treatment Interval (years)	Pavement Area (sy) Treated per Year	Length Treated per Year	Seal Coat Cost	MFT Engineering Fee	Total Annual Cost
7	187,500	4,929	$1,125,000	$56,250	$1,181,250
10	131,250	3,451	$787,500	$39,375	$826,875
12	109,375	2,875	$656,250	$32,813	$689,063
15	87,500	2,300	$525,000	$26,250	$551,250

Table 4.7.1

The following table provides annual costs to perform a 2.5" milling and asphalt overlay on Washington's streets based on a construction interval to the existing pavements (1,312,500 SY at 30.9 feet wide) using the unit price data provided above. For estimating purposes, the table includes cost to remove and replace half of the sidewalk and curb & gutter within the improvement length.

Construction Interval (years)	Pavement Area (sy) Resurfaced per Year	Length Repaired per Year	Mill & HMA Cost	½ of Sidewalk R&R	½ of C&G R&R	Eng. Fee	Total Annual Cost
20	65,625	1,725	$1,575,000	$82,814	$82,814	$419,376	$2,123,566
25	52,500	1,380	$1,260,000	$66,251	$66,251	$335,501	$1,698,852
30	43,750	1,150	$1,050,000	$55,209	$55,209	$279,584	$1,415,710
40	32,813	863	$787,500	$41,407	$41,407	$209,688	$1,061,783

Table 4.7.2

The above table does not include any costs for storm drainage repairs and replacement that would also warrant inclusion in the annual projects. These costs could be funded by the Stormwater Management Fund and could potentially amount to 25% of the street project costs.

As first mentioned in Section 1.4 of this report, the N. Lawndale and W. Holland projects will remove and replace all the utilities, pavements, curb & gutter, sidewalk and private water and sewer connections to buildings. Replacing all infrastructure assumes that all facilities have reached the end of their useful life and it is more cost effective to replace everything than to repair some elements and replace others. This approach will be implemented if condition data confirms this is the best course of action. This CIP includes recommendations for additional data gathering to evaluate the condition of utilities, pavements and sidewalks. That information will be critical to evaluating the extent to which street projects are executed as complete reconstructions or targeted repairs and reconstruction.

Tables 4.7.1 and 4.7.2 provide budget scenarios for annual seal coat and resurfacing construction programs. The following table provides combined annual cost based on improvement interval scenarios.

Seal Coat Interval (years)	Seal Coat Cost	Mill & HMA Interval (years)	Mill & HMA Cost	Total Annual Cost
7	$1,181,250	20	$2,123,566	$3,304,816
10	$826,875	25	$1,698,852	$2,525,727
12	$689,063	30	$1,415,710	$2,104,773
15	$551,250	40	$1,061,783	$1,613,033

Table 4.7.3

As noted in Section 4.5 above, the annual revenues going into the MFT and Street Funds is approximately $912,000. These annual revenues are sufficient to perform an effective seal coat program on a ten to fifteen-year cycle to maximize the life cycle of the existing pavements. The challenge for the annual budget process is to commit funds from the General Fund for an annual “mill and overlay” program. The strain on the General Fund is even more significant when we budget an additional 25% of the street costs for storm drainage infrastructure as mentioned above.

The 20/21 Capital Improvement Budget and future year budgets includes several projects that will take advantage of grant programs for construction of new facilities. These outside revenue sources are essential to extend Freedom Parkway eastward to Cummings Lane, building new recreation trails, and new sidewalks to schools. This CIP prioritizes the repair and reconstruction of existing infrastructure with reliable annual revenue sources that are dedicated for infrastructure.

5.0 BRIDGES

The City of Washington has ten bridges within the street network. The following table identifies the bridges by their location and characteristics.

Str. #	Street Name	Year Built	Deck Surface Dimensions		
			Length (ft)	Width (ft)	Area (SF)
090-6000	N. Main Street	1966	25	47	1175
090-6001	S. Main Street	1966	30	48	1453
090-6004	Stratford Drive	1961	22	44	975
090-6007	Elm Street	1969	25	44	1100
090-6008	Candlewood Lane	1894	27	15	405
090-6010	W. Jefferson St.	1980	52	46	2376
090-6011	Westgate Road	1982	37	40	1477
090-6012	Dallas Road	2000	40	34	1365
090-6013	Lawndale Road	2002	64	35	2242
090-6088	Lincoln Avenue	2009	23	47	1081

Table 5.0.1

IDOT maintains a database of all bridges in Illinois and municipalities are required to submit inspection reports on a recurring basis. The database includes a Sufficiency Rating value, estimated lifespan of the structure and a replacement cost based on $300 per square foot of deck area. The following table provides that additional information about each structure.

Str. #	Street Name	Year Built	Estimated Lifespan	Remaining Lifespan	Estimated Replacement Cost
090-6000	N. Main Street	1966	60	6	$352,500
090-6001	S. Main Street	1966	60	6	$435,786
090-6004	Stratford Drive	1961	60	1	$292,380
090-6007	Elm Street	1969	60	9	$330,000
090-6008	Candlewood Lane	1894	150	24	$121,500
090-6010	W. Jefferson St.	1980	60	20	$712,920
090-6011	Westgate Road	1982	60	22	$443,124
090-6012	Dallas Road	2000	60	40	$409,374
090-6013	Lawndale Road	2002	60	42	$672,465
090-6088	Lincoln Avenue	2009	60	49	$324,300

Table 5.0.2

5.1 FISCAL YEAR 20/21 STREET IMPROVEMENT PROGRAM

The 20/21 Capital Improvement Plan has budgeted $450,000 for construction and $47,000 for engineering of a new structure to replace the Stratford Street Bridge.

5.2 RECOMMENDATIONS

The two Main Street bridges are predicted to require replacement in 2026 and three years later, the Elm Street Bridge will likely need to be replaced. Given that the Stratford Street Bridge project is budgeted at 170% of the estimated replacement cost provided by IDOT, capital improvement budgets for these structures shall be further investigated in the next few years.

6.0 STORMWATER MANAGEMENT

Washington's GIS database contains a great deal of information about the existing storm sewer system. For instance, we find approximately 3,800 records for storm sewer pipes, 700 manholes, 2,250 inlets, and 179 outfalls to streams. Most of the records are partially complete. For example, not all the pipe records include a diameter and/or length and none of records include elevation data for the pipes, inlets and manholes. We know that the system consists of a variety of pipe materials and sizes. We also know that some of the system crosses private property and it isn't unusual to find large pipes under buildings. Continued efforts to further investigate the location, material, sizes, and elevations of the storm drainage system will be necessary to effectively manage the municipal drainage system.

6.1 FEDERAL AND STATE REGULATIONS

Washington is the owner and operator of a Municipal Separate Storm Sewer System (MS4) subject to the federal requirements of the National Pollutant Discharge Elimination System (NPDES) that was created by the 1987 Amendment to the 1972 Clean Water Act. The amendment established that storm sewers are "point sources" of pollution to be regulated by the federal government. Washington, and 590 other Illinois communities, must comply with Illinois' General NPDES Permit No. ILR40. The current General Permit went into effect March 1, 2016. This was the third issuance of the General Permit; each lasting five years. Each MS4 community was required to submit a Notice of Intent (NOI) within 90 days of March 1, 2016. Each year thereafter, the community is required to submit an annual report to the Illinois Environmental Protection Agency by June 1st. The NOI, annual reports, stormwater management plan, and monitoring data are to be maintained and available for review for a period of five years. In addition, the NOI and annual reports are to be posted on the community website for a period of five years. These reports have not been provided for review in preparation of this CIP.

The current General NPDES Permit continues the requirements of the previous permit with new and expanded requirements pertaining to water quality. Significant requirements that warrant attention include the following:

1. Part III. Special Conditions C. – Farm Creek is an impaired stream with a Total Maximum Daily Load (TMDL) allocation for Chloride. Additional impairments are lack of streamside vegetation cover and elevated levels of Total Suspended Solids (TSS), Ph, and phosphorous.
2. Part IV. B.3.b. – Develop and update a storm sewer system map.
3. Part IV. B.3.h. – Conduct periodic inspections of storm sewer outfalls in dry weather conditions for detection of illicit discharges and illegal dumping.
4. Part IV. B.4.a. – the MS4 operator (Washington) is required to perform site inspections and enforce ordinance provisions for construction activities on private properties.
5. Part IV. B.5.d. – Develop and implement a program to minimize the volume stormwater runoff and pollutants from public property.
6. Part IV. B.5.e. – Develop and implement a program to minimize the volume stormwater runoff and pollutants from private developed property.
7. Part IV. B.6.b. – Design, install, implement, and maintain pollution prevention measures for the storage, handling and use of pesticides, herbicides and de-icing chemicals. This includes requirements for permanent storage of de-icing materials.

6.2 Fiscal Year 20/21 Stormwater Improvement Program

Washington's current budget includes $1,613,490 for stormwater infrastructure improvements. These projects include new storm sewer construction on the N. Lawndale and W. Holland projects, flood control in subdivisions, culvert repairs, and lining of storm sewers. The NPDES permit requirements will require additional funding for capital improvements and municipal operations in future years.

6.3 Recommendations

Based on the information reviewed for this plan and the observations reported previously in this report, the stormwater management improvement recommendations over the next 5 years are provided in the comprehensive project list in Section 8 of this report.

A significant investment is recommended to fully develop the GIS database of the stormwater system infrastructure. This work shall also include a CCTV inspection of the pipe network to evaluate the pipe condition. This work is identical to what is recommended for the sanitary sewer system and like the sanitary sewer recommendations, should begin in the Southeast Planning Area. These results will be used in future years to identify and prioritize infrastructure investments.

Section 4.7 of this report presents street reconstruction recommendations. The paragraph following Table 4.7.2 suggests that an additional 25% of a street reconstruction project cost should also be budgeted to rebuild the storm sewer infrastructure. In order to address stormwater management needs and regulatory requirements Washington will need to consider a new revenue source dedicated to stormwater management. The following expenditures will warrant significant revenues in the near future:

1. The oldest portions of Washington's storm sewer system are likely at the end of their useful life.
2. Farm Creek is an impaired stream with a Total Maximum Daily Load (TMDL) allocation for Chloride. Erosion of the stream banks are also a significant concern.
3. If an annual street reconstruction program is funded at $1.4 million, at least $350,000 will need to be budgeted for the storm sewer system.
4. Locating, cleaning and evaluating the existing storm sewer system will require several hundred thousand dollars

A fair and equitable way to fund municipal stormwater management programs is through a stormwater utility. As a utility, the fund would operate as a proprietary, or enterprise, fund just as the City's water and sewer funds currently operates. Communities in the immediate vicinity of Washington that operate a stormwater utility are Morton, Eureka, Peoria, Normal, and Bloomington. Dozens of other Illinois municipalities have created stormwater utilities and thousands are currently operating across the United States. Funds dedicated exclusively for stormwater management would greatly improve Washington's ability to fund maintenance and capital improvements for streets and public buildings.

7.0 FACILITY ASSESSMENT

Introduction

A team of professional engineers and architects from Crawford, Murphy and Tilly (CMT) reviewed the City owned buildings of Washington, Illinois on March 11th, 2020. The following is the team's assessment of the facility, as requested by the City of Washington. The assessment includes architectural, structural, mechanical, and plumbing systems review. Additionally, a summary of opinion of probable construction renovation costs is listed at the end of the report.

During the site visits, the team members did not operate any specific equipment, nor were any tests performed. The findings in the report are not based on a comprehensive engineering study, as we did not remove any construction materials to inspect underlying structure or systems. Our observations and report, thus, are not intended to warrant or guarantee the performance of any building components.

301 Walnut Street – City Hall

City Hall

Building Envelope

- Masonry Brick Veneer with stud backup
  - 20-50 years, repoint entire exterior $40,000
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $5,000
- Asphalt shingles
  - 20-30 years, remove and replace $16,500
- Painted Handrails
  - 5-10years, remove and replace $400
- Factory finished windows and doors
  - 20-50 years, remove and replace $15,000
  - 5-10 years, remove and replace sealants $1,000

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade carpet and VCT flooring
- Vinyl wall covering and paint

Appliances

- Refrigerator
- Electric Stove
- Microwave

Mechanical

- Four 110,000 BTU gas-fired high-efficiency Furnaces – 2009

  - 5-15 years, remove and replace $16,000
- Two 4-ton Split System Air-Conditioners – 2009
  - 5-15 years, remove and replace $8,000
- Two 5-ton Split System Air-Conditioners – 2009
  - 5-15 years, remove and replace $9,000
- Exhaust Fans in Each Bathroom – 2009
  - 5-15 years, remove and replace $500

Plumbing

- 1500-Watt Domestic Water Heater – 2009
  - 5-15 years, remove and replace $1,000
- Men's Room with 2 Sinks, a Urinal and a Toilet – 2009
- Women's Room with 2 Sinks and 2 Toilets – 2009
- Three Sanitary Sump Pumps in Basement – 2009
  - 5-15 years, remove and replace $3,000

Fire Protection

- Document Storage has an Ansul Fire Suppression System

115 West Jefferson Street – Police Station Complex

Police Department Administration Building – 4,300 sf

Building Envelope

- Masonry Brick Veneer with stud backup
  - 20-50 years, repoint entire exterior $47,500
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $2,000
- Asphalt shingles
  - 20-30 years, remove and replace $15,000
- Factory finished windows and doors
  - 20-50 years, remove and replace $10,000
  - 5-10 years, remove and replace sealants $2,000
- Painted exterior doors
  - 5-10 years, clean and paint $3,000
  - 5-10 years, remove and replace sealants $500

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade carpet, VCT flooring and ceramic tile flooring.
- Painted gypsum board partitions.
- Stained wood doors
- Painted hollow metal doors.

Mechanical

- One 8.5 Ton Computer Room Unit serving the Dispatch Equipment – 2011
  - Scheduled to be replaced in 2020
- Five Furnaces and Split System Air-Conditioners with Zoning Systems – 2011 Systems
  - Scheduled to be replaced in 2020
- Exhaust Fans for Bathrooms. – 2011
  - 5-15 years, remove and replace $500

Plumbing

- One 120,000 BTU 60 Gallon High-Efficiency Gas-Fired Water Heater - 2011
  - 5-15 years, remove and replace $7,500
- Men's Room
- Women's Room

Storage Building East – 3,900 sf

Building Envelope

- Exposed metal fastener steel panel building skin
  - 1-5 years, remove and replace $25,000

  - 1-5 years, recoat $5,000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $2,000
- Exposed fastener metal panels on wood trusses
  - 1-5 years, remove and replace $25,000
  - 1-5 years, recoat $5,000
- Painted bollards
  - 5-10 years, clean and paint $500
- Factory finished windows and doors
  - 5-10 years, clean and paint $1,000
  - 5-10 years, remove and replace sealants $500

Building Structure

Metal roof and wall panels have very little protective finish remaining. Based on secondhand reports wood truss bottom cords are deteriorating. Unable to verify due to insulation applied to bottom of trusses.

Building Interior

- Concrete floor with exposed wood columns.

Mechanical

- Multiple Standard Efficiency Gas-Fired Unit Heaters – Original to Building
  - 1-5 years, remove and replace $10,000

Plumbing

- None

Storage Building West – 3,700 sf

Building Envelope

- Exposed metal fastener steel panel building skin
  - 1-5 years, remove and replace $25,000
  - 1-5 years, recoat $5,000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $2,000
- Exposed fastener metal panels on wood trusses
  - 1-5 years, remove and replace $25,000
  - 1-5 years, recoat $5,000
- Painted bollards
  - 5-10 years, clean and paint $500
- Factory finished windows and doors
  - 5-10 years, clean and paint $1,000
  - 5-10 years, remove and replace sealants $500

Building Structure

Metal roof and wall panels have very little protective finish remaining. Based on secondhand reports wood truss bottom cords are deteriorating. Unable to verify due to insulation applied to bottom of trusses.

Building Interior

- Concrete floor with exposed wood columns.

Mechanical

- Multiple Standard Efficiency Gas-Fired Unit Heaters – Original to Building
  - 1-5 years, remove and replace $10,000
- One Gas-Fired Standard Efficiency Furnace for Office Area – Unknown Age
  - 1-5 years, remove and replace $3,000

Plumbing

- One 38,000 BTU 50 Gallon Standard Efficiency Gas-Fired Water Heater – 2011
  - 5-15 years, remove and replace $1,500

Storage Building South – Street Department Shop – 4,000 sf (estimated)

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 1-5 years, repoint entire exterior $35,000
- Metal fascia, gutters and downspouts
  - 10-20 years, remove and replace $2,000
- Asphalt shingles
  - 10-20 years, remove and replace $15,000
- Painted doors and trim
  - 5-10 years, clean and paint $300
  - 5-10 years, remove and replace sealants $100
- Factory finished doors overhead doors
  - 20-50 years, remove and replace $10,000
  - 5-10 years, remove and replace sealants $1000
- Glass block windows
  - 20-50 years, repoint window $1500
  - 5-10 years, remove and replace sealants $500

Building Structure

Several areas of severe cracking in brick and block mortar. Daylight can be seen thru the exterior walls in several locations.

Building Interior

- Concrete floor with CMU partitions

Mechanical

- One 125,000 BTU Standard Efficiency Gas-Fired Furnace -1994
  - 1-5 years, remove and replace $2,500
- One Small Exhaust Fan – Original to Building
  - 1-5 years, remove and replace $750

Plumbing

- None

Well House 06 – 240 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $7,500
- Metal fascia, gutters and downspouts
  - 10-20 years, remove and replace $150
- EPDM roof on wood framing
  - 20-30 years, remove and replace $2,500
- Factory finished window and louver
  - 20-50 years, remove and replace $500
  - 5-10 years, remove and replace sealants $50
- Painted doors
  - 5-10 years, clean and paint $250
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- N/A

Well House 07 – 260 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $7,500
- Metal fascia, gutters and downspouts
  - 10-20 years, remove and replace $150
- EPDM roof on wood framing
  - 20-30 years, remove and replace $2,500
- Factory finished window and louver
  - 20-50 years, remove and replace $500
  - 5-10 years, remove and replace sealants $50
- Painted doors
  - 5-10 years, clean and paint $250
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- N/A

Well House 08 – 260 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $7,500
- Metal fascia, gutters and downspouts
  - 10-20 years, remove and replace $150
- EPDM roof on wood framing
  - 20-30 years, remove and replace $2,500
- Factory finished window and louver
  - 20-50 years, remove and replace $500
  - 5-10 years, remove and replace sealants $50
- Painted doors
  - 5-10 years, clean and paint $250
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- N/A

107 Legion Road – Public Works Facility

Public Works Building – 6,400 sf

Building Envelope

- Masonry Brick Veneer and vinyl siding with stud backup, west elevation
  - 20-50 years, repoint entire exterior $15,000
  - 20-50 years, replace vinyl siding $1,000
- Exposed metal fastener steel panel building skin, north, east and south elevations
  - 10-20 years, remove and replace $50,000
  - 10-20 years, recoat $10,000 (alternate)
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $2000
- Exposed fastener metal roof panels on metal building frame
  - 1-5 years, remove and replace $25,000
  - 1-5 years, recoat $5,000 (alternate)
- Factory finished windows and doors
  - 20-50 years, remove and replace $1500
  - 5-10 years, remove and replace sealants $150
- Painted doors
  - 5-10 years, clean and paint $250
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted gypsum walls and CMU partitions

Mechanical

- Garage – Two Gas-Fired Infrared Tube Heaters – Original to Building
  - 5-15 years, remove and replace $6,000
- Break Room Heating – Two 80,000 BTU High-Efficiency Gas-Fired Furnaces – 2014
  - 5-15 years, remove and replace $5,000
- Break Room Cooling - One 2 ½ Ton and One 3 Ton Standard Efficiency Split System Air-Conditioning Units – 2014
  - 5-15 years, remove and replace $6,000

Plumbing

- One 40,000 BTU 40 Gallon Gas-Fired Hot Water Heater - 2009
  - 5-15 years, remove and replace $1,500
- Break Room – Men's Room: One Sink, One Toilet. Women's Room: One Sink, One Toilet.
- Garage Locker Room – Two Sinks, Two Toilets, One Urinal and One Shower.

Well House 11 – 400 sf

Building Envelope

- Load bearing CMU
  - 20-50 years, repoint entire exterior $6,400
  - 5-10 years, repaint exterior $1000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $150
- EPDM roof on wood framing
  - 20-30 years, remove and replace $2,500
- Painted doors
  - 5-10 years, clean and paint $250
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- N/A

Well House 12 – 400 sf

Building Envelope

- Load bearing CMU
  - 20-50 years, repoint entire exterior $6,400
  - 5-10 years, repaint exterior $1000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $150
- EPDM roof on wood framing
  - 20-30 years, remove and replace $2,500
- Painted doors
  - 5-10 years, clean and paint $250
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- N/A

Salt Storage Building – size not available

201 N. Mainstreet – Water Treatment Plant #1

Water Treatment Plant #1 – 3,100 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 10-20 years, repoint entire exterior $28,000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $500
- Asphalt shingles
  - 5-10 years, remove and replace $11,000
- Factory finished windows and doors
  - 20-50 years, remove and replace $1500
- Painted doors
  - 5-10 years, clean and paint $1000
  - 5-10 years, remove and replace sealants $200

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Exposed concrete floor and painted CMU partitions.

Mechanical

- One Standard Efficiency Gas-Fired Unit Heater – Relatively New
  - 15-30 years, remove and replace $3,000
- Office - One Standard Efficiency 25,000 BTU Gas-Fired Wall Heater – Relatively New
  - 15-30 years, remove and replace $2,000

Plumbing

- One 12,000-Watt 100 Gallon Electric Water Heater for Emergency Eyewash/Drench Shower – 2005
  - 5-15 years, remove and replace $7,500

1760 Constitution – Water Treatment Plant #2

Water Treatment Plant – 6,200 sf

Building Envelope

- Load bearing split face single wythe CMU
  - 5-10 years, repoint entire exterior $38,000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $1,600
- EDPM roof
  - 20-30 years, remove and replace $38,750
- Factory finished windows and doors
  - 20-50 years, remove and replace $1500
- Painted doors
  - 5-10 years, clean and paint $1000
  - 5-10 years, remove and replace sealants $200

Building Structure

Building is still experiencing structural issues with single wythe exterior CMU partitions and flashing installed at the time of construction. See CMT's previous report from 2016 below. The City replaced the roof per CMT's recommendation, but the recommended additional testing has not been completed.

Water Treatment Plant II – Building Evaluation

Description of Existing Structure

The existing building was constructed circa 1993. The building's plan dimensions are approximately 144'-0" x 44'-0". It has an eave height of approximately 17'-0".

The exterior walls are single-wythe, 12" split face concrete masonry units, or blocks. The exterior façade is composed of two different block colors. The block bands have mortar that match the adjacent blocks. According to the original drawings, the concrete blocks have an integral water repellant, are vertically reinforced at 32" on center, and have insulation in the non-reinforced cores. The inside face of the block is painted white.

The building has a built-up roof with gravel surfacing, which is supported by a 1½" metal deck on open web steel joists. The parapet wall, which is located on three sides of the building, is capped with a prefabricated aluminum coping system.

Summary of Site Visits

CMT made two site visits to inspect the building. The first inspection took place on January 14, 2016 and the second on June 8, 2016. During both site visits, moderate to severe paint peeling and chipping were noted on the inside face of the exterior masonry walls. The paint deterioration appears to start at the mortar joint and spread to the rest of the block over time. The exterior face of the concrete blocks has efflorescence staining of varying degrees around the building. Also noted were several water stains on the suspended ceiling tile in the office/lab area.

During the second inspection, several additional items were documented. The sealants used in the masonry joints have reached the end of their useful life and should be replaced. It appears that there was no mortar or sealant installed between the steel lintel plates and the masonry, which allows water to run into the building at all window and door openings.

CMT also observed moderate masonry cracking around the exterior of the building. The most severe cracks occurred on the north side of the building near the corners and pilasters. Cracks are also present below the windows on the north side of the building. The cracks below the windows are spaced at approximately 32" on center, which is the same spacing as the vertical reinforcement. It is possible that moisture is getting to the reinforcement and causing the reinforcement to corrode and expand and crack the blocks. Another possibility is that water is getting trapped inside the block and expanding when it freezes during the winter months.

Recommendations

CMT recommends that the City does not move forward with any interior or exterior painting or masonry repair projects. To provide a more conclusive answer and recommendation, further testing of the existing building will be required. These tests will likely include destructive and non-destructive testing of the existing block and mortar to better understand the composition of the original construction. This information will be used to formulate a restoration plan. A masonry restoration specialist may be consulted if testing is inconclusive or additional support is warranted. In addition to an in-depth evaluation of the masonry, a detailed review of the building mechanical systems should be performed to ensure that their operation is not compounding the moisture issues that the building is experiencing.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted CMU

Mechanical

- Workroom - One Electric Unit Heater - 1993.
  - 1-5 years, remove and replace $1,000
- Offices – One Electric Furnace and 3 Ton Split System Air Conditioner – 2017
  - 15-30 years, remove and replace $6,000
- Plant – Dehumidifier/Heater – 1993
  - 1-5 years, remove and replace $50,000

Plumbing

- One 9,000-Watt 80 Gallon Electric Water Heater for Emergency Eyewash/Drench Shower – 1993
  - 1-5 years, remove and replace $7,500
- One 1.500-Watt 12 Gallon Electric Domestic Water Heater – 1993
  - 1-5 years, remove and replace $1,000
- Bathroom - One Toilet, and One Sink.
- Lab One Kitchen Two Bowl Sink and One Mop Sink.

WTP#2 Generator Building – 490 sf

Building Envelope

- Load bearing CMU
  - 20-50 years, repoint entire exterior $8,000
  - 5-10 years, repaint exterior $1000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $150
- EPDM roof on wood framing
  - 20-30 years, remove and replace $
- Painted doors
  - 5-10 years, clean and paint $250
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- N/A

700 Woodland Trail - Waste Water Treatment Plant #1

Control Building – 550 sf

Building Envelope

- Load bearing masonry brick
  - 1-5 years, repoint entire exterior $12,000
- Painted wood siding and fascia
  - 1-5 years, replace siding $5,000
- Metal gutters and downspouts
  - 1-5 years, remove and replace $1,000
- Asphalt shingles
  - 1-5 years, remove and replace $4,000
- Painted Handrails
  - 5-10years, scrape and repaint $500
- Painted windows and doors
  - 1-5 years, scrape and repaint $1500

Building Structure

Exterior masonry is in disrepair. The mortar is past its life expectancy. The entire exterior brick surface needs to be repointed. The wood siding has large holes allowing rainwater to enter the structure. It needs to be removed and replaced. Two storage sheds with wood siding and asphalt shingle roofs at the rear of the building need new roofs and painting to remain watertight structures.

Building Interior

- Painted brick with exposed concrete floors

Mechanical

- One 165,000 BTU Standard Efficiency Gas-Fired Furnace – 1972
  - 1-5 years, remove and replace $4,000

Plumbing

- One 1650-Watt 10 Gallon Electric Water Heater – 1995
  - 1-5 years, remove and replace $1,000
- One Sink, One Toilet.

Filter Building – 2,300 sf

Building Envelope

- Exposed metal fastener steel panel building skin
  - 1-5 years, remove and replace $35,000
  - 1-5 years, recoat $8,000 (alternate)
- Metal fascia, gutters and downspouts
  - 10-20 years, remove and replace $1,000
- Exposed fastener metal panels on metal trusses
  - 1-5 years, remove and replace $25,000
  - 1-5 years, recoat $8,000 (alternate)

- Painted bollards
    - 5-10years, scrape and repaint $500
- Factory finished windows and doors
    - 20-50 years, remove and replace $7,500
- Painted doors
    - 5-10years, scrape and repaint $500

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Exposed concrete floors and unfinished exterior walls

Mechanical

- Gas Fired Unit Heaters – Original to Building.
    - 1-5 years, remove and replace $8,000

Plumbing

- Floor Drains
- Sump Pump

Digester and Equipment Building – 1,465 sf (estimated)

Building Envelope

- Load bearing masonry brick
    - 1-5 years, repoint entire exterior $12,000
- Painted wood siding and fascia
    - 1-5 years, replace siding $5,000
- Metal scuppers and downspouts
    - 1-5 years, remove and replace $1,000
- Flat Roof type undetermined, inaccessible
    - 1-5 years, remove and replace $15,000
- Painted windows and doors
    - 1-5 years, scrape and repaint $1500

Building Structure

Exterior masonry is in disrepair. The mortar is past its life expectancy. The entire exterior brick surface needs to be repointed.

Building Interior

- Exposed concrete floors

955 Ernest Street - Waste Water Treatment Plant #2

Control and Office Building – 2,940 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $30,000
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $1000
- Asphalt shingles
  - 20-30 years, remove and replace $10,000
- Factory finished windows and doors
  - 20-50 years, remove and replace $10,000
  - 5-10 years, remove and replace sealants $500
- Painted doors
  - 5-10 years, clean and paint $200
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted CMU partitions

Mechanical

- Electric Baseboard Heaters – Original to Building
  - 1-5 years, remove and replace $2,500
- Electric Unit Heaters – Original to Building
  - 1-5 years, remove and replace $1,500
- One Electric Furnace – 2011
  - 5-15 years, remove and replace $2,500
- One 4-Ton Split System Air-Conditioner - 2003
  - 5-15 years, remove and replace $3,000

Plumbing

- One 18,600-Watt 50 Gallon Electric Water Heater – 1995
  - 1-5 years, remove and replace $3,000
- Men's Room – One Toilet, One Urinal and One Sink.
- Women's Room – One Toilet and One Sink.
- Lab – One Sink.
- One Shower.

Screening Building – 1,365 sf (estimated)

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $36,000
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $500
- Asphalt shingles
  - 20-30 years, remove and replace $5,000
- Factory finished windows and doors
  - 20-50 years, remove and replace $10,000
  - 5-10 years, remove and replace sealants $500
- Painted doors
  - 5-10 years, clean and paint $500
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted CMU partitions

Mechanical

- Four Explosion Proof Electric Unit Heaters – Original to Building
  - 5-15 years, remove and replace $32,000
- Ventilation Exhaust Fans and Louvers with Motorized Dampers - Original to Building.
  - 5-15 years, remove and replace $2,500

Plumbing

- Emergency Eyewash/Drench Shower with no Hot Water Connection.

Press Building 2,200 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $25,000
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $500
- Asphalt shingles
  - 20-30 years, remove and replace $8,000
- Factory finished windows and doors
  - 20-50 years, remove and replace $2,000
  - 5-10 years, remove and replace sealants $50
- Painted doors

- 5-10 years, clean and paint $200
- 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted CMU partitions

Mechanical

- Two Electric Unit Heaters – Original to Building.
  - 5-15 years, remove and replace $4,000
- Ventilation Exhaust Fans and Louvers with Motorized Dampers - Original to Building.
  - 5-15 years, remove and replace $2,500

Plumbing

- Non-Potable Hose Bib

RAS Building – 1,920 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $21,100
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $500
- Asphalt shingles
  - 20-30 years, remove and replace $6,600
- Factory finished windows and doors
  - 20-50 years, remove and replace $4,000
  - 5-10 years, remove and replace sealants $500
- Painted doors
  - 5-10 years, clean and paint $500
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted CMU partitions

Mechanical

- Two Electric Unit Heaters – Original to Building.
    - 5-15 years, remove and replace $4,000
- Ventilation Exhaust Fans and Louvers with Motorized Dampers - Original to Building.
    - 5-15 years, remove and replace $2,500

Plumbing

- Non-Potable Hose Bib

Chlorine and Storage Building – 780 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
    - 20-50 years, repoint entire exterior $18,000
- Metal fascia, gutters and downspouts
    - 20-50years, remove and replace $100
- Asphalt shingles
    - 20-30 years, remove and replace $2,500
- Factory finished windows and doors
    - 20-50 years, remove and replace $2,000
    - 5-10 years, remove and replace sealants $500
- Painted doors
    - 5-10 years, clean and paint $500
    - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted CMU partitions

Mechanical

- Two Electric Unit Heaters – Original to Building.
    - 5-15 years, remove and replace $4,000
- Ventilation Exhaust Fans and Louvers with Motorized Dampers - Original to Building.
    - 5-15 years, remove and replace $2,500

Plumbing

- Non-Potable Hose Bib

Blower Building – 690 sf

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $18,000
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $100
- Asphalt shingles
  - 20-30 years, remove and replace $2,500
- Factory finished windows and doors
  - 20-50 years, remove and replace $2,000
  - 5-10 years, remove and replace sealants $500
- Painted doors
  - 5-10 years, clean and paint $500
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring and exposed concrete
- Painted CMU partitions

Mechanical

- Two Electric Unit Heaters – Original to Building.
  - 5-15 years, remove and replace $4,000
- Ventilation Exhaust Fans and Louvers with Motorized Dampers - Original to Building.
  - 5-15 years, remove and replace $2,500

Plumbing

- Non-Potable Hose Bib

200 N. Wilmore Road – Fire Department

Fire Department Building

Building Envelope

- Pre-engineered metal building with CMU and exposed fastener metal panels exterior walls.
  - 30-40 years, repoint entire exterior $35,000
  - 20-30 years, remove and replace $40,000
- Metal fascia, gutters and downspouts
  - 20-50 years, remove and replace $6,000
- Paint Bollards
  - 5-10 years, clean and paint $2,000
- Factory finished windows, doors and overhead doors
  - 20-50 years, remove and replace $72,000
  - 5-10 years, remove and replace sealants $5,000

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade carpet and VCT flooring
- Vinyl wall covering and paint

Appliances

- Refrigerator
- Four Burner Commercial Stove
- Residential Washer and Dryer
- Commercial Washer

Mechanical

- Three Gas-Fired High Efficiency Furnaces
  - One recently replaced, other two scheduled for replacement in the next year.
  - $4,000 per furnace
- Three Split System Air Conditioners – One Three Ton: 1994, One Four Ton: 1994 and One Three Ton: 2016
  - 1-5 years, remove and replace $7,000
  - 5-15 years, remove and replace $3,000
- Three Thru the Wall Packaged Terminal Air Conditioner
  - 5-15 years, remove and replace $4,500
- Fire Equipment Garage – Six Gas-Fired Radiant Tube Heaters – 1995
  - 1-5 years, remove and replace $15,000
- Fire Equipment Garage - Outside Air Unit – 1995
  - 1-5 years, remove and replace $18,000
- Fire Equipment Garage – Vehicle Exhaust Removal System – 1995
  - 1-5 years, remove and replace $2,000
- Fire Equipment Garage –Exhaust System – 1995

- 1-5 years, remove and replace $2,500

Plumbing

- One 40,000 BTU 40 Gallon Gas-Fired Hot Water Heater – 1995
  - 1-5 years, remove and replace $1,500

- Kitchen – Triple Basin Sink with two faucets – 1995
- Laundry Room – Mop Sink and Eye Wash - 1995
- Laundry Room – One 40,000 BTU 40 Gallon Gas-Fired Hot Water Heater – 2011
  - 5-15 years, remove and replace $1.500
- Office Bathrooms – One Men's, One Women's, One Toilet and One Sink each - 1995
- Fire House Bathroom – Two Sinks, Two Toilets, Two Urinals and One Shower - 1995
- Office – Two Drinking Fountains - 1995

307 Candlewood Drive - Glendale Cemetery

Administration and Storage Building

Building Envelope

- Load bearing CMU and vinyl siding
    - 20-50 years, repoint entire exterior $8,000
    - 5-10 years, repaint exterior $1000
- Metal fascia, gutters and downspouts
    - 20-50years, remove and replace $500
- Asphalt shingles on wood trusses
    - 10-20 years, remove and replace, $2,000
- Factory finished entry and garage doors
    - 20-50 years, remove and replace $2,000
    - 5-10 years, remove and replace sealants $200
- Glass block windows, 20-50years
    - 20-50 years, repoint window $100
    - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Commercial grade VCT flooring, ceramic tile and exposed concrete
- Vinyl wall covering and paint

Mechanical

- One 500-Watt Electric Unit Heater – 2017
    - 5-15 years, remove and replace $1,000

Plumbing

- One Toilet – Original to Building.

100 Hillcrest Drive – Booster Pump Station

360 sf (estimated)

Building Envelope

- Masonry brick veneer with load bearing CMU
  - 20-50 years, repoint entire exterior $10,000
- Metal fascia, gutters and downspouts
  - 20-50years, remove and replace $400
- Asphalt shingles on wood trusses
  - 20-30 years, remove and replace, $1,000
- Painted doors
  - 5-10 years, clean and paint $500
  - 5-10 years, remove and replace sealants $50

Building Structure

No signs of structural deficiencies were noted during building inspection. Building structure should last the life of the building with little to no repairs.

Building Interior

- Exposed concrete
- Painted CMU and wood paneling

Mechanical

- One 750-Watt Electric Unit Heater – 2009
  - 5-15 years, remove and replace $1,000
- Exhaust System with Intake Louver – Original to Building
  - 5-15 years, remove and replace $1,000

Plumbing

- None

Summary of Renovation Costs

The following pages tabulate the recommendations described in the preceding pages for each of the public buildings. The following table is a summary of the total costs for each five-year increment which is further broken down to an annual expenditure.

Time Period (years)		Total 5 Year Expenditure	Annual Expenditure
0	5	$522,750	$104,550
5	10	$123,400	$24,680
10	15	$153,250	$30,650
15	20	$64,500	$12,900
20	25	$252,050	$50,410
25	30	$288,600	$57,720
30	35	$491,900	$98,380
35	40	$94,250	$18,850
40	45	$215,500	$43,100
45	50	$48,800	$9,760
		$2,255,000	$45,100

It is the recommendation of this report that Washington establish a fund for the exclusive purpose of funding the capital improvements related to buildings and facilities. Based on the recommendations provided herein, the City should plan to spend approximately $523,000 over the next five years. If the City would establish the fund balance with an initial amount of $350,000 and then allocate $45,000 per year thereafter to the new Facilities Fund, the Fund should be able to maintain a positive balance to account for the recommendations of this report. However, the annual amount will need to be evaluated with each budget cycle to verify that the fund maintains a positive balance. As with all expenses, inflationary costs will require revenues to increase accordingly.

As stated on page 7-12, CMT recommends the City does not move forward with any interior or exterior painting or masonry repair projects at the Constitution Drive Water Treatment Plant until further testing can be completed. To provide a more conclusive answer and recommendation, further testing of the existing building will be required. These tests will likely include destructive and non-destructive testing of the existing block and mortar to better understand the composition of the original construction. This information will be used to formulate a restoration plan. A masonry restoration specialist may be consulted if testing is inconclusive or additional support is warranted. In addition to an in-depth evaluation of the masonry, a detailed review of the building mechanical systems should be performed to ensure that their operation is not compounding the moisture issues that the building is experiencing.

Our inspections and observations have also uncovered questions about space and efficiency needs. City Hall is operating at near capacity with little room for additional staff and does not provide enough space for large group meetings. We suggest a space needs study be conducted soon.

The Public Works staff are currently operating from two separate locations. The two large storage buildings located adjacent to the Police Department building is used to store large equipment. The Legion Road Public Works site is a logical location for the Public Works staff and equipment. The site has room for expansion and the nearby land use is compatible with the light industrial operations of a public works yard. We suggest a study be completed to evaluate the operational efficiencies that could be achieved by consolidating the public works staff and equipment at the Legion Road site.

8.0 RECOMMENDATIONS

The City of Washington has been doing a good job of managing and maintaining the city's infrastructure system, buildings, and equipment over the past several decades. That is evident upon reviewing the facilities, information systems, and speaking with the municipal staff responsible for maintaining the facilities. The previous sections of this report provide a review of the various facilities and infrastructure systems and a discussion of the factors impacting the performance and future needs of those facilities. Maintaining municipal public assets and protecting the community are equally important to Washington's future success. Capital improvement projects are one-time events that are part of a capital improvement plan. The capital improvement plan is a perpetual document that should be updated annually to address changing facility conditions and revenue sources.

Section 1.1 of this report provides a discussion of what is a capital improvement. Some of the items in the 2020/21 capital budget should probably be classified as a Maintenance expenditure. For instance, crack sealing pavements and asset condition investigations probably do not meet the definition of a capital improvement. A recommendation of this report is that Washington develop an annual Maintenance Plan for all facilities that can be used in conjunction with the Capital Improvement Plan to manage facilities and plan future expenditures and revenue needs. Section 6 of this report also recommends the City create a stormwater utility to fund an expanded stormwater management program.

The following table provides a consolidated list of capital expenditures over the next five years for those assets that need to be fixed, expanded, rebuilt, replaced or repurposed. Besides the physical improvements that are identified, this plan also prioritizes the need to inspect and evaluate the existing facilities. For instance:

1. Perform Pavement Condition Ratings on all City Streets in the 22/23 FY,
2. Perform annual inspection and cleaning of 20% the storm sewer and sanitary sewer systems
3. Complete a leak detection study of water mains in 21/22 FY
4. Operate all water valves and fire hydrants annually
5. Complete a potable water quality study in 20/21 FY
6. Prepare a sidewalk accessibility study in 21/22 FY

We recommend Washington continue using the GIS database and make improvements to that system as more asset information and conditions data is collected. As more of this information is collected, the decision-making process will improve as the City moves toward a Risk Management approach to maintenance and capital improvement planning.

As stated in Section 7, we also offer some specific and important recommendations relative to the public buildings and facilities. These are:

1. Establish a fund dedicated to capital improvements of public buildings and equipment.
2. Perform destructive and non-destructive testing of Water Treatment Plant #2 concrete block and mortar and retain a design professional to develop a restoration plan. Conduct an in-depth review of the building mechanical systems to determine their impact on the building's moisture problems. A fee of $25,000 is included in the following table in the FY 20/21 Unfunded column.

3. Perform a space needs study of City Hall.
4. Perform an efficiency study to determine if Public Works operations should be consolidated at the Legion Road site.

Systems Capital Improvement Budget

Fund	Systems Projects	Fiscal Year 20/21	FY 20/21 Unfunded	Fiscal Year 21/22	Fiscal Year 22/23	Fiscal Year 23/24	Fiscal Year 24/25	Five Year Total
Sewer O&M	SE Area Sanitary Sewer CCTV Inspection		$ 215,000	$ 215,000	$ 350,000	$ 215,000	$ 215,000	$ 1,210,000
Sewer O&M	Sanitary Sewer CIP Lining	$ 150,000		$ 150,000	$ 150,000	$ 250,000	$ 250,000	$ 950,000
Sewer O&M	Cummings Ln Sanitary Sewer Extension	$ 50,000						$ 50,000
Sewer O&M	Sewer Reconstruction	$ 20,000						$ 20,000
STP#2 Ph 2B	STP #2 Phase 2B Farm Creek Trunk Sewer	$ 238,000		$ 12,500,000				$ 12,738,000
STP#2 Ph 2B	STP #2 Generator			$ 250,000				$ 250,000
STP#2 Ph 2B	STP #2 Catwalk Replacement				$ 225,000			$ 225,000
STP#2 Ph 2B	STP #2 Farm Creek Erosion& Culvert Extension				$ 75,000	$ 75,000		$ 150,000
STP#2 Ph 2B	STP #2 Fence Replacement					$ 72,000		$ 72,000
STP#2 Ph 2B	STP #2 Influent Pump Removal			$ 25,000				$ 25,000
STP#2 Ph 2B	WWTP Sludge Press Pump	$ 18,000						$ 18,000
Cemetery	Cemetery Roads	$ 32,000		$ 32,000				$ 64,000
MFT	Street Seal Coat Program	$ 855,000		$ 551,250	$ 578,813	$ 607,753	$ 638,141	$ 3,230,956
MFT	Alley Seal Coat Program			$ 11,210	$ 11,771	$ 12,359	$ 12,977	$ 48,318
Recreation Trail	Recreation Trail Extension	$ 50,000						$ 50,000
Safe Routes	District 51 SRTS	$ 310,000						$ 310,000
Safe Routes	District 52 SRTS	$ 245,000						$ 245,000
St, SW, W&S	N. Lawndale	$ 2,777,980						$ 2,777,980
St, SW, W&S	W. Holland	$ 864,160						$ 864,160
Streets	Freedom Parkway Extension	$ 160,000			$ 196,350	$ 3,272,500		$ 3,628,850
Streets	Lakeshore Drive Extension	$ 150,000				$ 106,590	$ 1,776,500	$ 2,033,090
Streets	Stratford Bridge Replacement	$ 497,000						$ 497,000
Streets	South Main St Resurfacing				$ 27,280	$ 545,600		$ 572,880
Streets	N. Cummings Resurfacing			$ 15,253	$ 305,067			$ 320,320
Streets	Curb & Gutter Replacement			$ 48,000	$ 50,400	$ 52,920	$ 55,566	$ 206,886
Streets	Sidewalk Replacement			$ 48,000	$ 50,400	$ 52,920	$ 55,566	$ 206,886
Streets	Sidewalk C&G Replacement Engineering			$ 9,600	$ 10,080	$ 10,584	$ 11,113	$ 41,377
Streets	Street Light/Traffic Signals	$ 32,000		$ 33,600	$ -	$ 35,280	$ -	$ 100,880
Streets	Miscelaneous Repairs/Services	$ 90,000		$ 94,500	$ 99,225	$ 104,186	$ 109,396	$ 497,307
Streets	Freedom Pkwy Traffic Signal at WalMart					$ 10,000	$ 75,000	$ 85,000
Streets	Sidewalk ADA Compliance Program				$ 25,000	$ 26,250	$ 27,563	$ 78,813
Streets	Sidewalk Construction				$ 25,000	$ 26,250	$ 27,563	$ 78,813
Streets	Sidewalk ADA Study & Annual Engineering			$ 75,000	$ 8,000	$ 8,400	$ 8,820	$ 100,220
Streets	Lakeshore Dr. ROW Acquisition					$ 70,000		$ 70,000
Streets	Calvary Way Repairs	$ 53,000						$ 53,000
Streets	Pavement Condition Ratings				$ 50,000			$ 50,000

Systems Capital Improvement Budget

Fund	Systems Projects	Fiscal Year 20/21	FY 20/21 Unfunded	Fiscal Year 21/22	Fiscal Year 22/23	Fiscal Year 23/24	Fiscal Year 24/25	Five Year Total
Streets	South Main Street Crack Sealing			$ 50,000				$ 50,000
Streets	N. Cummings Crack Sealing	$ 35,000						$ 35,000
Streets	Pinetree Repairs	$ 11,000						$ 11,000
Streets & SWM	North St Culvert Engineering	$ 45,000		$ 30,000				$ 75,000
Streets & SWM	North St Culvert Construction			$ 150,000				
SWM	FEMA Flood Mitigation	$ 550,000						$ 550,000
SWM	Storm Sewer CIP Lining				$ 150,000	$ 150,000	$ 150,000	$ 450,000
SWM	Storm Sewer Repairs/Replacements				$ 150,000	$ 150,000	$ 150,000	$ 450,000
SWM	Storm Sewer Mapping, Inspection & Cleaning			$ 75,000	$ 75,000	$ 75,000		$ 225,000
SWM	Oakwood Heights CIP Lining	$ 120,000						$ 120,000
SWM	Cambridge Estates Drainage	$ 53,500						$ 53,500
SWM	Gillman Sump Line Collection	$ 20,000						$ 20,000
TIF	TIF District Street Improvements	$ 545,000						$ 545,000
Water	Water Tower #3	$ 70,000			$ 3,000,000			$ 3,070,000
Water	SE Area Watermain Replacement			$ 150,000	$ 150,000	$ 750,000	$ 750,000	$ 1,800,000
Water	Water Tower #1 Painting	$ 587,350						$ 587,350
Water	WTP #2 Filter & Softner Media Replacement				$ 550,000			$ 550,000
Water	Cummings Lane Watermain Connection			$ 400,000				$ 400,000
Water	WTP #1 Filter & Softner Rehabilitation	$ 350,000						$ 350,000
Water	Water Quality Study		$ 85,000					$ 85,000
Water	WTP #2 Brine Tank Clearwell			$ 75,000				$ 75,000
Water	Water Meters	$ 40,500		$ 42,525	$ 44,651	$ 46,884	$ 49,228	$ 223,788
Water	SE Area Watermain Study			$ 30,000				$ 30,000
Water	Leak Detection Study			$ 20,000				$ 20,000
Water	Miscellaneous Water Main Replacement	$ 15,000		$ 20,000	$ 21,000	$ 22,050	$ 23,153	$ 101,203
Water	Water Tower #2 Maintenance	$ 15,000						$ 15,000
Water	Fire Hydrant Replacement	$ 10,000		$ 10,500	$ 11,025	$ 11,576	$ 12,155	$ 55,256
	Project Totals	**$ 9,059,490**	**$ 300,000**	**$ 15,111,439**	**$ 6,389,061**	**$ 6,759,103**	**$ 4,397,739**	**$ 42,016,832**
	Equipment	$ 300,200		$ 315,210	$ 330,971	$ 347,519	$ 364,895	$ 1,658,795
	Building/Property	$ 331,000	$ 25,000	$ 104,550	$ 109,778	$ 115,266	$ 121,030	$ 806,624
	Legal	$ 22,500		$ 25,000	$ 26,250	$ 27,563	$ 28,941	$ 130,253
	Misc. TIF Projects	$ 248,000		$ 251,000				$ 499,000
	Total Capital Expenditure	**$ 9,961,190**	**$ 325,000**	**$ 15,807,199**	**$ 6,856,059**	**$ 7,249,451**	**$ 4,912,605**	**$ 45,111,503**

City Hall
301 Walnut Street

Time Period (years)		Building Envelope						Mechanical				Plumbing		Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Remove & Replace Painted Handrails	Remove & Replace Door & Window Sealant	Remove & Replace Factory Doors & Windows	Remove & Replace 4 Furnaces	Remove & Replace 2-4 Ton Air Conditioners	Remove & Replace 2-5 Ton Air Conditioners	Remove & Replace Bathroom exhaust fans	Remove & Replace Water Heater	Remove & Replace 3 Sanitary Pumps	Total 50 yr. Expenditure	Expenditure per year
0	5													$ -	$ -
5	10				$ 400	$ 1,000		$ 8,000	$ 4,000	$ 4,500	$ 250	$ 500	$ 1,500	$ 20,150	$ 4,030
10	15							$ 8,000	$ 4,000	$ 4,500	$ 250	$ 500	$ 1,500	$ 18,750	$ 3,750
15	20													$ -	$ -
20	25		$ 5,000	$ 16,500										$ 21,500	$ 4,300
25	30	$ 40,000			$ 400	$ 1,000								$ 41,400	$ 8,280
30	35						$ 15,000							$ 15,000	$ 3,000
35	40											$ 500	$ 1,500	$ 2,000	$ 400
40	45							$ 8,000	$ 4,000	$ 4,500	$ 250	$ 500	$ 1,500	$ 18,750	$ 3,750
45	50				$ 400	$ 1,000		$ 8,000	$ 4,000	$ 4,500	$ 250			$ 18,150	$ 3,630
		$ 40,000	$ 5,000	$ 16,500	$ 1,200	$ 3,000	$ 15,000	$ 32,000	$ 16,000	$ 18,000	$ 1,000	$ 2,000	$ 6,000	$ 155,700	$ 3,114

Police Department Administration Building
115 W. Jefferson Street

Time Period (years)		Building Envelope						Mechanical			Plumbing	Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Remove & Replace Factory Doors & Windows	Remove & Replace Door & Window Sealant	Clean & Paint Doors	Remove & Replace Dispatch Rm 8.5 Ton A/C	Remove & Replace Furnace & A/C Units	Remove & Replace Bathroom exhaust fans	Remove & Replace Water Heater	Total 50 yr. Expenditure	Expenditure per year
0	5							$ 25,000	$ 40,000			$ 65,000	$ 13,000
5	10					$ 2,500	$ 3,000				$ 7,500	$ 13,000	$ 2,600
10	15									$ 500		$ 500	$ 100
15	20											$ -	$ -
20	25							$ 25,000	$ 40,000			$ 65,000	$ 13,000
25	30		$ 2,000	$ 15,000		$ 2,500	$ 3,000				$ 7,500	$ 30,000	$ 6,000
30	35	$ 47,050			$ 10,000					$ 500		$ 57,550	$ 11,510
35	40											$ -	$ -
40	45							$ 25,000	$ 40,000			$ 65,000	$ 13,000
45	50					$ 2,500	$ 3,000				$ 7,500	$ 13,000	$ 2,600
		$ 47,050	$ 2,000	$ 15,000	$ 10,000	$ 7,500	$ 9,000	$ 75,000	$ 120,000	$ 1,000	$ 22,500	$ 309,050	$ 6,181

PW East Storage Building
9-1-1 Drive

Time Period (years)		Building Envelope: Steel Panel Bldg Skin	Fascia, Gutters & Downspouts	Steel Roof Panels	Painted Bollards	Remove & Replace Door & Window Sealant	Remove & Replace Ext. Doors & Windows	Mechanical: Natural Gas Furnaces	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5	$ 30,000		$ 30,000				$ 10,000	$ 70,000	$ 14,000
5	10				$ 500	$ 500	$ 1,000		$ 2,000	$ 400
10	15								$ -	$ -
15	20								$ -	$ -
20	25		$ 2,000					$ 10,000	$ 12,000	$ 2,400
25	30								$ -	$ -
30	35	$ 30,000		$ 30,000	$ 500	$ 500	$ 1,000		$ 62,000	$ 12,400
35	40								$ -	$ -
40	45		$ 2,000					$ 10,000	$ 12,000	$ 2,400
45	50								$ -	$ -
		$ 60,000	$ 4,000	$ 60,000	$ 1,000	$ 1,000	$ 2,000	$ 30,000	$ 158,000	$ 3,160

PW West Storage Building
9-1-1 Drive

Time Period (years)		Building Envelope: Steel Panel Bldg Skin	Fascia, Gutters & Downspouts	Steel Roof Panels	Painted Bollards	Remove & Replace Door & Window Sealant	Remove & Replace Ext. Doors & Windows	Mechanical: Natural Gas Furnaces - Garage	Natural Gas Furnaces - Office	Plumbing: Remove & Replace Water Heater	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5	$ 30,000		$ 30,000				$ 10,000	$ 3,000		$ 73,000	$ 14,600
5	10				$ 500	$ 500	$ 1,000			$ 1,500	$ 3,500	$ 700
10	15										$ -	$ -
15	20										$ -	$ -
20	25		$ 2,000					$ 10,000	$ 3,000		$ 15,000	$ 3,000
25	30									$ 1,500	$ 1,500	$ 300
30	35	$ 30,000		$ 30,000	$ 500	$ 500	$ 1,000				$ 62,000	$ 12,400
35	40										$ -	$ -
40	45		$ 2,000					$ 10,000	$ 3,000		$ 15,000	$ 3,000
45	50									$ 1,500	$ 1,500	$ 300
		$ 60,000	$ 4,000	$ 60,000	$ 1,000	$ 1,000	$ 2,000	$ 30,000	$ 9,000	$ 4,500	$ 171,500	$ 3,430

Storage Building
101 - 103 W. Jefferson Street

Time Period (years)		Building Envelope						Mechanical		Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Clean & Paint Doors	Remove & Replace Factory Doors	Remove & Replace Sealants	Repoint Glass Block & Sealant	Natural Gas Furnaces - Garage	Exhaust Fan	Total 50 yr. Expenditure	Expenditure per year
0	5	$ 35,000							$ 2,500	$ 750	$ 38,250	$ 7,650
5	10				$ 300		$ 1,600				$ 1,900	$ 380
10	15										$ -	$ -
15	20		$ 2,000	$ 15,000							$ 17,000	$ 3,400
20	25					$ 10,000		$ 1,500	$ 2,500	$ 750	$ 14,750	$ 2,950
25	30										$ -	$ -
30	35				$ 300		$ 1,600				$ 1,900	$ 380
35	40	$ 35,000									$ 35,000	$ 7,000
40	45								$ 2,500	$ 750	$ 3,250	$ 650
45	50							$ 1,500			$ 1,500	$ 300
		$ 70,000	$ 2,000	$ 15,000	$ 600	$ 10,000	$ 3,200	$ 3,000	$ 7,500	$ 2,250	$ 113,550	$ 2,271

Well House 06
9-1-1 Drive

Time Period (years)		Building Envelope: Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	EPDM Roof	Clean & Paint Doors	Remove & Replace Sealants	Factory Window & Louver	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5							$ -	$ -
5	10				$ 250	$ 100		$ 350	$ 70
10	15							$ -	$ -
15	20							$ -	$ -
20	25	$ 7,500	$ 150	$ 2,500			$ 500	$ 10,650	$ 2,130
25	30							$ -	$ -
30	35				$ 250	$ 100		$ 350	$ 70
35	40							$ -	$ -
40	45							$ -	$ -
45	50	$ 7,500	$ 150	$ 2,500				$ 10,150	$ 2,030
		$ 15,000	$ 300	$ 5,000	$ 500	$ 200	$ 500	$ 21,500	$ 430

Well House 07
9-1-1 Drive

Time Period (years)		Building Envelope: Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	EPDM Roof	Clean & Paint Doors	Remove & Replace Sealants	Factory Window & Louver	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5							$ -	$ -
5	10				$ 250	$ 100		$ 350	$ 70
10	15							$ -	$ -
15	20							$ -	$ -
20	25	$ 7,500	$ 150	$ 2,500			$ 500	$ 10,650	$ 2,130
25	30							$ -	$ -
30	35				$ 250	$ 100		$ 350	$ 70
35	40							$ -	$ -
40	45							$ -	$ -
45	50							$ -	$ -
		$ 7,500	$ 150	$ 2,500	$ 500	$ 200	$ 500	$ 11,350	$ 227

Well House 08
9-1-1 Drive

Time Period (years)		Building Envelope: Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	EPDM Roof	Clean & Paint Doors	Remove & Replace Sealants	Factory Window & Louver	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5							$ -	$ -
5	10				$ 250	$ 100		$ 350	$ 70
10	15							$ -	$ -
15	20							$ -	$ -
20	25	$ 7,500	$ 150	$ 2,500			$ 500	$ 10,650	$ 2,130
25	30							$ -	$ -
30	35				$ 250	$ 100		$ 350	$ 70
35	40							$ -	$ -
40	45							$ -	$ -
45	50							$ -	$ -
		$ 7,500	$ 150	$ 2,500	$ 500	$ 200	$ 500	$ 11,350	$ 227

Public Works Facility
107 Legion Road

Time Period (years)		Building Envelope								Mechanical			Plumbing	Total Expenditure	
		Tuckpoint Brick Masonry	Remove & Replave Vinyl Siding	Steel Panel Bldg Skin	Fascia, Gutters & Downspouts	Metal Roof Panels	Remove & Replace Sealants	Remove & Replace Factory Doors & Windows	Clean & Paint Doors	Remove & Replace 2 NG Tube Heaters	Remove & Replace 2 80k BTU Furnaces	Remove & Replace 1 2.5T A/C Unit	Remove & Replace Water Heater	Total 50 yr. Expenditure	Expenditure per year
0	5					$ 25,000								$ 25,000	$ 5,000
5	10						$ 200		$ 250	$ 6,000				$ 6,450	$ 1,290
10	15			$ 50,000							$ 5,000	$ 6,000	$ 1,500	$ 62,500	$ 12,500
15	20													$ -	$ -
20	25													$ -	$ -
25	30	$ 15,000	$ 1,000		$ 2,000		$ 200	$ 1,500	$ 250					$ 19,950	$ 3,990
30	35													$ -	$ -
35	40													$ -	$ -
40	45													$ -	$ -
45	50													$ -	$ -
		$ 15,000	$ 1,000	$ 50,000	$ 2,000	$ 25,000	$ 400	$ 1,500	$ 500	$ 6,000	$ 5,000	$ 6,000	$ 1,500	$ 113,900	$ 2,278

Well House 11

Time Period (years)		Building Envelope: Tuckpoint Brick Masonry	Paint Exterior	Fascia, Gutters & Downspouts	EPDM Roof	Clean & Paint Doors	Remove & Replace Sealants	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5							$ -	$ -
5	10					$ 250	$ 50	$ 300	$ 60
10	15							$ -	$ -
15	20							$ -	$ -
20	25	$ 6,400	$ 1,000	$ 150	$ 2,500			$ 10,050	$ 2,010
25	30							$ -	$ -
30	35					$ 250	$ 100	$ 350	$ 70
35	40							$ -	$ -
40	45							$ -	$ -
45	50							$ -	$ -
		$ 6,400	$ 1,000	$ 150	$ 2,500	$ 500	$ 150	$ 10,700	$ 214

Well House 12

Time Period (years)		Building Envelope: Tuckpoint Brick Masonry	Paint Exterior	Fascia, Gutters & Downspouts	EPDM Roof	Clean & Paint Doors	Remove & Replace Sealants	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5							$ -	$ -
5	10					$ 250	$ 50	$ 300	$ 60
10	15							$ -	$ -
15	20							$ -	$ -
20	25	$ 6,400	$ 1,000	$ 150	$ 2,500			$ 10,050	$ 2,010
25	30							$ -	$ -
30	35					$ 250	$ 100	$ 350	$ 70
35	40							$ -	$ -
40	45							$ -	$ -
45	50							$ -	$ -
		$ 6,400	$ 1,000	$ 150	$ 2,500	$ 500	$ 150	$ 10,700	$ 214

Water Treatment Plant #1
201 N. Main Street

Time Period (years)		Building Envelope						Mechanical		Plumbing	Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Clean & Paint Doors	Remove & Replace Sealants	Remove & Replace Factory Doors & Windows	Remove & Replace NG Unit Heater	Remove & Replace NG Wall Heater	Remove & Replace Water Heater	Total 50 yr. Expenditure	Expenditure per year
0	5										$ -	$ -
5	10			$ 11,000	$ 1,000	$ 200					$ 12,200	$ 2,440
10	15										$ -	$ -
15	20	$ 28,000						$ 3,000	$ 2,000	$ 7,500	$ 40,500	$ 8,100
20	25		$ 500								$ 500	$ 100
25	30										$ -	$ -
30	35				$ 1,000	$ 200	$ 1,500				$ 2,700	$ 540
35	40							$ 3,000	$ 2,000	$ 7,500	$ 12,500	$ 2,500
40	45										$ -	$ -
45	50										$ -	$ -
		$ 28,000	$ 500	$ 11,000	$ 2,000	$ 400	$ 1,500	$ 6,000	$ 4,000	$ 15,000	$ 68,400	$ 1,368

Water Treatment Plant #2
1760 Constitution

Time Period (years)		Building Envelope						Mechanical			Plumbing		Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	EPDM Roof	Clean & Paint Doors	Remove & Replace Sealants	Remove & Replace Factory Doors & Windows	Remove & Replace Workroom Electric Heater	Remove & Replace Office Electric Heater/AC Unit	Remove & Replace Plant Dehumidifier	Remove & Replace 12 Gallon Water Heater	Remove & Replace 80 Gallon Water Heater	Total 50 yr. Expenditure	Expenditure per year
0	5							$ 1,000		$ 50,000	$ 1,000	$ 7,500	$ 59,500	$ 11,900
5	10	$ 38,000			$ 1,000	$ 200							$ 39,200	$ 7,840
10	15												$ -	$ -
15	20												$ -	$ -
20	25		$ 1,600	$ 38,750					$ 6,000		$ 1,000	$ 7,500	$ 54,850	$ 10,970
25	30							$ 1,000		$ 50,000			$ 51,000	$ 10,200
30	35				$ 1,000	$ 200	$ 1,500						$ 2,700	$ 540
35	40												$ -	$ -
40	45								$ 6,000		$ 1,000	$ 7,500	$ 14,500	$ 2,900
45	50												$ -	$ -
		$ 38,000	$ 1,600	$ 38,750	$ 2,000	$ 400	$ 1,500	$ 2,000	$ 12,000	$ 100,000	$ 3,000	$ 22,500	$ 221,750	$ 4,435

Generator Building

Time Period (years)		Building Envelope						Total Expenditure	
		Tuckpoint Brick Masonry	Paint Exterior	Fascia, Gutters & Downspouts	EPDM Roof	Clean & Paint Doors	Remove & Replace Sealants	Total 50 yr. Expenditure	Expenditure per year
0	5							$ -	$ -
5	10		$ 1,000			$ 250	$ 50	$ 1,300	$ 260
10	15							$ -	$ -
15	20							$ -	$ -
20	25							$ -	$ -
25	30	$ 8,000	$ 1,000	$ 150	$ 2,500			$ 11,650	$ 2,330
30	35					$ 250	$ 100	$ 350	$ 70
35	40							$ -	$ -
40	45							$ -	$ -
45	50							$ -	$ -
		$ 8,000	$ 2,000	$ 150	$ 2,500	$ 500	$ 150	$ 13,300	$ 266

Waste Water Treatment Plant #1 - Control Building
700 Woodland Trail

Time Period (years)		Building Envelope						Mechanical	Plumbing	Total Expenditure	
		Tuckpoint Brick Masonry	Remove & Replace Gutters & Downspouts	Replace Wood Siding & Fascia	Asphalt Shingles	Clean & Paint Handrails	Clean & Paint Windows & Doors	Remove & Replace 165k BTU Furnace	Remove & Replace 10 Gallon Water Heater	Total 50 yr. Expenditure	Expenditure per year
0	5	$ 12,000	$ 1,000	$ 5,000	$ 4,000		$ 1,500	$ 4,000	$ 1,000	$ 28,500	$ 5,700
5	10					$ 500				$ 500	$ 100
10	15									$ -	$ -
15	20									$ -	$ -
20	25									$ -	$ -
25	30							$ 4,000	$ 1,000	$ 5,000	$ 1,000
30	35				$ 4,000		$ 1,500			$ 5,500	$ 1,100
35	40					$ 500				$ 500	$ 100
40	45									$ -	$ -
45	50									$ -	$ -
		$ 12,000	$ 1,000	$ 5,000	$ 8,000	$ 1,000	$ 3,000	$ 8,000	$ 2,000	$ 40,000	$ 800

		Waste Water Treatment Plant #1 - Filter Building 700 Woodland Trail								
		Building Envelope						Mechanical	Total Expenditure	
Time Period (years)		Steel Panel Bldg Skin	Fascia, Gutters & Downspouts	Metal Roof Panels	Painted Bollards	Remove & Replace Factory Doors & Windows	Clean & Paint Doors	Remove & Replace Unit Heaters	Total 50 yr. Expenditure	Expenditure per year
0	5	$ 35,000		$ 25,000				$ 8,000	$ 68,000	$ 13,600
5	10				$ 500		$ 500		$ 1,000	$ 200
10	15								$ -	$ -
15	20		$ 1,000						$ 1,000	$ 200
20	25								$ -	$ -
25	30								$ -	$ -
30	35				$ 500	$ 7,500	$ 500		$ 8,500	$ 1,700
35	40								$ -	$ -
40	45								$ -	$ -
45	50								$ -	$ -
		$ 35,000	$ 1,000	$ 25,000	$ 1,000	$ 7,500	$ 1,000	$ 8,000	$ 78,500	$ 1,570

Time Period (years)		Waste Water Treatment Plant #1 - Digester & Equipment Building 700 Woodland Trail						
		Building Envelope					Total Expenditure	
		Tuckpoint Brick Masonry	Metal Scuppers & Downspouts	Flat Roof (type unknown)	Replace Wood Siding & Fascia	Clean & Paint Windows & Doors	Total 50 yr. Expenditure	Expenditure per year
0	5	$ 12,000	$ 1,000	$ 15,000	$ 5,000	$ 1,500	$ 34,500	$ 6,900
5	10						$ -	$ -
10	15						$ -	$ -
15	20						$ -	$ -
20	25						$ -	$ -
25	30						$ -	$ -
30	35						$ -	$ -
35	40						$ -	$ -
40	45						$ -	$ -
45	50						$ -	$ -
		$ 12,000	$ 1,000	$ 15,000	$ 5,000	$ 1,500	$ 34,500	$ 690

Waste Water Treatment Plant #2 - Control & Office Building
955 Ernest Street

Time Period (years)		Building Envelope						Mechanical				Plumbing	Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Remove & Replace Factory Doors & Windows	Remove & Replace Sealants	Clean & Paint Doors	Remove & Replace Unit Heaters	Remove & Replace Baseboard Heaters	Remove & Replace Electric Furnace	Remove & Replace 4T A/C	Remove & Replace 50 Gallon Water Heater	Total 50 yr. Expenditure	Expenditure per year
0	5							$ 1,500	$ 2,500			$ 3,000	$ 7,000	$ 1,400
5	10					$ 550	$ 200						$ 750	$ 150
10	15									$ 2,500	$ 3,000		$ 5,500	$ 1,100
15	20												$ -	$ -
20	25												$ -	$ -
25	30			$ 10,000									$ 10,000	$ 2,000
30	35	$ 30,000	$ 1,000		$ 10,000							$ 3,000	$ 44,000	$ 8,800
35	40					$ 550	$ 200						$ 750	$ 150
40	45												$ -	$ -
45	50												$ -	$ -
		$ 30,000	$ 1,000	$ 10,000	$ 10,000	$ 1,100	$ 400	$ 1,500	$ 2,500	$ 2,500	$ 3,000	$ 6,000	$ 68,000	$ 1,360

Waste Water Treatment Plant #2 - Screening Building
955 Ernest Street

Time Period (years)		Building Envelope						Mechanical		Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Remove & Replace Factory Doors & Windows	Remove & Replace Sealants	Clean & Paint Doors	Remove & Replace 4 Unit Heaters	Remove & Replace Exhaust Fans & Louvers	Total 50 yr. Expenditure	Expenditure per year
0	5									$ -	$ -
5	10					$ 550	$ 500			$ 1,050	$ 210
10	15							$ 32,000	$ 2,500	$ 34,500	$ 6,900
15	20									$ -	$ -
20	25									$ -	$ -
25	30			$ 5,000						$ 5,000	$ 1,000
30	35	$ 36,000	$ 500		$ 10,000			$ 32,000	$ 2,500	$ 81,000	$ 16,200
35	40					$ 550	$ 500			$ 1,050	$ 210
40	45									$ -	$ -
45	50									$ -	$ -
		$ 36,000	$ 500	$ 5,000	$ 10,000	$ 1,100	$ 1,000	$ 64,000	$ 5,000	$ 122,600	$ 2,452

Waste Water Treatment Plant #2 - Press Building 955 Ernest Street																			
		Building Envelope										Mechanical				Total Expenditure			
Time Period (years)		Tuckpoint Brick Masonry		Fascia, Gutters & Downspouts		Asphalt Shingles		Remove & Replace Factory Doors & Windows		Remove & Replace Sealants	Clean & Paint Doors	Remove & Replace 2 Unit Heaters		Remove & Replace Exhaust Fans & Louvers		Total 50 yr. Expenditure		Expenditure per year	
0	5															$	-	$	-
5	10									$ 100	$ 200					$	300	$	60
10	15											$	4,000	$	2,500	$	6,500	$	1,300
15	20															$	-	$	-
20	25															$	-	$	-
25	30					$	8,000									$	8,000	$	1,600
30	35	$	25,000	$	500			$	2,000			$	4,000	$	2,500	$	34,000	$	6,800
35	40									$ 100	$ 200					$	300	$	60
40	45															$	-	$	-
45	50															$	-	$	-
		$	25,000	$	500	$	8,000	$	2,000	$ 200	$ 400	$	8,000	$	5,000	$	49,100	$	982

		Waste Water Treatment Plant #2 - RAS Building 955 Ernest Street															
		Building Envelope										Mechanical		Total Expenditure			
Time Period (years)		Tuckpoint Brick Masonry		Fascia, Gutters & Downspouts		Asphalt Shingles		Remove & Replace Factory Doors & Windows		Remove & Replace Sealants	Clean & Paint Doors	Remove & Replace 2 Unit Heaters		Remove & Replace Exhaust Fans & Louvers		Total 50 yr. Expenditure	Expenditure per year
0	5															$ -	$ -
5	10									$ 550	$ 500					$ 1,050	$ 210
10	15											$ 4,000		$ 2,500		$ 6,500	$ 1,300
15	20															$ -	$ -
20	25															$ -	$ -
25	30					$ 6,600										$ 6,600	$ 1,320
30	35	$ 21,100		$ 500				$ 4,000				$ 4,000		$ 2,500		$ 32,100	$ 6,420
35	40									$ 550	$ 500					$ 1,050	$ 210
40	45															$ -	$ -
45	50															$ -	$ -
		$ 21,100		$ 500		$ 6,600		$ 4,000		$ 1,100	$ 1,000	$ 8,000		$ 5,000		$ 47,300	$ 946

Time Period (years)		Waste Water Treatment Plant #2 - Chlorine & Storage Building 955 Ernest Street								Total Expenditure	
		Building Envelope						Mechanical			
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Remove & Replace Factory Doors & Windows	Remove & Replace Sealants	Clean & Paint Doors	Remove & Replace 2 Unit Heaters	Remove & Replace Exhaust Fans & Louvers	Total 50 yr. Expenditure	Expenditure per year
0	5									$ -	$ -
5	10					$ 550	$ 500			$ 1,050	$ 210
10	15							$ 4,000	$ 2,500	$ 6,500	$ 1,300
15	20									$ -	$ -
20	25									$ -	$ -
25	30			$ 2,500						$ 2,500	$ 500
30	35	$ 18,000	$ 100		$ 2,000			$ 4,000	$ 2,500	$ 26,600	$ 5,320
35	40					$ 550	$ 500			$ 1,050	$ 210
40	45									$ -	$ -
45	50									$ -	$ -
		$ 18,000	$ 100	$ 2,500	$ 2,000	$ 1,100	$ 1,000	$ 8,000	$ 5,000	$ 37,700	$ 754

Time Period (years)		Waste Water Treatment Plant #2 - Blower Building 955 Ernest Street															
		Building Envelope										Mechanical				Total Expenditure	
		Tuckpoint Brick Masonry		Fascia, Gutters & Downspouts		Asphalt Shingles		Remove & Replace Factory Doors & Windows		Remove & Replace Sealants	Clean & Paint Doors	Remove & Replace 2 Unit Heaters		Remove & Replace Exhaust Fans & Louvers		Total 50 yr. Expenditure	Expenditure per year
0	5															$ -	$ -
5	10									$ 550	$ 500					$ 1,050	$ 210
10	15											$ 4,000		$ 2,500		$ 6,500	$ 1,300
15	20															$ -	$ -
20	25															$ -	$ -
25	30					$ 2,500										$ 2,500	$ 500
30	35	$ 18,000		$ 100				$ 2,000				$ 4,000		$ 2,500		$ 26,600	$ 5,320
35	40									$ 550	$ 500					$ 1,050	$ 210
40	45															$ -	$ -
45	50															$ -	$ -
		$ 18,000		$ 100		$ 2,500		$ 2,000		$ 1,100	$ 1,000	$ 8,000		$ 5,000		$ 37,700	$ 754

Fire Department Building
200 N. Wilmore

Time Period (years)		Building Envelope: Tuckpoint Brick Masonry	Steel Panel Bldg Skin	Fascia, Gutters & Downspouts	Remove & Replace Factory Doors & Windows	Remove & Replace Sealants	Paint Bollards	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5							$ -	$ -
5	10					$ 5,000	$ 2,000	$ 7,000	$ 1,400
10	15							$ -	$ -
15	20							$ -	$ -
20	25							$ -	$ -
25	30		$ 40,000	$ 6,000		$ 5,000		$ 51,000	$ 10,200
30	35						$ 2,000	$ 2,000	$ 400
35	40	$ 35,000						$ 35,000	$ 7,000
40	45				$ 72,000			$ 72,000	$ 14,400
45	50							$ -	$ -
		$ 35,000	$ 40,000	$ 6,000	$ 72,000	$ 10,000	$ 4,000	$ 167,000	$ 3,340

Fire Department Building
200 N. Wilmore

Time Period (years)		Mechanical: 3 NG High Efficiency Furnaces	R&R 2 - 3 Ton A/C Units	R&R 1 - 4 Ton A/C Units	R&R 3 Thru-wall Packaged Terminal A/C	R&R 6 NG Radiant Tube Heaters	R&R Outside Air Unit	R&R Vehicle Exhaust System	R&R Exhaust System	Plumbing: Remove & Replace 40 Gallon Water Heater	Remove & Replace 40 Gallon Water Heater	Total Expenditure: Total 50 yr. Expenditure	Expenditure per year
0	5	8000	$ 3,000	$ 4,000		$ 15,000	$ 18,000	$ 2,000	$ 2,500	$ 1,500.0		$ 54,000	$ 10,800
5	10				$ 4,500							$ 4,500	$ 900
10	15		$ 3,000								$ 1,500.0	$ 4,500	$ 900
15	20	4000										$ 4,000	$ 800
20	25	8000	$ 3,000	$ 4,000								$ 15,000	$ 3,000
25	30				$ 4,500	$ 15,000	$ 18,000	$ 2,000	$ 2,500			$ 42,000	$ 8,400
30	35		$ 3,000									$ 3,000	$ 600
35	40	4000										$ 4,000	$ 800
40	45	8000	$ 3,000	$ 4,000								$ 15,000	$ 3,000
45	50				$ 4,500							$ 4,500	$ 900
		$ 32,000	$ 15,000	$ 12,000	$ 13,500	$ 30,000	$ 36,000	$ 4,000	$ 5,000	$ 1,500	$ 1,500	$ 150,500	$ 3,010

Glendale Cemetery Building
307 Candlewood Drive

Time Period (years)		Building Envelope						Mechanical	Total Expenditure	
		Tuckpoint Brick Masonry & Paint	Fascia, Gutters & Downspouts	Asphalt Shingles	Remove & Replace Factory Entry & Garage Door	Remove & Replace Sealants	Repoint Glass Block Window	Remove & Replace 500W Heater	Total 50 yr. Expenditure	Expenditure per year
0	5								$ -	$ -
5	10	$ 1,000				$ 250			$ 1,250	$ 250
10	15							$ 1,000	$ 1,000	$ 200
15	20			$ 2,000					$ 2,000	$ 400
20	25								$ -	$ -
25	30		$ 500						$ 500	$ 100
30	35	$ 8,000			$ 2,000		$ 100		$ 10,100	$ 2,020
35	40								$ -	$ -
40	45								$ -	$ -
45	50								$ -	$ -
		$ 9,000	$ 500	$ 2,000	$ 2,000	$ 250	$ 100	$ 1,000	$ 14,850	$ 297

Booster Pump Station
100 Hillcrest Drive

Time Period (years)		Building Envelope					Mechanical		Total Expenditure	
		Tuckpoint Brick Masonry	Fascia, Gutters & Downspouts	Asphalt Shingles	Remove & Replace Sealants	Clean & Paint Doors	Remove & Replace Exhaust Fans & Louvers	Remove & Replace 750W Heater	Total 50 yr. Expenditure	Expenditure per year
0	5								$ -	$ -
5	10				$ 50	$ 500	1000	$ 1,000	$ 2,550	$ 510
10	15								$ -	$ -
15	20								$ -	$ -
20	25		$ 400	$ 1,000					$ 1,400	$ 280
25	30								$ -	$ -
30	35	$ 10,000			$ 50	$ 500	1000	$ 1,000	$ 12,550	$ 2,510
35	40								$ -	$ -
40	45								$ -	$ -
45	50								$ -	$ -
		$ 10,000	$ 400	$ 1,000	$ 100	$ 1,000	$ 2,000	$ 2,000	$ 16,500	$ 330