



CAPITAL IMPROVEMENT PROGRAM

2018 – 2027

Village of Wilmette

Ten Year Capital Improvement Program

The Ten Year Capital Improvement Program (CIP) is a planning tool for the Village that seeks to identify major capital projects and a corresponding funding source for projects that are \$10,000 or more.

The Ten Year Capital Improvement Plan is prepared by staff and reviewed by the Village Board as the initial step toward preparing the annual budget. The Plan is generally amended during the budget process as determinations are made for items to be moved forward or to be deferred based on current information.

The CIP is divided into the following sections:

Public Facilities

7 facilities

The Village funds significant facility improvements through debt financing. Village facilities include Village Hall, Fire Stations 26 & 27, Police Station, & Public Works Village Yard, the Storm Water Pumping Station (SWPS), and Water Plant. Improvements at the Storm Water Pumping Station and Water Plant are identified under their respective CIP sections.

Equipment

The Equipment section lists those capital equipment items that need to be repaired, replaced or acquired new over the next 10 years. This section addresses equipment for the Village Hall, Police Station, Fire Station and Village Yard.

Information Technology

In FY 2001, the Information Services Department retained the services of System Development Integration, Inc. (SDI) to prepare a strategic information technology business plan. The plan, which is the basis for many of the items listed in this section, has been used as a guide to implement numerous improvements to the Village's wide area network (WAN) and computer systems. To date, all of the plan's recommendations have been implemented. Village staff worked with the Administration Committee in drafting an updated strategic plan which will guide future IT projects.

Streets

89.5 miles

The Village of Wilmette's street system consists of 89.5 miles of asphalt, concrete and brick streets. From 1999 to 2008, the Village funded an accelerated road program at \$3.1 million per year (\$2.35 million in general obligation bonds and \$750,000 in State Motor Fuel Tax (MFT) funds with the goal of bringing the average pavement condition from poor to good. In 2016, the Village Board committed to an annual \$2 million road program. The Village conducts a pavement inventory study at least every five years and has implemented a crack sealing program to prevent degradation of the streets.

Vehicles**146 vehicles in the fleet**

The vehicle section includes an inventory of all of the Village vehicles which is subdivided by public works, police and fire vehicles. The detail page for each vehicle to be replaced between 2018 – 2022 provides a picture of the vehicle, historical cost information, a description of how the vehicle is used, and its life expectancy. Administrative vehicles and other miscellaneous vehicles are not listed in the CIP as they are replaced with used vehicles that are rotated into the fleet.

Sewer Improvements**146.88 miles of sewer**

Beginning in 1990, the Village undertook significant sewer improvements to address areas in which a large number of basement back-ups occur during heavy rain events. To remedy this problem, relief sewers were installed. Relief sewer improvements have been funded through Illinois Environmental Protection Agency low interest loans. In addition to major sewer projects, the Village annually budgets for the maintenance and repair of the sewer system, including sewer lining and rehab and sewer main repairs. In 2012 the Engineering Department conducted a Sewer System Modeling study which provided several recommendations for sewer improvements. Following this, the Village completed on a \$24 million Stormwater Action Plan financed through bond proceeds.

Facility and equipment improvements at the Storm Water Pumping Station (SWPS) are located in this section.

Water Improvements**105 miles of water main**

The Village's Water Plant serves a population of more than 104,000 in the communities of Wilmette, Glenview, Golf, Kenilworth, and portions of Prospect Heights with potable water. Maintenance of the plant facility and distribution system is essential to the water utility's operation.

Facility and equipment improvements at the Water Plant can be found in this section.

Village of Wilmette
Ten Year Capital Improvements Program

IMPROVEMENT CATEGORY	2017	2018	2019	2020 & 2021	Five Year Total	Ten Year Total
Public Facilities	413,750	770,200	1,854,000	52,500	3,090,450	25,135,450
Equipment	144,000	287,150	-	-	431,150	451,150
Information Technology	127,750	38,000	14,000	42,000	221,750	331,750
Streets, Sidewalks & Alleys	4,659,700	15,822,138	13,287,617	13,331,935	47,101,390	67,621,717
Vehicles	1,538,900	1,136,250	1,389,250	1,904,500	5,968,900	11,917,150
Sewer Improvements	4,497,770	4,233,560	33,343,050	55,030,970	97,105,350	108,850,850
Water Improvements	5,518,594	5,654,162	2,428,531	7,471,969	21,073,256	49,491,256
Totals - All Categories	16,900,464	27,941,460	52,316,448	77,833,874	174,992,246	263,799,323

Total Critical Projects	11,020,874	15,263,970	6,020,813	9,366,339	41,671,996
Total Recommended Projects	5,495,290	9,746,890	44,065,635	62,365,035	121,672,850
Total Contingent Projects	384,300	2,930,600	2,230,000	6,102,500	11,647,400
Total	16,900,464	27,941,460	52,316,448	77,833,874	174,992,246

Public Facilities – Ten Year Capital Improvement Program

The Public Facilities section of the Capital Improvement Program (CIP) identifies proposed improvements to the following Village facilities: Village Hall, Police Station, Fire Stations and Village Yard. Proposed improvements may include repair, replacement, or the rehabilitation of Village facilities.

As with other sections of the CIP, these improvements are targeted for specific years and are financed through various methods such as General Fund operating revenues, grants, or bond proceeds.

Each project in the CIP is categorized by the requesting department as follows:

Critical- The project must be completed in the year recommended due to safety or operational needs or as mandated by law.

Recommended- The project will significantly improve operations or safety. The project is strongly recommended for funding in the year recommended or the year after.

Contingent on Funding- The project would be a benefit to the Village and improve service levels but is only recommended if funds are available.

The following improvements are proposed for 2018:

Improvement	Cost of Improvement	Funding Source	This Project is:
Roofing	180,250	Operating	Critical
Garage Floor Rehabilitation	101,000	Operating	Recommended
Garage Floor Coating	36,000	Operating	Recommended
Village Hall Server Room HVAC	17,500	Operating	Recommended
Village Yard Server Room HVAC	11,000	Operating	Recommended
Parking Lot Restoration	68,000	Contingent	Recommended
Total	\$413,750		

**Ten Year Capital Improvement Program
Public Facilities Summary**

Facility Improvements	Page	This Project is:	2018	2019	2020	2021 & 2022	Five- Year Total	2023-2027	Ten-Year Total	Funding
VILLAGE WIDE										
Roofing	1	Critical	180,250	407,900	-	-	588,150	-	588,150	Operating
Security Enhancements	3	Contingent	-	25,000	37,500	22,500	85,000	-	85,000	Operating
VILLAGE HALL										
Garage Floor Coating	5	Rec.	36,000	80,000	-	-	116,000	-	116,000	Operating
Village Hall Server Room HVAC	7	Rec.	17,500	-	-	-	17,500	-	17,500	Operating
Carpeting Replacement	9	Rec.	-	33,000	35,000	30,000	98,000	-	98,000	Operating
Garage Ramp Replacement	11	Rec.	-	19,800	-	-	19,800	-	19,800	Operating
Parking Lot Restoration	12	Contingent	68,000	-	-	-	68,000	-	68,000	Operating
Interior Painting	13	Contingent	-	70,000	-	-	70,000	-	70,000	Operating
Village Hall Facility Improvements	14	Contingent	-	-	1,675,000	-	1,675,000	-	1,675,000	Bond
POLICE DEPARTMENT										
Window Replacement	15	Rec.	-	-	40,000	-	40,000	-	40,000	Operating
Police Department Facility Improvements	N/A	Contingent	-	-	-	-	-	22,000,000	22,000,000	Bond
FIRE DEPARTMENT										
Garage Floor Rehabilitation	17	Rec.	101,000	-	-	-	101,000	-	101,000	Operating
Fire Station #27 Boiler Replacement	19	Rec.	-	118,000	-	-	118,000	-	118,000	Operating
Fire Station #27 Window Replacement	20	Contingent	-	-	50,000	-	50,000	-	50,000	Operating
Fire Stations Facility Study	N/A	Contingent	-	-	-	-	-	45,000	45,000	Operating
VILLAGE YARD										
Server Room HVAC	21	Rec.	11,000	-	-	-	11,000	-	11,000	Operating
HVAC Compressor Replacement	23	Rec.	-	16,500	16,500	-	33,000	33,000	66,000	Operating
Total			413,750	770,200	1,854,000	52,500	3,090,450	22,045,000	25,135,450	

Proposed Financing	2018	2019	2020	2021 & 2022	Five- Year Total	2023-2027	Ten-Year Total
General Fund- Operations	413,750	362,300	179,000	52,500	827,300	45,000	872,300
General Fund- Debt Financing	-	407,900	1,675,000	-	2,263,150	22,000,000	24,263,150
Grant Financing	-	-	-	-	-	-	-
Total	413,750	770,200	1,854,000	52,500	3,090,450	22,045,000	25,135,450

Project Rating

Critical	180,250	407,900	-	-	588,150	-	588,150
Recommended	165,500	267,300	91,500	30,000	554,300	-	554,300
Contingent	68,000	95,000	1,762,500	22,500	1,948,000	22,045,000	23,993,000
Total	413,750	770,200	1,854,000	52,500	3,090,450	22,045,000	25,135,450

Roofing (excludes C.P. Dubbs Water Plant and Water Pumping Facilities)

Public Facilities–Village-Wide

		2018	\$180,250	Operating
		2019	\$407,900	Operating
X	Critical			
-	Recommended			
-	Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

2017 - \$630,000 at Village Hall

Project Description & Justification

Weathering of roofs requires annual maintenance and repair in order to ensure their integrity. In addition to the routine annual maintenance, a roofing consultant is retained to assess the condition of the roofs at various Village facilities.

FY 2018 - \$180,250: Re-roofing of the Historical Museum. In July 2016, the Village hired a consultant to conduct a roof condition survey for all facilities. The Historical Museum roof was rated fair to poor condition with recommended replacement in 2018. The existing roof is composed of the original historical structure (i.e. gabled roofs with a central low slope section) to the east and a more modern addition to the west. The roof structure was rated in fair to poor condition attributed to cracking, splitting of the granular roof membrane and shingles, particularly in valley sections, sheet metal flashing deterioration around the chimney, and visible ponding of water in several areas where there is poor slope to roof edge scuppers. Several temporary patch repairs, scheduled over the years, were also observed to be in deteriorating condition.

FY 2019 - \$407,900: Re-roofing the Public Works truss garage and flat portions over the department storage areas. The truss garage roof is recommended for replacement in 2019 based on findings from a survey conducted by a consultant in July 2016. The existing roof has reached the end of its service life, there are several areas that have already failed (i.e. displacement of cap sheet, open laps in the field plies, gaps below flange– entry point for water) and should be replaced if the building is to be retained.

Project Update

Budget amounts were updated from a roof survey conducted in July 2016. Budget prices reflect a 3% increase for labor and material costs. The annual \$20,000 in roof maintenance expense is now included in the annual budget and was removed from the CIP.

Project Alternative

If roof replacements are not completed, the roofs will continue to deteriorate resulting in leaks which could cause mold and structural damage. As an alternate option, the Public Works truss garage could be rehabilitated for approximately half the cost of a new roof installation; albeit, with a shorter warranty period (15 to 20-years) as compared to a new roof (30-years). Staff will also consider "green" roofs where applicable, however, it is anticipated that the green roof cost would be 100% greater than a conventional style roof. Temporary repairs are not recommended on the barrel truss roof at the Village Yard and Village Hall roofs because of their respective ages. Temporary repairs are possible for the Historical Museum roof when active leaks develop. Additionally, the truss roof at the Village Yard could be rehabilitated and re-sealed (providing 15-20 additional years) at a projected savings of 50% as compared to cost of a new installation.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	All maintenance expenditures are included in various accounts in 11342035, approximately \$20,000 annually
Personnel Costs	None
Training Costs	None

Security Enhancements	2019	\$25,000	Operating
Public Facilities–Village-Wide	2020	\$37,500	
	2021	\$22,500	
- Critical			
- Recommended			
X Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

In response to concerns presented by recent events in municipal buildings throughout the country, the Police Department performed a security assessment of Village facilities. The assessment provided a number of recommendations to improve the security of the facility as well as the security of Village employees and customers.

2019-Installation of a video camera system at the east and north gates of the Public Works facility. All after-hours activity at the Public Works facility would be digitally recorded and dispatch personnel would be able to monitor live activity at the facility. This request is for \$25,000.

2020- Installation of a card reader system at the Public Works facility coincides with gate replacement to replace the current punch code system for the entrance gates. In addition to the gates, the main entrance to the facility would also have a reader installed to control access to the building. Employees would be required to swipe a card through a magnetic reader that would activate the automatic gate opener or unlock the entrance doors. This request is for \$37,500.

2021- Installation of security cameras for the interior and exterior of the Metra Station to deter vandalism. Since 2006, the Village has experienced 30 cases of graffiti and vandalism both in the interior and exterior of the Metra Station. One of the most costly acts included graffiti etched into most of the station windows, which had a replacement cost of \$10,000. After reviewing this problem with the Police Department, it was suggested that security cameras be installed as a deterrent and a mechanism to assist in the apprehension of offenders. The frequency of the illegal activities increases during the winter months when the station is open longer hours and during times when the ticket agent is absent. This security system will not be monitored by the Police Department, but it will record activity for the Police Department's use during investigations. This request is for \$22,500.

Project Update

This project has been deferred for one year as staff will look to explore and assess alternate vendors.

Project Alternative

Delay the project to future years.

Operating Budget Impact

Is this purchase ____ *routine* or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs	\$1,000 per year
Personnel Costs	None
Training Costs	None

Garage Floor Coating	2018	\$36,000	Operating
	2019	\$80,000	

Public Facilities

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost
1973

Funding History
N/A



[Public Works Facility-Wash Bay]
\$36,000



[Village Hall Garage Floor]
\$80,000

Project Description & Justification

This project will cover the cost to install a 3/16-inch thick epoxy coating over the existing floor in the garage areas at the Public Works Facility – Wash Bay (scheduled for 2018) and the Village Hall (scheduled for 2019). The floor at the Public Works Facility– Wash Bay (manual and automated sides) is original to its construction in 2009-2010, however, the floor was never coated and has been exposed to premature aging and wear and tear from vehicle washing and salt residue. By comparison, the garage floor at Village Hall is original to the building construction and shows signs of sprawling and cracking and the epoxy coating will temper the rate at which the floor is deteriorating and extend its useful life.

Project Update

This project has been deferred from 2015 to 2019 (Village Hall) and the projected cost has increased by \$13,000 based on the most recent price quotes, attributed rises in labor, equipment and materials.

Project Alternative

The alternative is to phase in portions of the floors in smaller sections and over several years. However, this option would be more costly and deferring this project until later years, will increase the rate of deterioration and shorten the life of the floors.

Operating Budget Impact

Is this purchase ____*routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Village Hall Server Room HVAC

2018

\$ 17,500

Operating

Public Facilities- Village Hall

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A –New Request as part of 2018 CIP Budget process.

Funding History

N/A

Project Description & Justification

This request is for new installation of a standalone air-conditioning (AC) system for the server room at the Village Hall. Currently, the only air cooling is supplied by the building's HVAC system, which for a great portion of the year is inadequate for maintaining cool temperatures to protect the server and other computer hardware equipment including the battery backup system from damage/failure due to overheating. Many times throughout the year, Facilities staff is contacted by the Administrative Services Department for high temperature situations where the equipment starts to show audible signs of overheating which can lead to damage or failure of the components in the room.

Under the current arrangement, building and grounds staff has to manually start the building chiller and/or open the window in the room (if it's cold enough), which allows dust and contaminants into the server area. Currently there is a box fan running 24 hours a day to re-circulate the available cool air and try and keep the equipment cool. We have tried to increase the cooling capacity by cutting of the re-heat variable air volume (VAV) to area resulting in a no-heat situation for Administrative Services personnel occupying the office adjacent to the server room. This attempt by building and grounds staff to keep the server equipment cool is not only making the chiller run when it normally wouldn't, thus decreasing the life of a very expensive unit but it also relies on personnel being in the building that can perform this manual override, leaving the weekends and holidays open to unattended overheating. Even with these attempts to cool the room adequately, building and grounds staff will still get many calls for the room being too warm for the server.

Since the entire village phone system and network rely on the equipment running 24/7/365, it is in the best interest to separate the room from the rest of the building HVAC system and give the room a standalone and reliable year round source of cooling to standard server room temperatures of around 40 degrees. In addition, the new cooling system would be placed on the emergency generator panel providing cooling in the event of a power outage.

The projected cost also includes removal of an interior wall in the room and closing off the room from the rest of the building including disconnecting existing duct work in the space providing a

cool, isolated environment. This is a similar arrangement as to server facilities at the Police station and Public Works Facility.

Project Update

This is a new CIP request for 2018

Project Alternative

Continue with the makeshift cooling system requiring Facilities staff to detect and manually correct overheat situations with server equipment vulnerable to failure and shortened life spans.

Operating Budget Impact

Is this purchase _____ *routine* or ___X___ *non-routine*?

NONROUTINE	
Maintenance Costs	All maintenance expenditures are included in various accounts in 11342035
Personnel Costs	None
Training Costs	None

Carpeting Replacement	2019	\$33,000	Operating
Public Facilities - Village Hall	2020	\$35,000	
	2021	\$30,000	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost –

Village Hall (first floor) -existing carpet was installed in 2000 as part of the larger remodeling project (first floor).

Village Hall (second floor) – estimated to be 20+ years of age

Funding History

N/A

Project Description & Justification

The carpeting on both sides of the first floor at Village Hall (i.e. Finance Department and Community Development/Engineering Departments) is in poor condition, attributed to 17 years of heavy traffic use. The carpet is 7 years past its expected useful life of 10 years and is unrepairable according to multiple carpet professionals that have been out to assess it. Likewise, the carpeting on the second floor is 10+ years past its expected useful life. Total replacement, at this point, is deemed the most prudent solution for each floor.

In terms of condition, there are multiple areas of delamination, seam failure and pull back on both sides of the first floor. The intended goal is to replace the typical rolled carpeting with removable carpet tiles. This application is recommended based on feedback obtained for a similar project completed at Fire Station 26 in 2015. Carpet tiles eliminate future seam failures according to carpet professionals and afford greater flexibility with replacement of any worn or damaged tiles on an as needed basis, extending the life of the carpet overall.

Additionally, carpet tiles will require less disruption to Department operations during installation as not all of the furniture would need to be moved at one time which is typically required with a conventional rolled carpet installation. Instead, workers can lift individual pieces of furniture and install tiles as they go along, thus minimizing disruption to employees.

Project Update

The project was originally spread out over two years (2017 and 2018) and has been deferred to 2019 and 2020 (first floor). The second floor is scheduled for 2021 and has a lower replacement cost due to a smaller footprint.

Project Alternative

Defer the project and schedule over later years while carpeting continues to deteriorate or schedule the project over additional years. As an alternate third option, conventional rolled carpet could be installed at a lower cost upfront, but staff would not be able to make future spot repairs of heavily worn areas as easily without the replaceable carpet tiles. Installation would also be more expensive and time consuming having to be scheduled on the weekend or evening hours due to the manpower needed to take apart and move all of the office furniture, computer equipment and electrical disconnect and reconnect costs.

Operating Budget Impact

Is this purchase _____ *routine* or ___X___ *non-routine*?

NONROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Garage Ramp Replacement

2019

\$19,800

Operating

Public Facilities–Village Hall

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

1973

Funding History

N/A



Project Description & Justification

This project will replace the ramp to the underground garage at the Village Hall. The ramp is constructed of concrete and showing signs of deterioration. The expected remaining life of the ramp is approximately five years. The ramp's condition is getting progressively more uneven and heaving more every year, making it very cumbersome for bi-weekly dumpster refuse removal and regular deliveries from vendors using pallet jacks. This presents a safety issue for trip and fall accidents for employees and vendors

Project Update

This project has been deferred from 2018 to 2019 and there are no further updates.

Project Alternative

If the ramp is not replaced, patching and grinding can be performed on a temporary basis at a projected cost of \$4,000, however, the temporary repairs will not address larger sections which need to be replaced due to heaving and settling.

Operating Budget Impact

Is this purchase _____routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Parking Lot Restoration

2018

\$68,000

Operating

Public Facilities–Village Hall

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

Resurfaced in 1998, N/A

Funding History

N/A

Project Description & Justification

This request is for resurfacing of the Village Hall parking lot and includes grinding and removal of top three inches (existing) of asphalt. The existing parking lot surface is approaching 20-years and the end of its expected useful life. This will expand the useful life of the parking lot by approximately 10-years.

The project for the Village Hall's parking lot reconstruction includes the removal and replacement of the pavement and base. Additionally the replacement of any curbs and sewer improvements would also be included with the reconstruction.

Project Update

There are no updates for this request.

Project Alternative

The alternative is full parking lot reconstruction, including the removal and replacement of the pavement base, any curbs and sewer improvements at a total projected cost of \$160,000. This alternative option would extend the current pavement life by approximately 50 years (compared to 10 years for resurfacing only). As another alternative, Village staff can pursue grant opportunities for green or permeable pavement integration.

Operating Budget Impact

Is this purchase ____routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Interior Painting	2019	\$70,000	Operating
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Public Facilities–Village Hall

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This project entails patching and painting of the entire first floor at the Village Hall. The first floor of the Village Hall was renovated in 2001 (Community Development and Engineering) and 2005 (Finance and IS) which included painting. The area has not been repainted since then. It is recommended to paint walls every seven years. The work will be performed by outside contractors due to the large amount of work and lack of in-house personnel.

Project Update

This item has been deferred from 2018 to 2019.

Project Alternative

There is no alternative and deferring this project further will result in the deterioration of the walls and doors.

Operating Budget Impact

Is this purchase *routine* ____ or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	\$100 Annually
Personnel Costs	0
Training Costs	0

Facility Improvements

2020

\$1,675,000 Bond

Public Facilities–Village Hall

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

1974

Funding History

N/A

Project Description & Justification

The project, referred to as Phase III, completes the improvement project to the Village Hall that began in 1998.

Phase I of Village Hall Improvements, completed in 2001, focused on the Community Department and Engineering Departments. A new conference room, referred to as the Village Board Conference Room, was also included in Phase I. Phase II of the project, completed in 2005, consisted of renovations to the Finance Department and Information Technology areas as well as the lobby and main staircase. The chairs around the dais in the Council Chambers were also replaced.

Phase III will focus on the remaining unimproved areas on the second floor including the Council Chambers and private office space. This will complete the improvements to the Village Hall. The second floor improvements include: new carpeting, furniture in the private offices and redesigning the Council Chambers including replacing the audience seating and adding a new conference room.

Project Update

None

Project Alternative

Defer improvements to a later date or execute project in stages, beginning with improvements to the Council Chambers and meeting room.

Operating Budget Impact

Is this purchase ____ routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	TBD
Personnel Costs	None
Training Costs	None

Police Station Window Replacement	2020	\$40,000	Operating
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Public Facilities-Police

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost
1968

Funding History
N/A



Project Description & Justification

On October 19, 2015 Facility and Police Supervisors, walked the Police Station to make security recommendations in response to incident 15-12264 which occurred on 10/17/15. The offender made threats to the Police and was able to break out two glass doors in less than 10 seconds before being subdued by Officers. The Offender was seconds away from gaining untethered access to the Police Facility if it were not for the fortune of having two Officers in the general area at the time. In 2016 three doors were replaced and a Door Control Access system installed.

Several residential grade exterior double hung windows have been replaced over the years due to being porous and inoperability. Several inoperable and unsafe ground level windows remain, however it is recommended that they be replaced with commercial grade stationary awning windows with tempered laminate tinted glass.

The recommendations are as follows:

- Replace four north facing double hung windows with safety glass and tinting. These are office windows and are occupied at all times of the day and night. This would allow personnel to see when someone is approaching the facility and walkways.
- Replace two west facing ground level windows in roll call with safety glass and tinting
- Replace four west facing ground level windows in the men's locker room and washroom with safety glass and frosting.
- Replace three south facing ground level office windows with safety glass and tinting. One of these Office windows is utilized primarily during business hours. The other two windows are the Police Social worker windows which are utilized during day and evening hours for private consultations.

- Tint the five second story detective bureau windows. These office spaces are utilized during all hours of the day and are highly visible from the rear of the station.
- Tint the two ground level windows on the eastside of the station in Chief's office.
- Tint the one north facing ground level bay window in the Chief's Office.

Project Update

This project had been deferred since 2017.

Project Alternative

Defer replacement until later years.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NONROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Garage Floor Rehabilitation

Public Facilities–Fire Station

2018

\$39,000 (Station 26)

\$62,000 (Station 27)

Operating

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

Station 26-1964

Station 27-1958

Funding History

N/A



Project Description & Justification

Station 26 has approximately 7,100 square feet of apparatus floor space and Station 27 has 4,380 square feet. The proposed work includes self-leveling and coating substances applied to both floors that will fill and seal cracks and other damage. The surface to be applied is a non-skid epoxy that protects against impact, abrasion and mild chemicals.

In 2006, the fire stations were remodeled. However, the scope of work did not include repair and resurfacing of the apparatus bays. The floors in both garages are deteriorating due to damage from chemicals and heavy use. The proposed repair work will prevent more costly work from being needed in the future. The existing concrete floors were installed during original construction in 1958 and 1964. Heavy use over time has deteriorated the surface, making the floors uneven, slippery, and have raised cracks and pot holes. Fire Station 26 annually hosts dozens of public education tours/events that bring residents and guests to the fire station apparatus bay, including approximately 2,000 open house attendees

Project Update

This project has been deferred since 2013 and there are no other updates for this project. A 3% increase has been added to account for inflation of material and labor costs in 2018.

Project Alternative

The only alternatives at this time are to not repair the floors or delay the project and completely replace the floors when the condition warrants. An attempt to patch the holes in 2014 worked for about a month before becoming dislodged. Saw cutting of larger areas, removal of debris, pouring of new concrete and caulking of open joints would be a less costly option of \$5,000; however, does not include cost of coating/sealing the floor and does not address the non-skid issues.

Operating Budget Impact

Is this purchase ____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Fire Station #27 Boiler Replacement 2019 \$118,000 Operating

Public Facilities–Fire Station

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

1988

Funding History

2008- \$3,000 in repairs for the igniter box and starter motor

2009- \$2,500 in repairs for the main control that allows the unit to fire up the main burner

2010 to present- No significant repair costs.

Project Description & Justification

This project is for the replacement of the boiler at Fire Station 27. The boiler is 28 years old and provides the main source of heat for the Fire Station. The expected service life of a boiler is between 20 and 25 years. This boiler has exceeded its useful service life and uses outdated and inefficient technology. It should also be noted that since the remodeling of the station in 2005, the boiler became oversized as the building's load was reduced to half of what it used to be. If it were replaced with a new high recovery efficient boiler (90+ rated), appropriately sized for the actual load, there would be several benefits realized including 1) a significant reduction in natural gas usage, 2) reduction in emissions to the environment and 3) noticeable reduction in the gas costs to heat the building.

Project Update

This project has been deferred from 2018 to 2019 and was originally requested in 2008.

Project Alternative

If the boiler is not replaced, repairs will be made until parts are no longer available and then replaced on an emergency basis. If the boiler tank ruptures this will require an emergent repair at a potentially higher price and a longer wait time for receipt of new boiler and install, leaving the living areas of the station without their primary heating system.

Operating Budget Impact

Is this purchase ___ routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Station # 27 Window Replacement

2020

\$50,000

Operating

Public Facilities–Fire Station

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

1962

Funding History

N/A



Project Description & Justification

This project is for the replacement of the original (1962) picture windows at fire station #27.

In 2006, both fire stations were remodeled. However, the scope of work did not include replacement of the original picture windows at Fire Station #27. The windows are inoperable. These windows will be replaced with energy efficient windows.

Project Update

This project has been deferred since 2006, in 2017, the price increased from \$45,000 to \$50,000 due to labor and material costs.

Project Alternative

The alternative is to leave the original windows in place.

Operating Budget Impact

Is this purchase ___ routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Server Room HVAC

2018

\$ 11,000

Operating

Facilities- Public Works Facility

- Critical
 - x Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A -New Request as part of 2018 CIP Budget process

Funding History

N/A

Project Description & Justification

This is a request for replacement of a standalone AC system for the server/electrical vault room at the Public Works Facility (Vehicle Maintenance Garage -Mezzanine).

Currently, the server room is supported with a standalone AC system that cools the environment to protect the server and other high voltage electrical equipment including the battery backup system in the room from damage/failure due to overheating. The system is 17 years old and has had multiple repairs over the years, most importantly it's had numerous refrigerant leaks. The table denoted below includes a historical cost summary of repairs.

Year	2017	2016	2015	2014	2013	2012	2011	Total Cost
Repair Costs	\$ 1,251.81	\$ -	\$ 497.05	\$ -	\$ 606.18	\$ 660.24	\$ 729.28	\$ 3,744.56

Currently, the system has a small leak in the evaporator unit which is unreachable for repair. Over the years, sections of the cooling evaporator and condenser coils become isolated out of the system making it less effective and requiring it to run longer to cool the server equipment, resulting in more break downs. This unit runs 365 days a year. This system is at the end of its serviceable life, and the cost of sourcing parts has become more costly as they've become harder to find.

Buildings and grounds staff also recommends the purchase and installation of a high temperature sensor/alarm for advanced notification. There have been several random occasions where the room was discovered at over 85 degrees after the system failed due to a refrigerant leak. This has occurred even when the outside ambient temperatures was cold. There would be an additional cost for the sensor as it would need to be connected to the alarm panel.

Project Update

This is a new CIP for 2018.

Project Alternative

Continue with setup as is and risk failure of critical Information Technology equipment.

Operating Budget Impact

Is this purchase _____ *routine* or ☒ *non-routine*?

NONROUTINE	
Maintenance Costs	All maintenance expenditures are included in various accounts in 11342035
Personnel Costs	None
Training Costs	None

HVAC Compressor Replacement	2019	\$16,500	Operating
Public Facilities	2020	\$16,500	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This budget request is to replace the compressors at the Public Works Facility. The compressors compress gas refrigerant into a liquid form and pressurize the air conditioning system. The age and recommended replacement schedule for the Public Works Facility is as follows:

Public Works Facility

Compressor No.	Year Installed	Proposed Replacement	Replacement Cost
1	2007	2019	\$8,250
2	2008	2020	\$8,250
3	2008	2019	\$8,250
4	2007	2020	\$8,250

The Public Works Facility has a total of four compressors. The manufacturer's estimated life of a compressor is five years; however, proper maintenance has extended the life to an average of seven years.

Project Update

This project has been deferred from 2018-2019 to 2019-2020 and projected cost includes an increase of 3% to account for rises in labor and material costs.

Project Alternative

The alternative is not to budget the compressors and replace them on an emergency basis.

Operating Budget Impact

Is this purchase X *routine* or *non-routine*?

ROUTINE	
Maintenance Costs	All maintenance expenditures are included in various accounts in 11342035
Personnel Costs	None
Training Costs	None

Equipment – Ten Year Capital Improvement Program

The Equipment section of the Capital Improvement Program (CIP) identifies which capital equipment items need to be repaired, replaced or acquired new over the next ten years (only those detail pages for items programmed in the next five years are included). This section addresses equipment for the Village Hall, Police Station, Fire Station and Village Yard. This section of the CIP identifies all equipment other than vehicles, which are noted in their own section of the CIP.

As with other sections of the CIP, these improvements are targeted for specific years and almost all are financed through the General Fund operating revenues.

In FY 2010, replacement of Police squad car computers and video cameras were removed from the CIP as they are an annual recurring expense. In FY 2013, Automated External Defibrillators (AEDs) were removed from the CIP as they are annual recurring expenses. These expenditures can be found in the Police Department's annual operating budget.

Each project in the CIP is categorized by the requesting department as follows:

Critical - The project must be completed in the year recommended due to safety or operational needs or as mandated by law.

Recommended - The project will significantly improve operations or safety. The project is strongly recommended for funding in the year recommended or the year after.

Contingent on Funding - The project would be a benefit to the Village and improve service levels but is only recommended if funds are available.

The following improvements are proposed for 2018:

Equipment	Cost of Equipment	Funding Source	This Project is:
Anti-Icing Equipment	25,000	Operating	Critical
Salt Brine Machine	61,000	Operating	Recommended
Warning Sirens	20,000	Operating	Recommended
Protective Clothing Washer & Dryer	20,000	Operating	Recommended
Server for In-Car Camera System	18,000	Operating	Recommended
Total	\$144,000		

**Ten Year Capital Improvement Program
Equipment Summary**

Equipment Summary	Page	This Project is:	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
POLICE DEPARTMENT										
Village Warning Sirens	1	Rec.	20,000	25,000	-	-	45,000	-	45,000	Operating
Server for In-Car Camera System	3	Rec.	18,000		-	-	18,000	20,000	38,000	Operating
FIRE DEPARTMENT										
Protective Clothing Washer & Dryer	5	Rec.	20,000	20,000	-	-	40,000	-	40,000	Operating
Self Contained Breathing Apparatus	7	Contigent	-	234,000	-	-	234,000	-	234,000	Operating
PUBLIC WORKS										
Anti-Icing Equipment	9	Critical	25,000	8,150	-	-	33,150	-	33,150	Operating
Salt Brine Machine	12	Rec.	61,000	-	-	-	61,000	-	61,000	Operating
Total			144,000	287,150	-	-	431,150	20,000	451,150	

Proposed Financing	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total
General Fund- Operations	144,000	287,150	-	-	431,150	20,000	451,150
General Fund- Debt Financing	-	-	-	-	-	-	-
Total	144,000	287,150	-	-	431,150	20,000	451,150

Project Rating

Critical	25,000	8,150	-	-	33,150	-	33,150
Recommended	119,000	45,000	-	-	164,000	20,000	184,000
Contingent	-	234,000	-	-	234,000	-	234,000
Total	144,000	287,150	-	-	431,150	20,000	451,150

Police

Village Warning Sirens	2018	\$20,000	Operating
Equipment – Police	2019	\$25,000	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

1970s/1984/1991/2001 unknown cost

Funding History

N/A

Project Description & Justification

The village maintains and operates four outdoor warning sirens within the village. These sirens are essential in alerting the public to tornado sightings or warnings, in addition to other local, regional, or national emergencies. A summary of the sirens is below.

LOCATION	INSTALL DATE	REPLACE YEAR	COST	COMMENTS
Gillson Park	1984	2020	\$25,000	cost includes pole
Village Hall	1970's	2018	\$20,000	cost includes roof mount
Highcrest School	1991	2031	Unknown	
Public Works	2001	2041	Unknown	

The maintenance vendor of the sirens is advising that two siren units are in need of replacement, at Gillson Park and Village Hall. The siren at Village hall is outdated and replacement parts are no longer available.

The siren at Gillson Park is currently being evaluated by an engineer to determine its integrity. Subject to the review, the replacement of this siren may need to be advanced to 2018. This site is subjected to harsh wind loading and moisture due to its location along Lake Michigan. The wooden pole is leaning precipitously and the vendor has expressed concerns about the five hundred pound siren head becoming unstable and falling; the siren. The siren utilizes single phase electric service (three phase is available on the pole), has no back-up battery for operation during power failures, and is showing excessive moisture damage. The vendor recommends that the wooden pole be replaced and at the same time a new, three phase capable siren with back-up batteries be installed. The replacement of this siren and pole is approximately \$25,000. Additionally, staff will explore the possibility to partner with the Park District to add a message broadcast feature.

Project Update

The Village Hall siren was advanced to 2017 at an anticipated cost of \$20,000 to coincide with the roof replacement project.

Project Alternative

The alternative is the not replace the sirens. This risks the sirens becoming inoperable during an emergency.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*

NONROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Server for In-Car Camera System	2018	\$ 18,000	Operating
Equipment - Police	2023	\$ 20,000	
- Critical			
X Recommended			
- Contingent on Funding			

Original Purchase Date & Cost

2012 - \$16,085

Funding History

In 2007, \$36,000 was budgeted for a server and six in-car camera DVRs. Between 2008 and 2010, \$18,000 was budgeted each year in the CIP for in-car DVRs. In 2011, the replacement of camera DVRs was removed from the CIP and are now requested as needed. In 2012, the server and DVD robot burner were replaced.

Project Description & Justification

The In-car camera server collects and stores In-car video from each marked vehicle by way of wireless "hot spots" behind the police station. The system maintains important data used in the prosecution of criminal cases, review of an officer's performance in the field, and defending an officer's actions. The video is relied upon as an objective record detailing what occurred before, during, and after the interaction between a police officer and a violator. The DVD robot burner burns backup discs of recorded interactions and also is the source for creating discs for legal compliance. In 2011, due to a critical hardware failure the server was shipped to a vendor and was out of service for one month.

The extended maintenance agreements for both the server and DVD robot burner are set to expire in January 2018, therefore, another server problem would require the shipment of the system to a third party company with the possibility of significant downtime.

Project Update

There are no changes to this project.

Project Alternative

Delay the purchase and continue to use the current equipment.

Operating Budget Impact

Is this purchase X *routine* or *non-routine*?

ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Fire

Protective Clothing Washer and Dryer	2018	\$ 20,000	Operating
Equipment - Fire	2019	\$ 20,000	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

2000 and 2002 - \$10,000 each

Funding History

N/A

Project Description & Justification

The request is to replace the Fire Department's two fire gear commercial washers and purchase two fire gear dryers (one for each station). The department has 45 sets of fire gear in service.



After each fire, live fire training, or after exposure to body fluids from trauma accidents, the set of gear is washed. Each member of the department washes their gear set roughly three-four times a year. Fire recruits at the fire academy are required to wash their gear weekly at their own station.

The current washers are 13 to 15 years old. The washers are obsolete and with age are no longer efficient in being able to decontaminate the gear. If repairs are needed, some machines parts are no longer available or costly to obtain. In addition, the Fire Department does not have a commercial dryer for the fire gear. The gear cannot be dried in a conventional clothes dryer since it needs to hang in order to properly dry. Currently, the hose tower's heating system is used to dry the gear. The entire hose tower has to be heated where a dryer works on a timer and runs just long enough to dry and not waste energy. In addition, a commercial fire gear dryer is designed to efficiently dry the gear and quickly return it to service. Due to any contaminates from exposure to fire and chemicals, firefighting personal protective gear cannot be washed in standard wash machines.

Project Update

The Fire Department applied for grant funding in the 2016/2017 Assistance to Firefighters Grant (AFG) cycle to cover 90% of costs associated with this project. To date, the grant is pending. This project has been deferred since 2016. The costs for the project have been split into two fiscal years.

Project Alternative

An option is to continue to use the current equipment although some replacement parts are no longer available or costly to obtain. Another alternative is to send the gear to a third party

decontamination company which can be expensive (approximately \$200 per set) and takes five business days to turn the gear around. This option may require the Fire Department to purchase a second set of gear to be placed in reserve in case of an emergency; Fire gear sets cost over \$5,000 each, and for 45 firefighters, the total cost would be \$225,000.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	\$200-400 Annual
Personnel Costs	None
Training Costs	None

Self-Contained Breathing Apparatus (SCBA)	2019	\$234,000	Operating
--	------	-----------	-----------

Equipment – Fire

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

2008 - \$166,120

Useful Life- 10 years

Current Life- 8 years

Funding History

N/A

Project Description & Justification

The Wilmette Fire Department is requesting \$234,000 for the replacement of 37 complete sets of self-contained breathing apparatus (SCBA), including spare cylinder, face piece, and six additional face pieces. This is based on the number of seat belted riding positions on our structural firefighting apparatus including: one aerial tower (6 positions), 3 pumpers (12 positions), one squad truck (6 positions), one shift commanders van (2 positions), Chief and Deputy Chief Vehicle (2 positions), and three ALS ambulances that have firefighters responding to fire scenes (6 positions).

The Wilmette Fire Department is using SCBA units that were purchased in 2008. The units were designed to the 2007 edition of NFPA 1981 standards on Open-Circuit Self-Contained Breathing apparatus. The current standard requires SCBA equipment to meet NFPA 2012 standards, and in 2017 it is anticipated that a revised standard will be adopted. Therefore, in 2019 we will be behind two NFPA standards (2012 and 2017), and the equipment will have reached its useful life expectancy.

Project Update

In 2013, there were changes made to the NFPA 1981 standard which are operational related. The three main changes are related to the survivability of firefighters in fire conditions, testing for increased face piece lens integrity, new voice communication intelligibility requirements, and changes to the end of service time indicator. Currently, our bottles have this indicator at 25% of the cylinder's rated capacity. The new standard mandates that this alarm will sound when 33% of the cylinders rated capacity is reached. This will also affect the standard on heads up display (HUD) that will require to display signals at 75%, 50%, and 33% as opposed to just 50% as in previous editions. The manufacture has been contacted and provided the projected cost for 2019 which is indicated above. The department will investigate leasing options for purchasing the SCBA. The department will request grant funding for this purchase in 2018.



Operating Budget Impact

Is this purchase ____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	Maintenance is funded from account: 11515020-422420 for Maintenance of Breathing Equipment.
Personnel Costs	None
Training Costs	Training is funded from account: 11515020-442000 for Training while the majority of training is conducted in-house.

Anti-Icing Equipment and Vertical Storage Tank	2018	\$25,000	Operating
Equipment–Engineering and Public Works	2019	\$ 8,150	

X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost

N/A



Funding History

2017 \$15,784 (two each 400-gallon anti-icing units for pick-up trucks)
\$ 8,050 (10,500 gallon storage tank)

Project Description & Justification

- For 2018, at an estimated cost of \$25,000 to purchase one anti-icing slide-in unit (large dump truck), 1,000-gallon capacity;
- For 2019, at an estimated cost of \$8,150 to purchase one additional anti-icing slide-in unit (pick-up trucks), 400-gallon capacity, for snow and ice control (anti-icing applications).

This request is a continuation of a three year CIP project (2017, 2018 and 2019). The purchases were scheduled across three years in order to allow sufficient time to evaluate operations (2017-2018 snow season) before committing to an additional purchase in 2018 and 2019. For background, in 2017, the Village purchased two anti-icing slide-in units (pick-up trucks), 400-gallon capacity at a cost of \$15,784 (or \$7,892 each) and one each 10,500-gallon poly storage capacity tank at a cost of \$8,050. As a result, staff recommends moving ahead with additional purchases in 2018 and 2019. Having four units (or 2,200 gallon total capacity) will be a favorable arrangement from an efficiency standpoint as one tank load (across the four units) would be able to treat a total of 55 lane miles (at 40 gallons per lane mile) before having to refill tanks, providing 75% coverage of the Village's estimated 72 lane miles of arterial roadways in a single trip as compared to having multi trips and tank fill-ups.

Of most importance, this request aligns with the goal of reducing chloride usage per Clean Water Act standards, enforced through the Illinois Pollution Control Board, to protect the Chicago Area Waterway System (CAWS)—specifically the Lake Michigan and Calumet/Chicago River watersheds. As the Village and other municipalities work through developing Best Management Practices (BMPs) to reduce chloride usage as part of a model snow and ice control program, anti-icing programs have been widely identified as one the primary methods to achieve this. If the Village does not actively pursue efforts to reduce its chloride usage, it may face litigation for regulatory non-compliance.

Anti-icing is a pro-active approach to winter road maintenance where deicing liquids, such as salt brine (or salt water with 22-23% concentration), are applied directly to the roadway before, or at the onset to, a winter storm. Moreover, it acts as a bond-breaker between the pavement surface and the ice and snow layer which melts snow more quickly and reduces the chance that ice will form and bond to the surface. It is easier and quicker to prevent a bond from forming than to break a bond that has already formed, thus anti-icing techniques usually require less de-icing materials than traditional practices. This is where the reduction of chlorides occurs; more liquid material usage (salt brine) and less hard material usage (rock salt). Salt brine or saltwater essentially is a chloride (water H₂O and sodium chloride NaCl).

Of the Village's network of streets (166 curb lane miles), approximately 65-70 miles are categorized as high priority, arterial streets. Based on historical data (2010-2016), 75% of all snow events (or 19-20 events per season) are under 2.00 inches snow accumulation (salting operations, non-plowing) with approximately 75-80% of total dry salt usage dedicated for arterial streets (and parking lots, priority sidewalk routes), and the remaining 20-25% for side street applications.

All of the requested anti-icing slide-in units will have the capacity to apply salt brine and other liquid deicers at a rate of 40-50 gallons per lane mile (recommended application rate for anti-icing with salt brine) which is the equivalent of pretreating roadways with approximately 90-115 pounds per lane mile of dry material (rock salt). Over the course of each winter season, staff estimates that up to 10-12 snow events will be able to receive proactive anti-icing applications, however, the final quantity will be confined by the frequency and duration between winter events, temperature at time of application (i.e. must be above 20° F for salt brine use), sufficient drying time after application and presence/absence of moisture before, during and after application (i.e. incidence/forecast of rain) and presence/absence of blowing/drifting snow. Based on the above referenced projections, a total of 28,800 gallons of salt brine would be used to anti-ice approximately 10 snow events (or 2,880 gallons per event, equates to applying 3.25-tons of dry material- rock salt per event).

Ultimately, the Village would like to achieve a minimum 30% reduction in chloride usage (dry material-rock salt) which anti-icing operations will help to facilitate. Based on historical average usage (2,100 tons per winter season), this would equate to a reduction of 630 tons of rock salt and savings of \$41,454 in material costs – bulk rock salt (based on unit pricing of \$65.80 per ton for 2017-2018 winter season). However, when accounting for salt brine consumption for anti-icing (approximately 28,800 gallons at \$0.43 per gallon or \$12,384) and pre-wetting applications (approximately 21,000 gallons at \$0.43 per gallon or \$9,030) the projected overall net savings is \$20,040 per winter season. Comparatively, if the salt brine maker purchase was approved, the annual savings would increase by an additional \$13,944 (or \$33,984 total), attributed to unit cost savings in the cost of salt brine (\$0.43 per gallon versus \$0.15 per gallon).

Project Update

This CIP requests represents year 2 of a 3-year program and the cost for a slide-in unit (pick-up truck) has increased by \$650 based on a recent purchase in 2017.

Project Alternative

The alternative is to defer purchase until later year(s) and/or not pursue implementation of anti-icing program.

Operating Budget Impact

Is this purchase ____ *routine* or X *non-routine*?

ROUTINE	
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Salt Brine Machine (Automatic)

2018

\$61,000

Operating

Equipment-Engineering and Public Works

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This equipment purchase is a salt brine maker and auto truck fill system, for use by Engineering and Public Works to produce salt brine liquid deicer for anti-icing and pre-wetting applications for snow and ice control. The Village currently has 24,500 gallons of storage capacity (10,500 and 8,000 gallon tanks- one each and 1,500 gallon tanks- four each) for liquid deicer products at the Public Works Facility. Salt brine (22-23% concentration) is the preferred liquid for anti-icing and pre-wetting applications at temperatures of 18° F and warmer due to its effectiveness and low cost (approximately \$0.43 gallon versus \$1.00 to \$2.00 dollars for alternative deicers/blends).

Starting in 2018, and contingent upon funding of anti-icing units, staff projects annual consumption of salt brine at 49,800 gallons (28,800 gallons for anti-icing and 21,000 gallons for pre-wetting applications) with an associated cost of \$21,414 (or \$0.43 per gallon) for delivery of material by an outside vendor. By comparison, automatic salt brine machines can produce material at \$0.15 per gallon (1-ton of rock salt produces approximately 874 gallons of salt brine at 22-23% concentration). Based on the projected annual consumption (for 2018), this translates to an annual savings of \$13,944 with the salt brine machine paying for itself in less than five years. Over ensuing years, as the Village looks to add additional anti-icing units, expand the program and increase pre-wetting application rates (12 gallons per ton to 40 gallons per ton), the projected annual consumption will likely increase and contribute even greater savings. For every additional 10,000 gallons in annual consumption the savings increases by \$2,500.

Project Update

The cost of this project has increased from \$40,000 to \$61,000 for inclusion of an auto truck fill system.

Project Alternative

The alternative is to defer purchase until a later year(s) and continue purchasing material from an outside vendor at a premium cost of \$0.28 per gallon.



Operating Budget Impact

Is this purchase ____ *routine* or *X* *non-routine*?

ROUTINE	
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Information Technology – Ten Year Capital Improvement Program

In FY 2000, the Village recognized that several, very involved technology initiatives were expected in the upcoming years that would require increased funding. In addition, the existing technology infrastructure was maturing into a sophisticated operation that required full time management attention. Therefore, in FY 2001, the Village's technology operation was removed from the Finance Department and became the responsibility of the newly created Information Services Department (now known as Administrative Services).

The Administrative Services Department is responsible for purchasing and maintaining all computer systems and personal computers, providing technical support to all systems, and supervision of village hired consultants and vendors.

In FY 2001, the IT Department retained the services of System Development Integration, Inc. (SDI) to prepare a strategic information technology business plan. To date, all of the plan's recommendations have been implemented. Staff worked with the Administration Committee in 2016 to adopt a new strategic plan. Expenditures for the replacement of PCs and servers can be found in the IT Department's annual operating budget.

Each project in the CIP is categorized by the requesting department as follows:

Critical - The project must be completed in the year recommended due to safety or operational needs or as mandated by law.

Recommended - The project will significantly improve operations or safety. The project is strongly recommended for funding in the year recommended or the year after.

Contingent on Funding - The project would be a benefit to the Village and improve service levels but is only recommended if funds are available.

The projects recommended for 2018 include:

Project	Cost of Improvement	Funding Source	This Project Is:
GIS Hardware and Software	50,000	GF/WS	Recommended
Document Management & Scanning	38,000	Operating	Recommended
Utility Billing Software Upgrade	24,750	Water/Sewer	Recommended
Network Security Analytics Software	15,000	Operating	Recommended
Total	\$127,750		

**Ten Year Capital Improvement Program
Information Technology Summary**

Information Technology	Page	This Project is:	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
GIS Hardware and Software	1	Rec.	50,000	38,000	14,000	42,000	144,000	110,000	254,000	GF & W/S
Document Management & Scanning	3	Rec.	38,000	-	-	-	38,000	-	38,000	Operating
Utility Billing Software Upgrade	5	Rec.	24,750	-	-	-	24,750	-	24,750	W/S
Network Security Analytics Software	7	Rec.	15,000	-	-	-	15,000	-	15,000	Operating
Total			127,750	38,000	14,000	42,000	221,750	110,000	331,750	

Proposed Financing	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total
General Fund- Operations	69,667	12,667	4,667	14,000	101,000	36,667	137,667
Water Fund	29,042	12,667	4,667	14,000	60,375	36,667	97,042
Sewer Fund	29,042	12,667	4,667	14,000	60,375	36,667	97,042
Total	127,750	38,000	14,000	42,000	221,750	110,000	331,750

Project Rating

Critical	-	-	-	-	-	-	-
Recommended	127,750	38,000	14,000	42,000	221,750	110,000	331,750
Contingent	-	-	-	-	-	-	-
Total	127,750	38,000	14,000	42,000	221,750	110,000	331,750

GIS Hardware and Software	2018	\$ 50,000	GF and W/S Operating
IT – Engineering	2019	\$ 38,000	
	2020	\$ 14,000	
	2021	\$ 21,000	
	2022	\$ 21,000	

- Critical
- X Recommended
- Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

2016 – 96,015

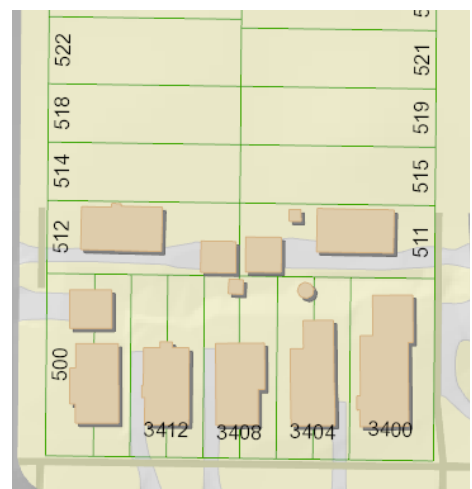
2014 – 93,000

Project Description & Justification

Geographic Information System (GIS) is used to geographically map data to be used by all Village departments. Once baseline data is entered into the database, departments can use the data as a management tool to guide them in infrastructure improvements, planning and zoning analysis, and public safety details and programs.

The Village joined the GIS Consortium in 2016. Under the Village’s current membership, a 40% full time equivalent (FTE) employee is outsourced from MGP, the Consortium’s service provider, and works with staff two days per week to create and update GIS layer data. The outsourced staffing component is now incorporated into the operating budget. Additional costs for special services are included in years 2018, 2019, and 2022.

The special services in 2018 and 2019 are to update digital aerial photography and planimetric mapping (\$50,000) as well as providing contour mapping (\$38,000). This will provide staff with more detailed and accurate GIS data, specifically as it relates to parcels, buildings, impervious surfaces (image to the right shows parcels with and without this type of data), and more accurate mapping for grading permits. This data is necessary should the Village decide to implement a stormwater utility fee. The Village currently utilizes GIS data provided by Cook County. The aerial photography was last updated in 2013 and is not reliable in many cases. The contour data is accurate to within 2 feet and the updated data will be accurate to within 1 foot. This cost is optional and not required in maintaining the Village’s membership in the consortium.



Project Update

The five-year cost has been updated. Years 2020-2022 show updates to the aerial photography and planimetrics.

Project Alternative

The alternative is to delay the additional data and imagery to future years.

Operating Budget Impact

Is this purchase ____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Document Management	2018	\$ 38,000	Operating
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IT - Information Technology

- Critical
- X Recommended
- Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

2017 - \$102,000

Project Description & Justification

The Village currently stores historical documents at an off-site storage facility. Currently, the space is provided to the Village at no cost through 2026. The documents stored at this location include Ordinances, minutes, engineering project files, zoning and planning cases, finance documents, and legal documents.



Included in the project cost is to scan and index approximately 300 boxes of documents over two years at a cost of approximately \$78,000. Additionally, costs to provide software to access and easily retrieve and search documents is included. Such software is critical to the project and will provide staff the ability to retrieve documents much more efficiently than the current practice of driving to the off-site facility and manually searching boxes. The cost for the software is \$65,725 in year one and \$7,000 annually thereafter. In addition to this, the Community Development Department spends approximately \$7,500 per year to scan incoming permits and related files.

Project Update

The work for this project began in 2017 and will continue into 2018. The software was implemented in 2017 and will have an ongoing annual maintenance cost of \$7,000.

Project Alternative

The alternative is to maintain documents in a paper format and find a new storage location when the zero cost lease ends in 2026.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	Annual recurring maintenance expense of \$7,000
Personnel Costs	No additional personnel are required for this program.
Training Costs	One-time training costs are included in the first year cost.

Utility Billing Software Upgrade

2018

\$24,750

Water/Sewer

IT - Information Technology

- Critical
- X Recommended
- Contingent on Funding

Original Purchase Date & Cost

2003 - \$32,000

Funding History

N/A

Project Description & Justification

This is a one year project to convert the existing Munis Utility Billing Classic software module to a newer module called Utility Billing – CIS. The majority of the project expense is for professional services including implementation and training. The license cost of \$14,500 is waived since we already own the “old” Utility Billing.

The conversion is requested to allow for the utility billing programs to be used in the new Munis Dashboard that was installed in early 2015. The improved search features and central programs are not available with the Utility Billing (UB) Classic software. Access to these new search features and central programs will help improve customer service at the front counter with all staff being able to quickly look up accounts and answer basic inquiries.

Once the Munis Dashboard project was completed in early 2015, we were quickly able to determine that the UB-CIS program would be a significant improvement to the UB Classic. Additionally, Tyler Technologies (Munis) no longer adds new features to the UB Classic module. Therefore, any new functionality is not available to us. While there is no date set for the retirement of the UB Classic module, new Munis customers are all required to be implemented on the UB-CIS module.

Project Update

This is a new request.

Project Alternative

If funding is not available, the alternative would be to continue to work with the UB Classic module and not use the new features of Munis Dashboard.

Operating Budget Impact

Is this purchase _____ *routine* or ☒ *non-routine*?

NON-ROUTINE	
Maintenance Costs	Annual recurring maintenance expense of \$3,850.
Personnel Costs	No additional personnel are required for this program.
Training Costs	The majority of the project expense is for migration services and training. No additional costs are planned beyond what is already listed.

Network Security Analytics Software

2018 \$15,000 Operating

IT - Information Technology

- Critical
- X Recommended
- Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This is a request to purchase a dedicated server and software to provide comprehensive security analytics for the Village's networked assets such as servers, desktop computers and mobile computers.

Enhancing the Village's network security was identified as an initiative in the Village's Strategic Information Technology Plan adopted by the Administration Committee in December, 2015.

The recommended security analytics platform provides:

1. Threat Analytics – The ability to know what potential threats there are to the network, if they are being exploited, and how to remediate them.
2. Configuration Reporting – Manage account permissions, privileges, and group policies. Know if a user privilege is escalated or a group is misconfigured.
3. Vulnerability Tracking – Real time updates to security risk profile. Know about the latest vulnerabilities, how they are being exploited, and how to remediate them. Currently the Village is provided this information through email notifications that potential vulnerabilities exist. However, there is no ability to track those vulnerabilities to individual computers. This software will send alerts identifying which computers are affected.
4. User Behavior Analytics – Track behavior by user groups to spot anomalous behavior that could be insider threats or hackers already inside the network.
5. Quick deployment – Minimal configuration required. Data collection techniques enable remote locations to be monitored with no extra equipment or cost.
6. Bandwidth usage monitoring – Allows staff to see what programs and which users are consuming bandwidth on a network segment.

Project Update

This is a new request.

Project Alternative

If funding is not available, we will continue with the current security procedures in place.

Operating Budget Impact

Is this purchase _____ *routine* or ☒ *non-routine*?

NON-ROUTINE	
Maintenance Costs	Annual recurring maintenance expense of \$7,500.
Personnel Costs	No additional personnel are required for this program.
Training Costs	The majority of the project expense is for migration services and training. No additional costs are planned beyond what is already listed.

Streets, Sidewalks and Alley Improvements – Ten Year Capital Improvement Program

The Village of Wilmette recognizes the importance of consistently maintaining its streets, sidewalks and alleys to ensure the safety of drivers and pedestrians. Therefore, the projects listed below are recommended for funding in 2018.

Street System Overview

In FY 2008, the Village completed the 10th year of an accelerated road program which increased the average condition of the street system from poor to good. In 2016, the Village Board committed to an annual \$2 million road program.

The Village conducts a pavement inventory study at least every five years and has implemented a crack sealing program to prevent degradation of the streets.

Sidewalk & Curb System Overview

The Village of Wilmette recognizes the need to have a network of safe pedestrian accesses throughout the community and has 166.2 miles of sidewalk. The primary emphasis of the sidewalk replacement program is to ensure the safety of the Village's sidewalks. To that end, the Village inspects 1/5 of all public sidewalks annually and funds 100% of the replacement cost of sidewalk repair.

Project	Cost of Improvement	Funding Source	This Project Is:
Street Resurfacing Program	2,000,000	Operating/MFT	Critical
Alley Maintenance Program	544,700	Operating	Critical
Central Avenue Reconstruction	518,000	Grant/Operating	Critical
Design & Construction Services	220,100	Operating	Critical
Locust Road Reconstruction	147,860	Grant	Critical
Skokie/Hibbard Intersection Improvements	116,000	Grant/Operating	Critical
Street Patching	87,200	Operating	Critical
Sidewalk Replacement Program	72,100	Operating	Critical
Skokie/Lake Intersection Improvements	70,000	Grant	Critical
Brick Street Repair	52,800	Operating	Critical
Pavement Marking Program	51,500	Operating	Critical
Brick Street Renovation Project	257,500	Operating	Recommended
Curb Replacement Program	42,200	Operating	Recommended
Crack Sealing Program	41,200	Operating	Recommended
Street Light Pole Painting	37,105	Operating	Recommended
Street Light Pole Purchase	28,235	Operating	Recommended
Pavement Surface Rejuvenation	16,400	Operating	Recommended
Streetscape Furniture Purchase	15,000	Operating	Recommended
All other contingent projects	341,800	Grant/Operating	Contingent
Total:	\$ 4,659,700		

**Ten Year Capital Improvement Program
Streets, Sidewalks, and Alleys Summary**

Streets, Sidewalks and Alleys	Page	This Project is:	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
Street Resurfacing Program	1	Critical	2,000,000	-	2,073,900	4,000,000	8,073,900	12,000,000	20,073,900	Operating/MFT
Alley Maintenance Program	8	Critical	544,700	549,000	574,800	1,267,200	2,935,700	3,183,300	6,119,000	Operating
Central Avenue Reconstruction	12	Critical	518,000	6,454,600	-	-	6,972,600	-	6,972,600	Grant/Operating
Design & Construction Services	14	Critical	220,100	230,800	230,900	468,200	1,150,000	840,744	1,990,744	Operating
Locust Road Reconstruction	16	Critical	147,860	2,307,615	-	-	2,455,475	-	2,455,475	Grant
Skokie/Hibbard Intersection Improvements	18	Critical	116,000	-	-	-	116,000	-	116,000	Grant/Operating
Street Patching	20	Critical	87,200	89,800	92,200	192,200	461,400	524,900	986,300	Operating
Sidewalk Replacement Program	22	Critical	72,100	74,200	76,300	158,900	381,500	434,000	815,500	Operating
Skokie/Lake Intersection Improvements	25	Critical	70,000	75,783	1,362,032	-	1,507,815	-	1,507,815	Grant
Brick Street Repair	27	Critical	52,800	54,300	55,900	116,400	279,400	317,800	597,200	Operating
Pavement Marking Program	29	Critical	51,500	53,000	54,500	113,500	272,500	310,000	582,500	Operating
Brick Street Renovation Project	31	Rec.	257,500	417,900	347,500	513,600	1,536,500	1,613,325	3,149,825	Operating
Curb Replacement Program	33	Rec.	42,200	43,400	44,700	93,000	223,300	254,000	477,300	Operating
Crack Sealing Program	35	Rec.	41,200	42,400	43,600	90,800	218,000	248,000	466,000	Operating
Street Light Pole Painting	37	Rec.	37,105	38,105	39,250	82,065	196,525	256,025	452,550	Operating
Street Light Pole Purchase	39	Rec.	28,235	28,235	28,235	56,470	141,175	148,234	289,409	Operating
Pavement Surface Rejuvenation	41	Rec.	16,400	16,900	17,400	36,300	87,000	99,100	186,100	Operating
Streetscape Furniture Purchase	43	Rec.	15,000	15,000	15,000	30,000	75,000	75,000	150,000	Operating
Stamped Concrete Paver Replacement	45	Rec.	-	15,500	15,900	33,300	64,700	90,900	155,600	Operating
Skokie Valley Trail	47	Contingent	25,500	2,735,000	7,748,000	-	10,508,500	-	10,508,500	Grant
Streetscape Improvements / Ridge Road	49	Contingent	200,000	1,700,000	-	-	1,900,000	-	1,900,000	Grant
Decorative/Roadway Street Lights	52	Contingent	77,300	117,200	42,500	-	237,000	-	237,000	Operating
RRFB's at Plaza de Lago Pedestrian Crossing	54	Contingent	30,000	-	-	-	30,000	-	30,000	Operating/Grant
Traffic Calming	56	Contingent	9,000	25,000	25,000	80,000	139,000	125,000	264,000	Operating
Village Downtown Streetscape	58	Contingent	-	350,000	400,000	6,000,000	6,750,000	-	6,750,000	Bond
Replacement of North Bridge Sidewalk	60	Contingent	-	308,400	-	-	308,400	-	308,400	Bond
Bicycle Master Plan	50	Contingent	-	80,000	-	-	80,000	-	80,000	Grant
Total			4,659,700	15,822,138	13,287,617	13,331,935	47,101,390	20,520,327	67,621,717	

Proposed Financing	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total
General Fund- Operations	3,122,700	4,689,525	3,127,585	4,081,935	15,021,745	17,270,327	32,292,072
General Fund- Debt Financing	-	658,400	400,000	6,000,000	7,058,400	-	7,058,400
Motor Fuel Tax (MFT)	700,000	650,000	650,000	3,250,000	5,250,000	3,250,000	8,500,000
General Fund- Grant Financing	837,000	9,824,213	9,110,032	-	19,771,245	-	19,771,245
Total	4,659,700	15,822,138	13,287,617	13,331,935	47,101,390	20,520,327	67,621,717

Project Rating

Critical	3,880,260	9,889,098	4,520,532	6,316,400	24,606,290	17,610,744	42,217,034
Recommended	463,140	3,352,440	8,299,585	935,535	13,050,700	2,784,584	15,835,284
Contingent	316,300	2,580,600	467,500	6,080,000	9,444,400	125,000	9,569,400
Total	4,659,700	15,822,138	13,287,617	13,331,935	47,101,390	20,520,327	67,621,717

Road Program	2018	\$2,000,000	Dedicated/MFT
Streets, Sidewalks, and Alleys	2020	\$2,073,900	
	2021	\$2,065,200	
	2022	\$2,069,900	
X Critical			
- Recommended			
- Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

2017	\$2,096,276
2016	\$1,210,511
2015	\$1,164,000
2014	\$ 848,000
2013	\$1,370,000
2012	\$1,002,000
2011	\$1,586,000

With the passage of the .75% increase in Home Rule Sales Tax in 2014, a portion of the proceeds was dedicated for street, sidewalk, and alley programs. Approximately \$1.5 million annually was made available in 2015 between dedicated revenues and the Motor Fuel Tax fund.

As part of the FY 2017 Budget, the Village Board committed to an annual \$2 million road program and increased the property tax rate by 0.90% as well as the local gasoline tax by \$0.03 for street improvements. For FY 2017, \$125,000 in General Fund reserves were used to fund the road program at \$2 million, thus the Village must identify an additional \$125,000 in recurring funding for 2018 and beyond. The Village's commitment to steadily improving the condition of roads in a fiscally responsible manner includes additional funding beginning in 2023 and 2024 via retired debt service.

Project Description & Justification

This program is to rehabilitate streets throughout the Village.

Many of the Village's roads were built in the post-World War II development boom. The accelerated street-resurfacing program (1998 through 2008) allowed the Village to rehabilitate more streets each year and ultimately improve the average pavement condition to a "good," "very good" or "excellent" condition. Over the past years, streets that were candidates for construction, were selected from a pavement evaluation program developed by an outside consultant. Beginning in 2013 as part of a cost saving initiative, the Engineering Department prioritized street rehabilitation needs using recently purchased PAVER pavement evaluation software. The widely used program is managed in-house by existing engineering staff utilizing the assistance of engineering interns during the summer months.

At the end of the accelerated program in 2008, the Engineering Department recommended reducing the annual funding allocation from \$3.1 million to \$2 million. This funding level was intended to keep the average street condition in the “good or better” category. Below is a table displaying surface conditions, corresponding pavement ranking and estimated life:

Surface Condition	Pavement Rating	Relative Remaining Life
Excellent	100 – 85	12 – 15 years
Very Good	84 – 80	10 – 12 years
Good	79 – 70	8 – 10 years
Fair	69 – 60	6 – 8 years
Poor	59 – 40	3 – 6 years
Very Poor	39-0	< 3 years

Since the completion of the accelerated road program, the annual expenditure has averaged \$879,000, approximately \$1,121,000 below the Department recommendation. The Pavement Condition Index (PCI) has dropped from 77 to 69 since 2008. Underfunding the road program has resulted in a need to increase the annual expenditure to maintain a 70 or better pavement condition.

Brick Streets Overlaid in Asphalt

In 2002, the Village adopted a policy on brick streets that have been overlaid with asphalt. The requirements include:

- The street must contain original clay fired bricks.
- Segment must be included in an annual rehabilitation program.
- More than 65% of the residents must be in favor of the brick street surface.
- A minimum of a contiguous three block segment must endorse the brick surface.
- The renovation plan be completed in shorter segments so the road program budget is not dominated by the rehabilitation of the brick street.

The scope of work includes removing the existing asphalt surface and reconstructing the street in brick. It is recommended that these streets be reconstructed one block at a time. This policy was endorsed by the Municipal Services Committee in 2012, 2015 and 2016.

Forest Avenue from 5th Street to 6th Street was reconstructed in brick in 2017. The 2018 project includes Forest Avenue from 6th Street to 7th Street.

The tentative road program schedule is shown in the table below. Note that the schedule is fluid and expected to change as street condition ratings are updated annually. In addition, the annual road program funding will likely be used toward the local share of the Village’s federal grant projects. Central Avenue and Locust Road are both programmed for construction in 2019.

2018						
Name	From	To	Surface	Length (ft)	Condition	Cost Estimate ¹
Forest Ave ³	6 th St	7 th St	ABR ²	530	Very Poor	\$374,940
Poplar Dr ³	Isabella St	Wilmette Ave	AC	2864	Very Poor	\$646,350
Lawler Ave ³	Big Tree Ln	Temple Ln	AC	423	Very Poor	\$91,790
Glendenning Rd	Greenwood Ave	Ashland Ave	PCC	696	Very Poor	\$29,900
Ouilmette Ln ³	Washington Ave	Lake Ave	AC	1184	Poor	\$264,410
Big Tree Ln ³	Glenview Rd	Lawler Ave	AC	925	Poor	\$206,580
2018 STP Locust, Lake/Skokie, Central						\$289,300
6,622 ft (1.25 miles)						TOTAL: \$1,903,270
Brick Purchase						\$27,000
TOTAL +3% annual inflation since 2017: \$1,988,180						
2019						
Central Ave	Green Bay	Sheridan	APC	5478	Poor	\$6,454,600
Locust Rd	Lake	Wilmette	AC	2600	Poor	\$2,307,615
2020						
Prairie Ave	Wilmette Ave	Central Ave	ABR ²	665	Very Poor	\$444,000
Garrison Ave ⁴	S. Village Limit	North End	APC	200	Very Poor	\$43,400
Ridge Rd ⁵	Isabella St	Wilmette Ave	AC	1249	Very Poor	\$398,900
Hunter Rd ⁶	Elmwood Ave	Thornwood Ave	PCC	790	Poor	\$80,230
Laurel Ave	Sheridan Rd	West End	AC	689	Poor	\$166,170
Cardinal Ln	Illinois Rd	Cul-de-sac	PCC	613	Poor	\$76,390
5 th St	Gregory Ave	Greenleaf Ave	AC	1807	Poor	\$424,040
Valley View Ct	Valley View Dr	Cul-de-sac	AC	220	Poor	\$43,920
Valley View Dr	Hartzell St	Glenview Rd	AC	777	Poor	\$188,840
7,010 ft (1.33 miles)						TOTAL: \$1,865,890
Brick Purchase						\$32,000
TOTAL +3% annual inflation since 2017: \$2,073,900						
2021						
Prairie Ave ⁷	Isabella St	Catalpa Pl	ABR ²	725	Very Poor	\$561,300
Hill St	Hibbard Rd	East End	AC	604	Poor	\$129,390
4 th St	Central Ave	Lake Ave	APC	810	Poor	\$166,290
Washington	Sheridan Rd	Michigan Ave	AC	361	Poor	\$68,940
Central Ave	Hibbard Rd	Lavergne Ave	AC	1279	Poor	\$344,150
Kenilworth Ave	21 st St	Ridge Rd	PCC	866	Poor	\$87,950
Wilmette Ave	Green Bay Rd	Prairie Ave	AC	1093	Poor	\$436,410
5,823 ft (1.10 miles)						TOTAL: \$1,794,430
Brick Purchase						\$40,400
TOTAL +3% annual inflation since 2017: \$2,065,200						
2022						
Prairie Ave	Catalpa Pl	Maple Ave	ABR ²	810	Very Poor	\$638,100
Lake Ave	Wilmette Ave	260' E. of 5 th St	AC	3327	Poor	\$895,230
Kilpatrick Ave	Hartzell St	Glenview Rd	AC	630	Poor	\$174,990
20th St	Central Ave	Highland Ave	PCC	308	Poor	\$31,280

5,075 ft (0.96 miles)	TOTAL: \$1,739,600
Brick Purchase	\$45,900
TOTAL +3% annual inflation since 2017: \$2,069,900	

¹ Estimated costs are based on current 2017 construction pricing and do not include an annual cost increase (index), engineering (soft) costs (such as pavement cores, topography, or material testing).

² ABR are constructed one block per year per policy discussion at MSC on 11-3-16 which was intended to minimize the impact of the brick replacement project within the annual road program. 28 blocks were determined eligible of which 14 are very poor, 7 are poor, 2 are fair, 4 are excellent and 1 is unrated. Since Forest from 5th to 6th is under construction in 2017, 27 blocks remain and another 13 years are needed to complete the very poor ABR streets.

³ Design contract RFP No. 16-M-0010 CBBEL.

⁴ Street improvement requires coordination with Evanston.

⁵ Water main replacement and redevelopment of 333 Ridge Road may move resurfacing to 2020.

⁶ Stormwater action plan may move resurfacing to a later year.

⁷ Traffic calming eligible.

Surface Description

ABR=Asphalt over brick

APC=Asphalt over concrete

AC=Asphalt Street

PCC=Concrete Street

In 2019 the Village will be reconstructing Central Avenue and Locust Road as part of grant projects. Due to the Village's share for the projects being over \$2 million, these projects will account for the entirety of the 2019 Road Program.

Project Update

The Village's net cost of the Surface Transportation Program (STP) projects is shown in the 2018 table above only which is funded out of the road program. The funding amount of \$2,000,000 has been added to 2022.

In 2017, the following funds were utilized for the Road Program:

MFT:	\$700,000
Dedicated Revenues:	\$954,582
Sewer Repair	\$375,620
Park District	\$66,073
Total:	\$2,096,276

In 2016, the following funds were utilized for the Road Program:

MFT:	\$883,500
Dedicated Revenues:	\$327,011
Total:	\$1,210,511

In 2015, the following funds were utilized for the Road Program:

MFT:	\$820,000
Dedicated Revenues:	\$344,000
Total:	\$1,164,000

In 2014, the following funds were utilized for the Road Program:

MFT:	\$800,000
Dedicated Revenues:	\$48,000
Bond Proceeds	\$0
Total	\$848,000

In 2013, the following funds were utilized for the Road Program:

MFT:	\$800,000
Dedicated Revenues:	\$570,000
Bond Proceeds	\$0
Total	\$1,370,000

Project Alternative

The alternative to pavement rehabilitation is patching on an emergency basis. While patching will slow down the progression of potholes, it creates joints in the pavement that will eventually result in further deterioration. The second alternative is not to perform any roadway maintenance, which will result in total pavement failure. Once the roadway base is impacted from lack of maintenance, the road has to be reconstructed typically at three to four times the cost of resurfacing.

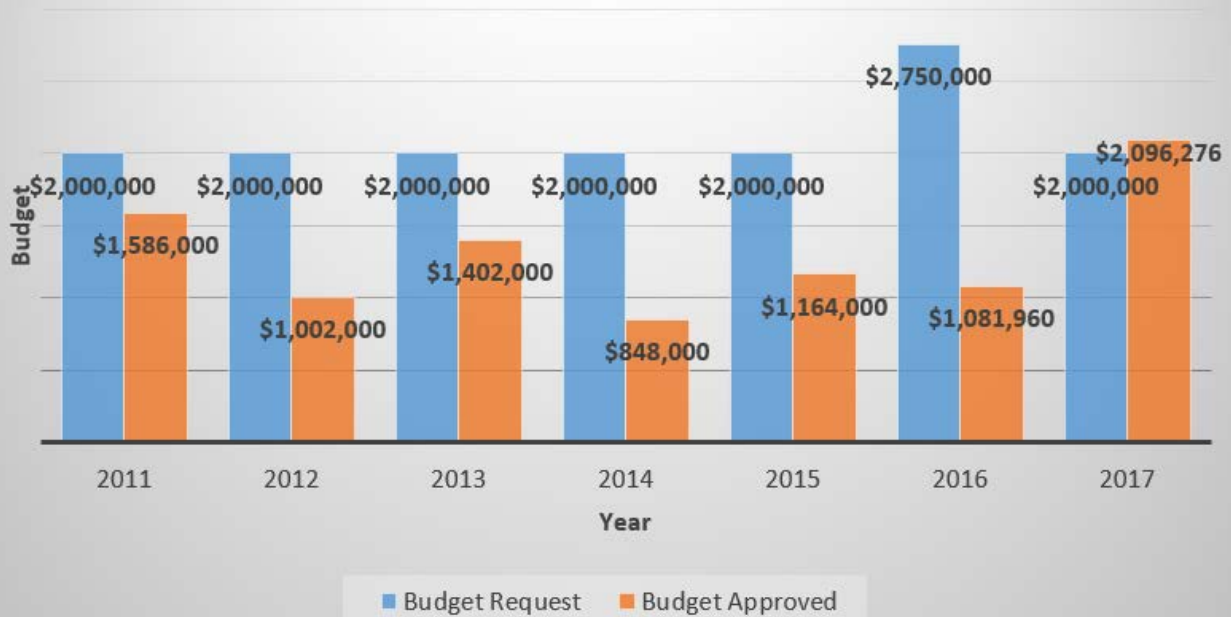
The Village Board approved a Special Service Areas (SSA) policy in 2016 which allows residents to petition for their street rehabilitation to be accelerated at a shared cost.

Operating Budget Impact

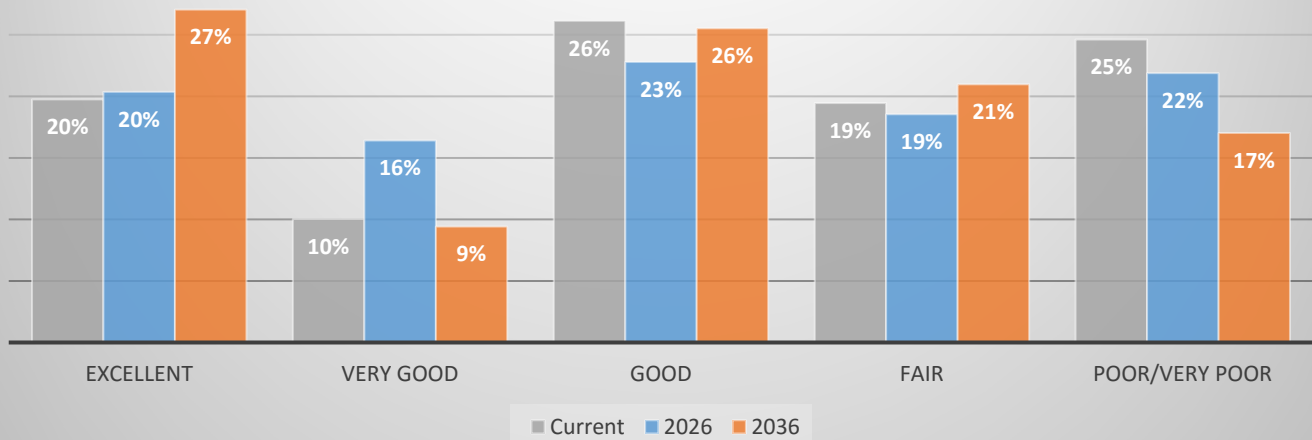
Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	General Fund Capital
Account Number Description	Road Program
Account Number	11202035—80100

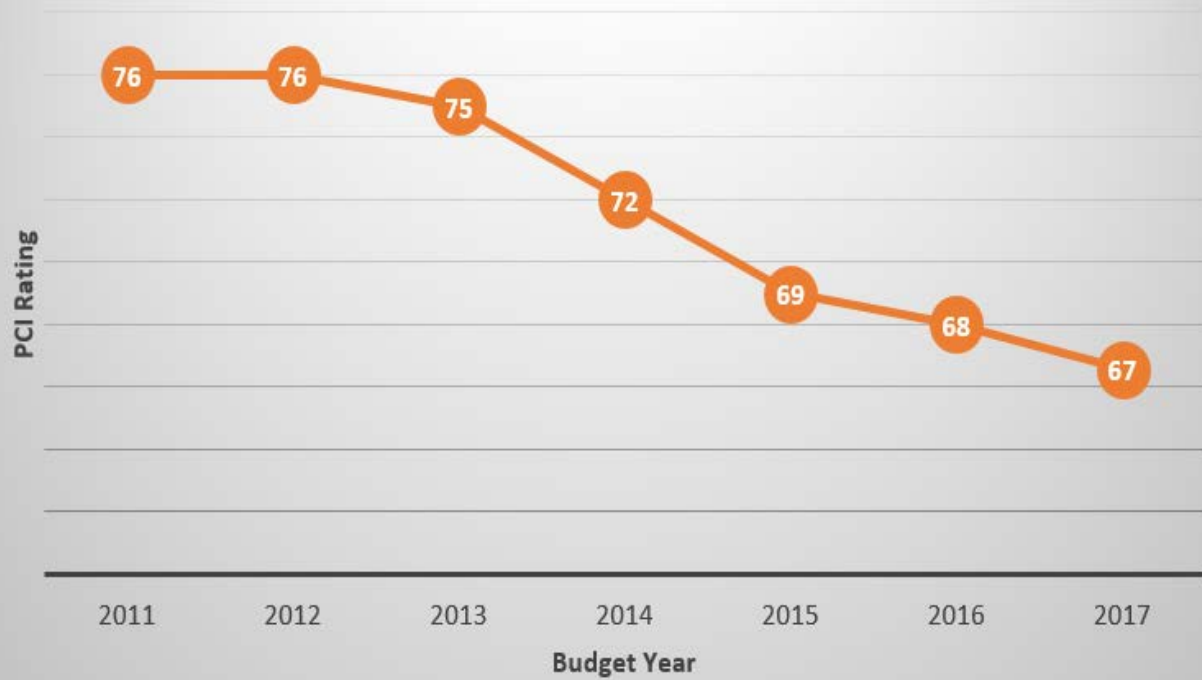
Budget Request vs Approved



Pavement Condition Histogram Projected Road Program Funding \$2M through 2026, \$4M through 2036



PCI Rating vs Time



Alley Replacement Program		2018	\$ 544,700	Operating
Streets, Sidewalks and Alleys		2019	\$ 549,000	
		2020	\$ 574,800	
		2021	\$ 625,200	
		2022	\$ 642,000	
X	Critical			
-	Recommended			
-	Contingent on Funding			

Original Purchase Date & Cost

Unknown

Funding History

Year	Amount	Source	Area (SY)	\$/SY
2017	\$587,670 ¹	Operating	2,825	\$208.02
2016	\$515,000	Operating	3,235	\$159.20
2015	\$836,500 ²	Operating	4,270	\$195.90
2014	\$273,000	Dedicated Revenues/Bond	1,685	\$162.02
2013	\$900,000	Bond	6,350	\$141.73
2012	\$355,000	Dedicated revenues	3,010	\$117.94
2011	\$823,241	Bond	5,660	\$145.45



700 Block of Lake and Washington

¹ Storm sewer portions included in 3 of 4 alleys

² Includes \$130,000 from MWRD for green alleys

With the passage of the increased Home Rule Sales Tax in 2014, a portion of the proceeds was dedicated for street, sidewalk, and alley programs. As a result of the increased revenue, the Board allocated approximately \$515,000 annually with the goal of repairing all failed and poor alleys by 2022.

Project Description & Justification

This program consists of the replacement of existing alleys. As part of the alley reconstruction, the practice is to also improve the drainage conditions to extend the life of the alley, minimize the impact to adjacent properties and improve the level of service. All alleys are proposed to drain by overland flow, however in cases where overland flow cannot not fully address the drainage partial of full storm sewer is utilized. The impact of adding storm sewer is significant in terms of cost so this is used as a last resort. Green alleys were utilized in 2015 which were subsidized by the Metropolitan Water Reclamation District (MWRD) for the upcharge costs over the traditional cost of concrete. Green alleys offer a viable option for alley drainage challenges. Four inch diameter restrictors are added to these systems to increase water retention and reduce downstream impacts.

The definition ratings are as follows:

Rating	Pavement	Drainage
A	Like New	Excellent
B	Minor Cracking	Minor Standing Water
C	Pronounced Cracking	Standing Water
D	Major Cracking and Pavement Settling	Major Standing Water
E	Failed Pavement	Flooding and Hazardous Conditions

The following alleys are rated 'E' (failed) and 'D' (poor) in pavement and/or drainage condition, and were evaluated in 2016. Alleys are evaluated annually in the summer (late June-early July timeframe). All pricing below is based upon 2017 alley pricing. As construction pricing continues to increase annually, the amount of alley reconstruction diminishes and either requires an increase in budget, a reduction in the alley reconstruction or a combination of both. In addition, the 2017 project saw increased pricing due to the addition of storm sewers in multiple alleys.

Estimated completion of all very poor and poor rated alleys is anticipated by 2024, instead of 2022 as originally projected. This is a result of an almost 30-percent increase in reconstruction costs, primarily due to costs related to necessary drainage improvements. Alleys that are unable to drain overland require storm sewers to ensure the integrity of the pavement is maintained and adjacent properties do not flood. Due to cost increases, on order to complete all failed and poor alleys by 2022, the annual budget would have to be increased to \$745,000 (\$856,750 includes 3% annual inflation since 2017).

2018							
Rank #	Alley #	Block	Between	Length	Pavement Rating	Drainage Rating	Cost Estimate ¹
1	306	700	Laurel/Linden	460 ft	E	D	\$155,600
2	228	400	Linden/Greenleaf	450 ft	E	D	\$152,200
6	229	500	Linden/Greenleaf	420 ft	E	D	\$142,100
16	512	1900	Birchwood/Schiller	350 ft	D	D	\$78,900
1680 ft (0.32 miles)							TOTAL: \$528,800
TOTAL +3% annual inflation since 2017: \$544,700							
2019							
3	425	1400	Isabella/Gregory	463 ft	E	C	\$156,600
5	414	1200	Gregory/Maple	625 ft	E	C	\$211,400
7	231	700	Linden/Greenleaf	420 ft	E	D	\$149,900
1508 ft (0.29 miles)							TOTAL: \$517,900
TOTAL +3% annual inflation since 2017: \$549,000							
2020							
4	535 ²	600	Green Bay/Park	465 ft	E	E	\$157,300
8	417	200	15 th /16 th	420 ft	E	D	\$102,600
10	204	700	Washington/Lake	450 ft	D	C	\$152,200
20	331	200	Gregory/Crescent	315 ft	C	D	\$112,500
1650 ft (0.31 miles)							TOTAL: \$524,600

TOTAL +3% annual inflation since 2017: \$574,800							
Beyond 2021							
9	604 ³	1100	15 th /16 th	547 ft	D	C	\$133,600
11	232	800	Linden/Greenleaf	450 ft	D	C	\$152,200
12	127	600	Lake/Forest	426 ft	D	C	\$144,100
13	130	900	Lake/Forest	450 ft	D	C	\$148,000
14	233	900	Linden/Greenleaf	450 ft	D	C	\$160,700
15	212	600	Central/Washington	450 ft	D	C	\$152,200
17	131	1000	Lake/Forest	340 ft	D	C	\$115,000
18	402	500	Linden/Alley 401	370 ft	D	C	\$125,100
19	533	800	Green Bay/Park	630 ft	D	C	\$219,000
21	534	700	Green Bay/Park	500 ft	D	C	\$169,100
22	613	1600	Forest/Walnut	500 ft	D	E	\$131,500
23	214	700	10 th /11 th	495 ft	D	C	\$148,800
24	421	1100	Isabella/Alley 422	192 ft	D	C	\$46,800
25	501	1500	Alley 503/Lake	500 ft	D	C	\$150,300
26	416	1400	Gregory/Maple	463 ft	C	D	\$156,600
TOTAL: \$2,153,000							
	307 ⁴	800	Alley 320/Linden	450 ft	B	C	\$80,000

¹ Estimated costs are based on current 2017 construction pricing and do not include an annual cost increase (index), engineering (soft) costs (such as pavement cores, topography, or material testing).

² Delayed until after completion of 611 Green Bay Road.

³ Pavement rating prior to alley paving in-house by Public Works.

⁴ Proposed reconstruction of east half only if patching (non-utility) funds are not available. East half is rated D in both pavement and drainage condition.

All project costs reflect reconstructing the alleys in conventional concrete. In 2015 the Village of Wilmette received a grant from the Metropolitan Water Reclamation District of Greater Chicago (MWRD) to build four green alleys. MWRD reviewed the project details, cost estimate, and stormwater storage benefits and determined the project will reduce flooding and the burden on the combined sewer system during rain events. A grant was awarded in the amount of \$130,000 to partially fund the installation of green alleys in Wilmette. The grant contribution of \$130,000 reflected the cost differential between building green alleys compared to conventional concrete alleys.

The Municipal Services Committee (MSC) discussed the success of the 2015 program which has performed very well during rain events. Residents have reported the green alleys have significantly better drainage than the original asphalt or concrete alleys. The MSC recommended staff seek additional green infrastructure grant funds from MWRD for the 2018 Alley Reconstruction Program as well as future programs.

Project Update

Funding amounts for 2018-2022 have been updated. Engineering design and construction costs have been identified and budgeted separately.

Project Alternative

The Public Works Department can temporarily patch the alleys with cold patch or sand mix; however, this does not last as it needs to be replaced on a bi-annual or more frequent basis. A hot asphalt or concrete patching program (non-utility) would provide another intermediate option to repair and extend the lifespan of alleys. The asphalt patching should last five to ten years on a stable base, whereas concrete patching lifespan can be decades.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	Engineering
Account Number Description	Alley Replacement Program
Account Number	11202035-425200

Central Avenue Reconstruction	2018	\$ 518,000	STP Grant/Operating (Phase II)
Streets, Sidewalks and Alleys	2019	\$ 6,454,600	(Construction)

X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost

Unknown

Funding History

N/A



Project Description & Justification

The limits of the Central Avenue reconstruction are from Green Bay Road to Sheridan Road. The scope of work includes new curb and gutter, minor drainage improvements, new water main, combined sewer repairs and roadway reconstruction. Sewer point repairs and sewer lining is anticipated to be completed prior to the roadway reconstruction.

The project will be funded through a federal grant which includes 70-percent federal participation for phase II engineering and construction and a 30-percent local share. Following is a summary of costs:

Year	Description	Total Cost	Federal Share	Village Share
2018	Phase II	\$ 518,000 ¹	\$ 362,600	\$ 155,400
2019	Construction ²	\$ 6,454,600	\$ 3,698,100 ³	\$ 2,756,500 ⁴

¹ Phase II consultant engineering costs are paid by the Village up front and reimbursement is sought from IDOT for federal share.

² Construction includes Phase III engineering inspection. Contractor is paid by IDOT and reimbursement is sought from the Village. Engineering inspection is paid by the Village and reimbursement is sought from IDOT for the federal share.

³ The current maximum authorized federal share is \$3,951,099.

⁴ The 2019 construction cost and Village share does not include the Village non-participating costs for water main replacement and emergency vehicle pre-emption which is \$986,000 and \$20,000 respectively. The water main replacement cost is included under the water fund distribution improvements CIP.

Project Update

Costs have been updated to reflect an annual 3% price increase approved by the North Shore Council of Mayors.

Project Alternative

The alternative to using federal funds is to improve the roadway using local funding only.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Department Budget - Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Design & Construction Services		2018	\$ 220,100	Operating
Streets, Sidewalks and Alleys		2019	\$ 230,800	
		2020	\$ 230,900	
		2021	\$ 231,100	
		2022	\$ 237,100	
X	Critical			
-	Recommended			
-	Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

Outsourced design and construction services are recommended annually to facilitate the following core projects:

- Brick Street Renovation
- Road Program
- Alley Replacement Program

The design services include preparation of plans, specifications and cost estimates, topography survey, soils borings and pavement cores, and environmental (soils) services. The construction services includes inspection and materials testing.

PROJECT BUDGETS						
Program	2018	2019	2020	2021	2022	TOTAL
Brick Street Renovation¹	\$257,500	\$417,900	\$347,500	\$253,200	\$260,400	\$1,536,500
Road Program	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$10,000,000
Alley Replacement Program¹	\$544,700	\$549,000	\$574,800	\$625,200	\$642,000	\$2,935,700
PROG. TOTAL BUDGET	\$2,802,200	\$2,966,900	\$2,922,300	\$2,878,400	\$2,902,400	\$14,472,200

PROJECT BUDGETS						
Program	2018	2019	2020	2021	2022	TOTAL
Design & Construction Services						
Material Testing	\$45,200	\$47,900	\$47,100	\$46,400	\$46,800	\$233,400
Pavement Cores	\$44,400	\$47,000	\$46,300	\$45,600	\$46,000	\$229,300
Topographical Survey	\$45,500	\$48,200	\$47,500	\$46,800	\$47,100	\$235,100
Environmental	\$5,000	\$5,300	\$5,200	\$5,100	\$5,200	\$25,800
Total Testing, Cores, Topo, & Environmental²	\$140,100	\$148,400	\$146,100	\$143,900	\$145,100	\$723,600
Road Program Design ³	\$80,000	\$82,400	\$84,800	\$87,200	\$92,000	\$426,400
Total Outsourced Costs	\$220,100	\$230,800	\$230,900	\$231,100	\$237,100	\$1,150,000

¹ Brick street renovation design is performed in-house starting with FY2017 program. Alley replacement design is performed in-house starting with FY2019 program.

² The preliminary design service cost includes the environmental soils assessment, pavement cores and topographic survey, whereas the construction service cost includes material testing. Preliminary design is ideally completed 2 years in advance of construction.

³ The road design is for construction projects in the subsequent year (example: 2018 cost is for the 2019 construction project).

Historically, preliminary design and construction service costs were embedded in the annual programs which decreased the combined core programs budget effectiveness by 5%.

Project Update

This segmentation of design and construction costs was a new request in 2017. Starting in 2018, the outsourced design of the Road Program for \$80,000 (4%) is proposed to ensure in-house staff completes the core alley and brick renovation program designs, quality control/quality assurance of all core/ancillary projects, management of the road program design and oversight of the STP projects. An annual inflation factor of 3% is included.

Project Alternative

The alternative is to hire a full-time staff engineer to perform this work in-house.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Department Budget	Engineering
Account Number Description	
Account Number	

Locust Road	2018	\$147,860 (Phase II)	Grant
Reconstruction	2019	\$2,307,615 (Construction)	Grant
Streets, Sidewalks and Alleys			

- X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost

Unknown

Funding History

N/A



Locust Road between Lake Ave and Wilmette Ave

Project Description & Justification

The limits of the Locust Road reconstruction project are from Lake Avenue to Wilmette Avenue. The scope of work includes new curb and gutter, minor drainage improvements, new water main and roadway reconstruction. In addition, pedestrian and bikeway improvements will be considered.

The project is funded in the North Shore Council of Mayors Surface Transportation Program (STP). The ideal construction timeframe is to minimize construction activity during the school year and maximize work during the summer months. The project will be funded at 70-percent federal participation for phase II engineering and construction and a 30-percent local share, funded through operating and dedicated funds or MFT.

This project was delayed by one year because of complications securing right-of-way. If the Village Board approves the proposed \$95M stormwater action plan, a change order to the design contract will need to occur to facilitate the additional design within this project. The construction costs for this additional storm sewer would also need to be added to the project as a Village cost only. Below is a summary of costs:

Year	Description	Total	Federal Share	Village Share
2014	Phase I	\$80,000	\$0	\$80,000
2017	Phase II (partial) ¹	\$50,000 ²	\$35,000	\$15,000
2018	Phase II (balance) ¹	\$147,860 ²	\$103,500	\$44,360
2019	Construction & CEIII	\$2,307,615 ³	\$1,615,330	\$692,285 ³

¹ Phase II consultant engineering costs are paid by the Village up front and reimbursed by IDOT for the federal share.

² Partial expense of \$50,000 is assumed in 2017, but depends on the approval of the Phase II agreements by IDOT. The total Phase II engineering study cost is \$197,860.

³ The 2019 construction cost and Village share does not include the Village non-participating costs for water main replacement which is estimated to be \$549,000. The water main replacement cost is included under the water fund distribution improvements CIP.

Project Update

Project costs for 2018-2019 have been updated to reflect the actual Phase II proposal cost and 3% price index approved by the North Shore Council of Mayors.

Project Alternative

The alternative to using federal funds is to improve the roadway using local funding only.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Department Budget - Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Skokie/Hibbard Intersection Improvements	2018	\$116,000	(Construction & CE III)
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Streets, Sidewalks and Alleys

X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost
Unknown

Funding History
N/A



Project Description & Justification

Skokie Boulevard and Hibbard Road Intersection

The north leg of Hibbard Road and both legs of Skokie Boulevard are the jurisdiction of the Illinois Department of Transportation (IDOT). The south leg of Hibbard Road is Cook County Department of Transportation and Highways (CCDOH) jurisdiction. The proposed improvements consist of the widening the intersection to provide a left turn lane channelization along all four legs of the intersection. The traffic signals will be replaced / modernized to accommodate the proposed channelization. The new signals will be interconnected with the Lake Avenue and Wilmette Avenue signals along Skokie Boulevard. Pedestrian signals will be added to improve safety for pedestrians and bicyclists. The intersection lighting will be updated to new IDOT standards and the sidewalks will be constructed where segments are missing to provide a uniform system. Sidewalk will be added along the west side of Skokie Boulevard between Hibbard Road and Central Avenue. This critical segment of sidewalk will allow residents to access the Community Recreation Center located at the northwest corner of Skokie Boulevard and Glenview Road. Sidewalk will also be installed on Skokie Boulevard between Hibbard Road and approximately 300' northwest of Hibbard Road on the east side. These locations currently do not have sidewalks. New sidewalks in these location will improve pedestrian access.

The project will be funded through an STP Grant which includes 70-percent federal and 30-percent state and county participation. Since the project is on IDOT and CCDOH jurisdiction roads, the Village's net cost will be limited to roadway lighting, emergency vehicle pre-emption and some minor utility work, estimated to be approximately \$157,940.

Year	Description	Federal Share	State and County Share	Local Share	Total
2014/15	Phase I	\$0	\$225,000	\$0	\$225,000
2015/16	Phase II ^{1,2}	\$126,000	\$54,000	\$0	\$180,000
2017	Phase II ¹ Supplemental	\$60,278	\$25,833	\$26,696	\$112,807
2016	Right-of-Way Acquisition	\$0	\$0	\$0	\$0
2017	Construction ^{3,4}	\$1,788,728	\$715,662	\$117,317	\$2,662,330
2017	Phase III ¹ Inspection	\$102,340	\$43,860		\$146,200
2018	Construction			\$40,623 ⁵	\$40,623
2018	Phase III ¹ Inspection	\$52,640	\$22,560		\$75,200 ⁵

¹ Phase II & Phase III consultant engineering costs are paid by the Village up front and reimbursed by IDOT for the federal share.

² Partial payment of \$150,599 made, reimbursement of \$105,419 (Fed) and \$40,500 (State) for a total of \$145,919 received.

³ Water main replacement is estimated to be \$549,000. The water main replacement cost is included under the water fund distribution improvements CIP.

⁴ The project cost could increase due to the need for winterization as project is expected to finish in 2018.

⁵ Estimated 2018 budget.

Project Update

Project costs for 2017-2018 have been updated to reflect the actual IDOT bid award.

Project Alternative

The alternative to building the intersection improvements is to not improve the intersection and allow the current configuration to remain.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Department Budget - Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Street Patching (Non-Utility) Streets, Sidewalks, and Alleys	2018	\$87,200	Operating
	2019	\$89,800	
	2020	\$92,200	
	2021	\$94,800	
	2022	\$97,400	
X	Critical		
-	Recommended		
-	Contingent on Funding		

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This program is to patch localized areas of deterioration in the pavement. The Village currently has a street patching program that focuses only on street repairs needed due to water main and sewer repairs performed by the Village, but has no program to address non-utility related patch locations on streets or alleys. Many calls come in from residents requesting a more permanent solution than the pothole filling that is performed in-house by Engineering & Public Works. While filling potholes can be an effective procedure for minimally maintaining the pavement, pothole filling is only a temporary fix, and residents will often call back on an annual basis to address the same pavement area. Sometimes a base repair is also needed for a localized pavement area that requires a patch.

A street and alley patching program will allow the Village to address these localized areas where the roadway or alley does not yet qualify and is over 8 years out from resurfacing or reconstruction. This funding amount is anticipated to complete up to 715 SY of pavement patching and increase the overall life cycle of the pavement. Engineering staff has begun to collect an inventory of patch locations from pothole locations performed by Public Works, incident management complaints about pavement conditions, and will expand this further during our road and alley evaluations this year.

The financial model adopted by Village Board in late 2016 provides \$2 million for the Village's Road Program until 2027 at which time the recommended funding level will increase to \$4 million which intends to keep the average street condition in the "good" or better category. However, with funding levels in the past few years being under the recommended target level, the average pavement condition has been declining. A regular patching program would allow some of these deteriorated areas to be addressed and extend the useable life of the roadway before a full reconstruction is necessary.

Due to a growing need for patching and maintenance work related to development projects which impacts the street and alley condition but is not currently addressed through current funding levels, a future consideration can be for an Alley and Street Impact Fee.

Project Update

The funding amount of \$97,400 has been added for 2022. An annual inflation factor of 3% is included.

Project Alternative

The alternative to pavement patching is doing nothing and waiting for the pavement surface to deteriorate to the point where resurfacing or reconstruction is needed. However, once the roadway base is impacted from lack of maintenance, the road has to be reconstructed typically between three to four times the costs of resurfacing. Patching can slow down the decline of the overall pavement condition and improves ride quality.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Department Budget	General Fund Capital
Account Number Description	
Account Number	

Sidewalk Repair Program		2018	\$72,100	Operating
Streets, Sidewalks and Alleys		2019	\$74,200	
		2020	\$76,300	
		2021	\$78,400	
		2022	\$80,500	
X	Critical			
-	Recommended			
-	Contingent on Funding			

Original Purchase Date & Cost

Unknown

Funding History

2017	\$70,000	Operating
2016	\$70,000	Operating
2015	\$55,000	Operating
2014	\$20,000	Operating
2013	\$71,309	Operating
2012	\$27,281	Operating

Project Description & Justification

This project is for the replacement of public sidewalks in various parts of the Village that present a potential tripping hazard.

This is an annual maintenance program to repair damaged sections of sidewalk throughout the Village. The program focuses on replacing sidewalk with a tripping hazard of 1-1/2 inches or greater and also ensures sidewalks are compliant with the American with Disabilities Act (ADA). In addition to sidewalk inspections, the Engineering and Public Works Department replaces all sidewalk hazards reported by residents. Sidewalks with minor cracks and/or ponding of water are not considered liability risks and thus are prioritized below trip hazards. These hazards are first temporarily repaired with an asphalt patch and then permanently replaced with the sidewalk program. It should be noted that the Engineering and Public Works Department also replaces sidewalks in conjunction with the street resurfacing project. There are five sidewalk inspection zones which are inspected and repaired on a rotating yearly cycle.



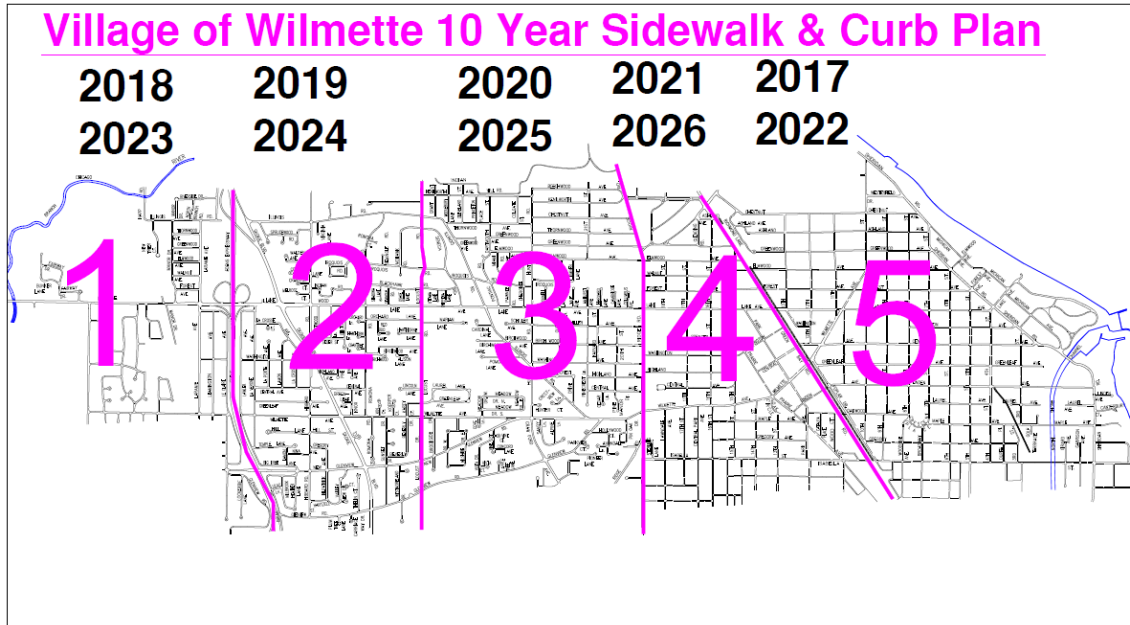
Sidewalk with 1.5" trip hazard



Missing sidewalk



Broken sidewalk with trip hazard



In an effort to incorporate more cost saving opportunities, the Engineering & Public Works Department will also include concrete mud-jacking and sidewalk grinding as options for sidewalk rehabilitation.

The 2016 sidewalk inventory identified 810 sidewalk squares with trip hazards for the 2017 program located in zone 5, of which approximately 350 will be repaired given the current \$70,000 funding level. Total cost to repair all trip hazards is approximately \$145,000. Approximately two thirds of the remaining trip hazards in this area are at 1-1/2 inch depth.

The Village is one of several municipalities participating in the municipal consortium. The benefit of joint bidding with other agencies is to increase the size of the contract with the goal of reducing overall contract cost. The curb replacement program and sidewalk program are being bid with the consortium. The Village is considering bidding the sidewalk and curb programs separate from the consortium in the future, or potentially including this work as part of a bid on a larger concrete project, such as the Alley Replacement Program for better pricing.

Project Update

The funding amount of \$80,500 has been added to 2022. An annual inflation factor of 3% is included.

Project Alternative

The alternative is to patch the sidewalks with asphalt. This will result in increased maintenance (the asphalt will not last more than a season) and it will cost more to replace sidewalks in the long term. Furthermore, the asphalt patches are considered aesthetically unpleasing by some residents.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	Engineering
Account Number Description	Sidewalk Repair Program
Account Number	11202035-425000

Skokie/Lake Intersection

STP Grant/Operating

Improvements

	2018	\$	70,000 (Phase I)
Streets, Sidewalks and Alleys	2019	\$	75,783 (Phase II)
Skokie-Lake Intersection Improvements	2020	\$	\$1,362,032 (Construction & CEIII)

- X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost

Unknown

Funding History

N/A

**Project Description & Justification**

Skokie Boulevard is the jurisdiction of the Illinois Department of Transportation (IDOT). Lake Avenue west of Ridge Road is Cook County Highway Department (CCHD) jurisdiction. The existing intersection does not meet Public Right-of-Way Accessibility Guidelines (PROWAG) and is a safety concern. The traffic signals also do not meet current Manual on Uniform Traffic Control Devices (MUTCD) standards and IDOT design requirements. Safety will be improved by eliminating corner islands and by providing tighter corner radii in the NE and SW corners, which aids in slowing down traffic at the intersections, hence creating more safe crossing conditions for pedestrians. More visible crosswalks will be added and relocated to locations that reduce the crossing distances. New traffic signals will be provided that meet the current standards, and curb ramps will be upgraded to become ADA compliant. Additional left turn storage will also be provided to meet the traffic needs.



More visible crosswalks will be added and relocated to locations that reduce the crossing distances. New traffic signals will be provided that meet the current standards, and curb ramps will be upgraded to become ADA compliant. Additional left turn storage will also be provided to meet the traffic needs.

The project will be funded through an STP Grant which includes 70% federal and 30% state and county participation for Phases II and III, while Phase I will be 100% local participation. Since the project is on IDOT and CCDOTH jurisdiction roads, the Village's cost is anticipated to be limited to construction costs for emergency vehicle pre-emption (estimated at \$20,000) and intersection

lighting (estimated at \$300,000). If the Village Board approves the proposed stormwater project, a change order to the design contract will need to occur to facilitate the additional design within this project. The construction costs for this additional storm sewer would also need to be added to the project as a Village cost only.

Year	Description	Total Cost	Federal Share	State Share	Local (County) Share ¹	Net Village Cost
2018	Phase I	\$70,000	\$0	\$35,000	\$35,000	\$0
2019	Phase II ²	\$75,784	\$53,048	\$11,368 ³	\$11,368	\$0
2020	Construction	\$1,362,032	\$729,422	\$156,305 ⁴	\$156,305	\$320,000 ⁵

¹ Requires an intergovernmental agreement with Cook County (CCDOTH) and IDOT.

² Phase I & II consultant engineering costs are paid by the Village upfront and reimbursement is sought from IDOT (federal and state shares) and the County.

³ Current IDOT agreement is for \$11,040 which will be revised during engineering design.

⁴ Current IDOT agreement is for \$151,800 which will be revised during engineering design.

⁵ Vehicle pre-emption and intersection lighting are 100% Village costs. This cost is an estimate only as the scope of work has not been defined yet.

Project Update

Costs have been updated to reflect an annual 3% price index approved by the North Shore Council of Mayors.

Project Alternative

The alternative to building the intersection improvements is to not improve the intersection and allow the current configuration to remain.

Operating Budget Impact

Is this purchase _____ routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Brick Street Repairs

Streets, Sidewalks and Alleys

2018	\$52,800	Operating
2019	\$54,300	
2020	\$55,900	
2021	\$57,400	
2022	\$59,000	

- X Critical
- Recommended
- Contingent on Funding

Types of Maintenance



Original Purchase Date & Cost

Unknown

Funding History

2017	\$136,000	Operating
2016	\$136,000	Operating
2015	\$50,000	Dedicated revenues
2014	\$40,000	Dedicated revenues
2013	\$40,000	Dedicated revenues
2012	\$132,000	Dedicated revenues

Project Description & Justification

This is an annual maintenance program to repair and relay brick pavers that have settled in various locations throughout the Village. In addition, the areas where the edge of pavement has fallen below the gutter line will be repaired. This settlement creates trip hazards, drainage problems, and vehicle damage.

In a 2017 survey of 2/3 of the Village's brick streets, staff identified at least 18,000 square feet of brick with significant depressions and another 17,000 square feet of brick with rutting and edge settlement. The cost for brick street repairs averages \$12-\$14 per square foot for a total cost range of \$420,000 - \$490,000. The table below represents a fully funded brick street maintenance plan.

Year	Patching	Brick Purchase	Total
2018	\$44,880	\$7,920	\$52,800
2019	\$46,150	\$8,150	\$54,300
2020	\$47,520	\$8,380	\$55,900
2021	\$48,790	\$8,610	\$57,400
2022	\$50,160	\$8,840	\$59,000
Total	\$237,500	\$41,900	\$279,400

Project Update

The funding request for 2018 has been reduced from \$136,000 to \$52,800. The balance of funds will be used to help fund a new roadway patching program (see CIP detail sheet on page 18).

Project Alternative

The alternative is to do nothing which can lead to increased liability resulting from car damage caused by settled pavers.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	Engineering
Account Number Description	Brick Street Repair
Account Number	11202035-425230

Pavement Marking Program

Streets, Sidewalks and Alleys

	2018	\$51,500	Operating
	2019	\$53,000	
	2020	\$54,500	
	2021	\$56,000	
X	Critical	2022	\$57,500
-	Recommended		
-	Contingent on Funding		

Original Purchase Date & Cost

Unknown

Funding History

2017	\$50,000
2016	\$50,000
2015	\$40,000
2014	\$20,000
2013	\$20,000
2012	\$20,000
2011	\$40,000

Project Description & Justification

This safety program is for restriping pavement markings throughout the Village.

The pavement marking program stripes existing and new lane lines, center lines, school crosswalks, railroad crossings, stop bars, edge lines, and speed humps on Village streets. Pavement markings provide benefit to motorists, pedestrians and cyclists. The deterioration of pavement markings on Village streets varies. The life cycle of thermoplastic pavement marking on major streets is between two to five years and the life cycle for water-based paint pavement marking is yearly. The life cycle on residential streets is between five and eight years. Traffic volume and weather contribute the most to the deterioration of pavement marking (snowplows, salt, and rough pavements). Pavement marking is mandated by the Federal Highway Administration in the Manual for Uniform Traffic Control Devices (MUTCD) and the State of Illinois.

Staff determined that the previous funding level of \$20,000 was inadequate to keep up with the amount of striping needed on an annual basis. As a result, a detailed pavement marking inventory was completed in 2009 to quantify the amount of annual striping necessary to maintain adequate pavement markings on Village streets.

In recent years a large number of streets were striped as a part of traffic calming plans. Hunter Road, for example, was striped with centerlines, edge lines, and parking lanes for purposes of lane delineation and traffic calming. Also, concrete surfaces require epoxy pavement markings, which are approximately double in cost. Concrete speed bumps and concrete bridges require extensive striping

with epoxy material. Winter weather and excessive snow plowing have contributed to reduced striping visibility throughout the Village. Finally, arterial striping on high volume roads such as Sheridan Road, Lake Avenue, Ridge Road, Green Bay Road, and Glenview Road (west of Skokie) has been added to the Village street system, increasing the footage of pavement marking required every two to three years. Pavement marking is a safety element of road maintenance.

Project Update

The funding request of \$57,500 has been added to 2022.

Project Alternative

The striping is contracted out and is performed using thermoplastic and epoxy material. Public Works does not have the equipment to install thermoplastic or epoxy striping. Thermoplastic or epoxy will last approximately five times longer than water-based paint. In order to increase the amount of pavement marking footage installed by public works, additional personnel and a budget increase for materials to do the striping would be necessary.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	Engineering
Account Number Description	Pavement Marking Program
Account Number	11202035-425220

Brick Street Renovation Project	2018	\$257,500	Operating
Streets, Sidewalks and Alleys	2019	\$417,900	
	2020	\$347,500	
	2021	\$253,200	
	2022	\$260,400	
- Critical			
X Recommended			
- Contingent on Funding			

Original Purchase Date & Cost

Unknown

Funding History

2017	\$319,583	Operating
2016	\$293,060	Operating
2015	\$286,098	Operating
2007	\$220,338	Operating



With the passage of the increased Home Rule Sales Tax effective January 1, 2015, a portion of the proceeds was dedicated for streets, sidewalk, and alley programs. As a result of the increased revenue, the Board allocated approximately \$240,000 annually of the additional revenue for this project.

Project Description & Justification

There are approximately 11 miles of brick streets in Wilmette which were originally constructed in the early 1900s. The bricks were re-laid during the 1930s and have received little maintenance since. The 2012 brick street survey identified 18 blocks in “very poor” condition and 41 blocks in “poor” condition. The requested funding level will renovate approximately one to two blocks. The estimated cost of reconstructing all 18 very poor blocks is \$4.80 million.

The 2017 brick survey determined there are 154 blocks of brick streets which will grow one additional block per year as the brick reconstruction has 28 blocks of asphalt overlaid brick that are planned to be returned to brick. The brick survey determined 13 blocks have been identified in “very poor” condition and 47 blocks are in “poor” condition.

In 2017, 14th Street is being renovated from Gregory Avenue to Maple Avenue.

Future Brick Programs

In 2018, staff will look at a modified design strategy of maintaining as much of the existing pavement base as possible and regrading it to achieve proper drainage. This strategy is predicated on existing base conditions that are structurally sound. The modified strategy will result in a lower unit cost for rehabilitation. Brick renovation estimates that exceed the \$240,000 are primarily a result of longer blocks that have a higher square footage to rehabilitate.

Engineering staff inspected and ranked the condition of all of the brick streets in 2017 and recommends the following program for 2018-2022:

Year	Block	Street	Brick Area (SF)	Reno	Brick Purchase	Total
2018	200	Catalpa Place	10,400	\$232,540	\$24,960	\$257,500
2019	200	Wood Court	18,175	\$374,250	\$43,620	\$417,870
2020	300	Oak Circle	14,696	\$312,170	\$35,270	\$347,440
2021	300	14 th Street	10,420	\$225,120	\$25,010	\$253,130
2022	800	Oakwood	10,437	\$235,290	\$25,050	\$260,340
Total				\$1,379,370	\$153,910	\$1,536,280

Project Update

Funding amounts have been updated for 2018-2022. Outsourced costs have been identified and budgeted for in a separate CIP item. An annual inflation factor of 3% is included.

This project was deferred from 2008-2014.

Project Alternative

The alternative is not to renovate brick streets. This will result in continued deterioration, increased liability and deferred cost in the future. Removing the bricks and rebuilding the street in asphalt would be cost prohibitive and likely very unpopular with the residents.

The Department will evaluate the extent of base repair based on information obtained from pavement cores. If the existing base is acceptable, a cost savings may be possible. An additional option to complete base removal and repair is base patching at locations with a poor base. This can be determined during construction.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs	\$60 per block to sand
Personnel Costs	None
Training Costs	None

Curb Replacement Program

Streets, Sidewalks and Alleys

2018	\$42,200	Operating
2019	\$43,400	
2020	\$44,700	
2021	\$45,900	
2022	\$47,100	

- Critical
- X Recommended
- Contingent on Funding

Original Purchase Date & Cost

Unknown

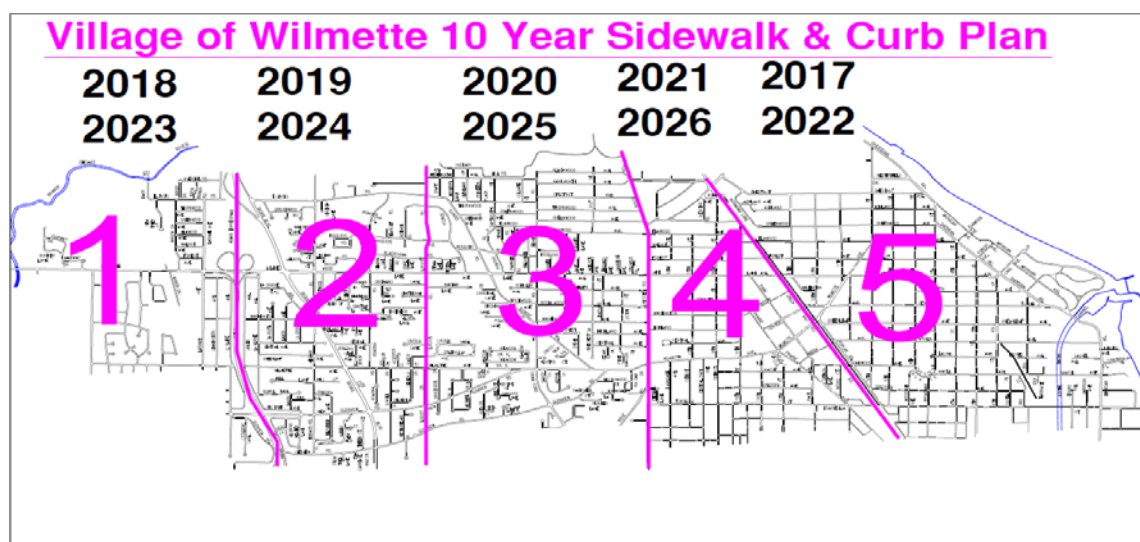
Funding History

2017	\$40,000	Operating
2016	\$40,000	Operating
2015	\$10,000	Operating
2014	\$8,000	Operating
2013	\$20,000	Operating
2012	\$8,448	Dedicated Revenues



Project Description & Justification

This project funds the annual maintenance program to replace non-functional, hazardous, broken and missing curbs throughout the Village. It is for the replacement of curbs and gutters that no longer facilitate positive drainage and/or has deteriorated in various locations throughout the Village. The Village staff evaluates curbs on a five year rotating cycle in conjunction with the Sidewalk Program.



The Village is one of several municipalities participating in the municipal consortium. The benefit of joint bidding with other agencies is to increase the size of the contract with the goal of reducing overall contractual cost. The curb replacement program and sidewalk program are being bid with the consortium. The Village is considering bidding the sidewalk and curb programs separate from the consortium in the future, or potentially including this work as part of a bid on a larger concrete project, such as the Alley Replacement Program for better pricing.



Broken and missing curb with potential to damage vehicles

Project Update

The funding amount of \$47,100 has been added to 2022. An annual inflation factor of 3% is included.

Project Alternative

The alternative is not to replace curbs. Curbs that result in poor street drainage will cause accelerated deterioration of the edge of pavement resulting in potholes and the necessity for additional maintenance.

Operating Budget Impact

Is this purchase *routine* *X* or *non-routine*?

ROUTINE	
Department Budget	Engineering
Account Number Description	Curb Replacement Program
Account Number	11202035-425100

Crack Sealing Program	2018	\$41,200	Operating
Streets, Sidewalks and Alleys	2019	\$42,400	
	2020	\$43,600	
	2021	\$44,800	
	2022	\$46,000	
- Critical			
X Recommended			
- Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

2017	\$40,000	Operating
2016	\$40,000	Operating
2015	\$10,000	Dedicated Revenues
2014	\$10,000	Dedicated Revenues
2013	\$10,000	Dedicated Revenues
2012	\$10,000	Dedicated Revenues

Project Description & Justification

This program is designed to perform preventive maintenance on resurfaced asphalt streets throughout the Village by sealing cracks that have developed or expanded. The goal of this maintenance program is to extend the life cycle of these pavements. Crack sealing “seals” the pavement surface and prevents moisture from reaching the base, causing further degradation.

The Village currently funds resurfacing of approximately 1 to 2 miles per year of the existing 66 miles of asphalt streets. Crack sealing has been shown to be one of the best and most cost effective preventative maintenance techniques to prolong the lifespan of asphalt pavements. The 2018 funding level will allow for the sealing of approximately 0.5 to 1 miles annually depending on the amount of cracks being filled. A fully developed crack sealing program is first initiated on roads after 3 or 4 years of age and is repeated every 4 to 5 years until the roadway is usually within 5 to 7 years of the next planned resurfacing, excepting pavements that are showing signs of alligator cracking.

The table below represents streets tentatively scheduled for crack sealing in FY2018-2021.

Year	Street	From	To
2018	6 th St	Isabella	Maple
2018	7 th St	Greenleaf	Lake
2018	Dupee Pl	Gregory	Maple
2018	Hill Ln	Hibbard	Cul-de-sac
2018	Melrose Ct	Hibbard	Cul-de-sac

2018	Walden Ln	Hibbard	Cul-de-sac
2019	7 th St	Sheridan	Lake
2019	Harvard St	Lake	Washington
2019	Laurel Ave	Woodbine	4 th
2020	5 th St	Greenleaf	Forest
2020	Gregory Ave	15 th	Park
2020	Hollywood Ct	Old Glenview	Cul-de-sac
2020	Avondale Ln	Hollywood	Cul-de-sac
2021	Big Tree Ln	Glenview	Lawler
2021	Lawler Ln	Big Tree	Temple
2021	Ouilmette Ln	Washington	Lake
2021	Poplar Dr	Isabella	Wilmette

The Village is one of several municipalities participating in the municipal consortium. The benefit of joint bidding with other agencies is to increase the size of the contract with the goal of reducing overall contract cost. The crack sealing program has been part of the municipal consortium since 2010.

Project Update

The funding request of \$46,000 has been added for 2022. An annual inflation factor of 3% is included.

Project Alternative

The alternative is not to crack seal Village streets, which will result in accelerated pavement deterioration.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Street Light Pole Painting

Streets, Sidewalks and Alleys

2018	\$37,105	GF - Operating
2019	\$38,105	
2020	\$39,250	
2021	\$40,425	
2022	\$41,640	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

2017	\$65,325.00 (319 poles)
2016	\$24,983.16 (122 poles)
2015	\$24,983.16 (122 poles)
2014	\$12,286.80 (60 poles)
2006	N/A
2003	N/A

**Project Description & Justification**

This request provides for the scraping, priming and painting of approximately 181 decorative green light poles and provides for a 5-year cycle for light poles located along arterial streets (or approximately 73 annually, 362 total) and a 10-year cycle for those located along neighborhood side streets (or approximately 108 annually, 1,084 total). Additionally, there are 93 decorative green light poles in the system which contain lead paint. Staff has identified a pole replacement process outlined on page 39.

Staff recommends a two-tier cycle (i.e. arterial and side streets) based on review of results from prior refurbishing projects completed in 2003 and 2006 and added wear and tear from snow and ice control operations (i.e. salting applications) for street light poles located along arterial streets. Over time, the condition of the paint deteriorates, exposing bare metal leading to corrosion, attributed to continual, open exposure to the elements. As a result, painting is viewed as an ongoing, routine maintenance project, which should be performed periodically, preferably annually.

Overall, there are approximately 2,291 street lights in the system of which 649 are constructed of concrete and require no painting. There are also 103 decorative black light poles (aluminum construction, 14-foot length) located in the Village Center and Central Business District areas. The remaining 1,539 decorative green light poles are manufactured of cast iron or aluminum and have lengths of 10 and 12-feet.

The Village's decorative green light poles were previously painted and rehabilitated during the multi-year street lighting improvement project which concluded in 2003 (1,179 light poles); the remaining balance of 360 light poles were painted in 2006. Since 2014, the Village has approved annual budgets for contractual light pole painting with an amassed total of 521 light poles refurbished, located in the following areas:

- South of Wilmette Ave between Ridge Rd and Green Bay Rd. (202 poles)
- Entire area between Ridge Rd and Green Bay Rd, north of Wilmette Ave (187 poles)
- Old Glenview Road between Sunset and Crawford Ave (48 poles)
- Area between Green Bay Rd and 10th street, north of Greenwood Ave (84 poles)

Project Update

The 2018 projected budget has decreased from \$65,395 to \$37,105 based on final results of lead paint testing of light poles, completed in the fall of 2017. Initially, staff projected 33% of all light poles to contain lead paint, however, testing results exhibited a much smaller percentage (6%) or 93 light poles. The current cost to refurbish decorative green light poles (no-lead) is \$204.78 each as compared to projected \$800 each for a light pole containing lead paint, therefore a reduction in the requested budget. As stated above, staff is presently in the process of reviewing options to determine best course of action for the 93 light poles containing lead-paint, includes, abatement and refurbishment from licensed firm and/or replacement.

Project Alternatives

There are several alternatives that could be explored, including, deferment or extending out the refurbishing/painting cycle of decorative green light poles from 6/12 years or 7/14 years. However, staff recommends implementation of the 5/10 year cycle which aligns with the painting cycle for fire hydrants. Regardless of the initial cycle length selected, a condition assessment of light poles will be performed after implementation to determine ideal cycle length from a best management perspective. Denoted below are cost projections for each respective cycle.

- 5/10-year cycle = 181 light poles refurbished annually or \$37,105 total (2018)
- 6/12-year cycle = 150 light poles refurbished annually or \$30,750 total (2018)
 - Annual savings of \$6,355 as compared to 5/10 cycle
- 7/14-year cycle = 129 light poles refurbished annually or \$26,445 total (2018)
 - Annual savings of \$10,660 as compared to 5/10 cycle

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Department Budget	Engineering & Public Works / Street Lighting
Account Number Description	Street Light Pole Painting
Account Number	11333030-422210

Street Light Pole Purchase	2018	\$28,235	GF - Operating
Streets, Sidewalks and Alleys	2019	\$28,235	
	2020	\$28,235	
	2021	\$28,235	
	2022	\$28,235	
- Critical			
X Recommended			
- Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This request provides for the purchase of approximately 14 decorative green light poles (12-foot length) and provides for a 7-year replacement cycle for light poles containing lead paint.

Overall, there are approximately 2,291 street lights in the system of which 649 are constructed of concrete and require no painting. There are also 103 decorative black light poles (aluminum construction, 14-foot length) located in the Village Center and Central Business District areas. The remaining 1,539 decorative green light poles are manufactured of cast iron or aluminum and have lengths of 10 and 12-feet.

In 2016, the Village hired an inspector, licensed through the State of Illinois –Department of Public Health, to test all 1,539 decorative green light poles. Initially, staff projected 33% of all decorative green light poles to test positive, however, testing results exhibited a much smaller percentage (6%) or 93 light poles. This effort coincided with the Village’s street light pole painting/refurbishing program which has a total 319 light poles scheduled for abrasive blasting and painting in 2017.

From a long-term perspective and cost/benefit standpoint, staff recommends replacing all light poles containing lead paint with new poles as compared to pursuing abatement and refurbishment from a licensed firm. Abatement cannot be safely conducted in the field and requires removal of existing poles and transport to a facility for refurbishing. Therefore, removal and installation of a new street light pole is cost neutral. Additionally, many of these poles which tested positive are estimated to be 80-90 years of age, constructed of cast iron and exhibit signs of corrosion.

If approved, the replacement program would extend over approximately seven years, commencing in 2018 and ending in 2024. The projected cost for a 12-foot decorative light pole is \$2,000 each (aluminum construction) and staff will look to repurpose existing luminaire heads at a savings of \$1,000 each.

Project Update

This is a new project for 2018.

Project Alternatives

There are several alternatives which include providing no funds and paint decorative poles without abrasive blasting and minimal hand scrapping (does not address corrosion problem) or reduce funds and replace decorative light poles containing lead paint over a longer duration.

Pavement Surface Rejuvenation	2018	\$16,400	Operating
Streets, Sidewalks and Alleys	2019	\$16,900	
	2020	\$17,400	
	2021	\$17,900	
	2022	\$18,400	
- Critical			
X Recommended			
- Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

\$6,000 Test program in 2017

Project Description

Reclamite is a pavement surface rejuvenator that penetrates asphalt pavements and restores pavement surface flexibility that has been lost from the asphalt due to oxidation. Applying Reclamite to new pavement helps decrease deterioration of the asphalt surface dramatically, reducing and/or delaying the need for more expensive surface treatments such as patching or crack sealing. Reclamite can also be applied to pavements showing light hairline cracking, light raveling, segregation, light pitting, and dryness. The application period is typically 2-3 years after new pavement surface installation.

A pilot program was initiated in 2017 as part of the Municipal Partnering Initiative. The following list of locations is planned for 2018:

2015 Road Projects

Hill Lane (Hibbard Rd to W. Cul-de-sac)

2016 Road Projects

Harvard Lane (Lake Ave to Washington)

An annual inflation factor of 3% is included. The 2018 funding level represents an incremental approach to an overall pavement management strategy. The planned locations for this program going forward is to apply the rejuvenator to the road program asphalt streets two years in arrears.

Project Update

This project is new for 2018.

Project Alternative

The alternative to funding this project is to continue maintaining pavements with higher usage of crack sealing and non-utility based patching until they are resurfaced.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

NON-ROUTINE	
Maintenance Costs:	No additional costs – pavements will continue to be maintained
Personnel Costs:	No additional cost – the Village currently maintains pavements as deficiencies arise
Training Costs:	None

Streetscape Furniture Purchase	2018	\$15,000	GF - Operating
Streets, Sidewalks and Alleys	2019	\$15,000	
	2020	\$15,000	
	2021	\$15,000	
	2022	\$15,000	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This request is for purchase and replacement of Village streetscape furniture, approximately 21 items per year, spread across a 6-year period.

In total, there are approximately 127 pieces of streetscape furniture which includes trash receptacles (metal and concrete construction), park benches (metal construction with varying lengths of 4', 6' and 8') and bike racks (metal construction with varying storage capacities of 2, 3 and 5 bikes). The trash receptacles are serviced bi-weekly under the residential solid waste collection contract. While items have been introduced and replaced at different times over the years, much of the existing inventory is 20+ years of age.

Streetscape furniture is located in the following areas:

- Downtown Area (22 trash receptacles, 20 park benches)
- Green Bay Road (3 trash receptacles, 3 park benches and 16 bike racks)
- Linden Square and CTA (7 trash receptacles, 6 park benches and 12 bike racks)
- METRA Station (5 trash receptacles, 6 park benches and 10 bike racks)
- Bus Shelters (13 trash receptacles)
- Ridge Road (2 trash receptacles, 1 park bench)
- Sheridan Road –pathway under bridge (1 trash receptacle)

In 2016, staff conducted an inventory and condition assessment of all streetscape furniture. Results of the survey indicate 49 items to be in fair to poor condition, 69 items in average condition and 9 items to be in good condition. Streetscape furniture is exposed to outdoor elements on a year round basis with natural weathering as the primary driver for deteriorating condition. Over the years, staff

has rehabilitated inventory to address condition concerns, however, corrosion issues remain due to metal construction and advancing age.

The projected unit costs for replacement are as follows:

- Trash Receptacles (30-40 gallon) \$700 each
- Park Benches (lengths of 4', 6' and 8') \$700 to \$900 each
- Bike Racks (2, 3 and 5 bikes) \$250 to \$600 each

Project Update

This is a new project for 2018.

Project Alternatives

There are several alternatives which include providing no funds and continue rehabilitation with in-house resources or reduce funds and replace streetscape furniture over a longer duration.

Stamped Concrete Paver Replacement

Operating

Streets, Sidewalks and Alleys	2019	\$15,500
	2020	\$15,900
	2021	\$16,400
	2022	\$16,900

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

2016 \$5,580

Funding History

2016 \$5,580

Project Description & Justification

This project is for the replacement of sunken brick pavers that pose a trip hazard in public sidewalks. The paver strips between sidewalk squares or along the curb line settle over time due to the bedding sand washing out. Several resident call-ins have reported tripping in addition to staff observations of the settled brick. In lieu of replacing the brick pavers, which can settle in the future as the sand is weathered away, staff recommends using stamped concrete with an integral color to simulate a brick appearance and reduce the problem with settling.

The initial focus will be on reported trip hazards as well as inspections of brick paver areas in the Village Center.

Project Update

This project was successfully completed in 2016 as part of the sidewalk replacement program in various areas in the Village Center. An annual inflation of 3% is included. This represents a pro-rated portion of the 0.33% to 1% per year pavement maintenance strategy.

Project Alternative

The alternative is to reset the brick pavers. While this may cost less initially, the pavers can settle again within 2-5 years, requiring additional maintenance. This will result in increased cost over the life of the pavers.

Another alternative is to replace the brick paver areas with regular concrete. In 2016, the cost of stamped color concrete was approximately \$18/SF, compared to the cost of regular concrete, which was \$5.50/SF—more than 3 x's the cost of regular concrete. Although it may not provide the same

aesthetic appearance as brick, it means 3 x's more work can be accomplished using the regular concrete.

Finally, the last alternative is to do nothing which can lead to increased liability from tripping hazards.

Operating Budget Impact

Is this purchase *routine* *X* or *non-routine*?

ROUTINE	
Department Budget	Engineering
Account Number Description	
Account Number	

Skokie Valley Trail	2018	\$25,500	(Phase I)	Grant
(Formerly Five-Village Bike Trail)	2019	\$2,735,000	(Phase II/ROW)	
Streets, Sidewalks and Alleys	2020	\$7,748,000	(Construction)	

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description

The concept of a Skokie Valley Trail was derived from Wilmette's Bicycle Task Force approximately ten years ago. The goal of the project is to convert the discontinued Union Pacific Railroad corridor, located west of Laramie Avenue, into a multi-use pedestrian and bike trail. The limits of the proposed trail are from Lake Cook Road on the north end to Dempster Street in Skokie on the south. This 8.2 mile corridor fills a gap in the regional path with connectivity from Wisconsin to the City of Chicago.

In July of 2017, the Village (along with Glenview, Skokie and Northfield) learned it received a grant from Cook County for a portion of the Phase I engineering study. A financial summary is as follows:

Year	Description	Costs	Grant	Local Share
2017/18	Phase I- Engineering Study	\$290,000	\$188,000	\$25,500/per agency
2019	Phase II- Engineering Study	\$493,000	TBD	TBD
2019	Right-of-Way Acquisition	\$2,242,000	TBD	TBD
2020	Construction	\$7,748,000	TBD	TBD
	Total	\$10,976,000		

Project Update

A grant from Cook County was received in 2017 for a portion of the Phase I engineering study.

Project Alternative

The alternative to funding the trail with grant funds is to fund it through local appropriations.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	\$2,500 - \$5,000 per mile per year for contractual landscaping. \$10,000 per mile per year if grass cutting is included
Personnel Costs:	\$950 - \$1,400 in-house personnel cost (40-60 hours per year)
Training Costs:	None

Streetscape Improvements / Ridge Road

Streets, Sidewalks and Alleys

2019 \$ 200,000 Grant

2020 \$1,700,000

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description

This budget request includes adding streetscape improvements to the Ridge Road business district.

Improvements include new roadway lighting, trees, tree pits, adding electrical services for holiday lights, plantings, street furniture, and sidewalks. The sidewalks will contain a brick border similar to the sidewalks in the Village Center.

The work proposed for \$200,000 in 2019 is for project design and \$1,700,000 in 2020 is for construction of the streetscape improvements along Ridge Road. The work will consist of sidewalk treatments, new lighting, streetscape furniture, trees, and landscaping.

Project Update

No changes to this CIP item.

Project Alternative

Replace the lighting system only at a cost of \$450,000.

Operating Budget Impact

Is this purchase *routine* ____ or X *non-routine*?

NON-ROUTINE	
Maintenance Costs:	\$7,000 per mile per year in various contractual maintenance
Personnel Costs:	\$2,350 - \$3,500 in-house personnel cost (100-150 hours per year)
Training Costs:	None

**Bicycle Master Plan
(Consultant Services)**

2019

\$80,000

Grant

Streets, Sidewalks and Alleys

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description

On June 10, 2016, a temporary advisory group was established to assist in the development of a bicycle master plan that meets the needs of all roadway users. The advisory group has been tasked with developing recommendations on a community process to engage the public in the master plan development and to develop the scope of work for a consultant to prepare a comprehensive plan. The master plan will be developed with community input through various stakeholder meetings and consideration given to the results of the bike survey conducted in 2015.

The advisory group has been tasked with identifying funding strategies for the development of the master plan/consultant services.

In March 2017, staff applied for a County grant through the *Invest in Cook* program, which can be applied towards planning efforts. Eight and one-half million dollars (\$8.5M) are dedicated to the program. The Village requested \$60,000 to go towards hiring a consultant to prepare the master plan with a \$20,000 local match. Grant recipients will be notified sometime in August 2017.

Project Update

None.

Project Alternative

The alternative to hiring a consultant is to hire a full-time employee to prepare the master plan.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Department Budget - Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Decorative/Roadway Street Lights	2018	\$ 77,300	Operating
Streets, Sidewalks and Alleys	2019	\$117,200	
	2020	\$ 42,500	

- Critical
Recommended
X Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

N/A



Project Description & Justification

The Village's street lighting policy allows residents to petition the Village for changes, modifications and additions to their street lighting. The petitions are reviewed by the Municipal Services Committee (MSC) of the Village Board. If the Committee determines the terms of the policy are met, the project is placed in the capital improvement program. The projects below have been reviewed by the MSC and are recommended for inclusion on the CIP.

As an option to funding these project with public funds, in 2016, the Village Board approved a special service area policy that allows residents to fund capital projects through taxes over an established number of years.

Lawler Avenue - \$77,300

Install new street lighting on Lawler Avenue, in the 500 and 600 blocks. This project was the result of a resident petition from the Lawler Avenue neighbors. The request was reviewed and recommended by the Municipal Services Committee in 2017.

Iroquois Road - \$117,200

Remove the existing cobra style street lighting and install decorative street lighting within the Iroquois Road cul-de-sac. This project was the result of a resident petition from the Iroquois Road neighbors. The request was reviewed and recommended by the Municipal Services Committee in 2012.

Harvard Lane - \$42,500

Install decorative street lighting on Harvard Lane, north of Lake Avenue. This project was the result of a resident petition from the Harvard Lane neighbors. The request was reviewed and recommended by the Municipal Services Committee in 2015.

Project Update

The project cost has increased by 3% to account for inflation.

Project Alternative

Maintain the existing street lighting.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

RRFBs at Plaza de Lago Pedestrian Crossing 2018 \$30,000 Operating/Grant

Streets, Sidewalks and Alleys

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A



Plaza del Lago Ped Crossing



Wilmette
Prairie Ave
RRFB

Project Description

In fall of 2014, the Village received a petition from many residents who reside on the east side of Sheridan Road, north of Westerfield, requesting pedestrian safety enhancements to improve access to and from Plaza Del Lago and BMO/Harris Bank. At the direction of the Transportation Commission, the Village constructed a crosswalk at the Plaza del Lago entrance in 2015.

Since the crosswalk was installed, there were additional requests for improvements that would encourage driver compliance, specifically installation of a traffic signal. In response, the Village retained the services of Kimley-Horn and Associates to evaluate the feasibility of installing additional enhancements. Kimley-Horn's review determined that warrants are not met for a traffic signal or pedestrian activated overhead signal at this location. They did, however, indicate that rapid reflecting flashing beacons (RRFBs) were feasible in this location. The RRFBs would be similar to the ones installed at Wilmette and Prairie Avenue.

Project Update

This is a new CIP item for 2018.

Project Alternative

The alternative to funding this project is to maintain the existing signage and pavement marking.

Operating Budget Impact

Is this purchase *routine* ____ or X *non-routine*?

NON-ROUTINE	
Maintenance Costs:	Maintenance of RRFB is minimal because it is solar-powered.
Personnel Costs:	No additional cost – personnel currently perform scheduled maintenance of public infrastructure
Training Costs:	None

Traffic Calming	2018	\$9,000	Operating
Streets, Sidewalks and Alleys	2019	\$25,000	
	2020	\$25,000	
	2021	\$55,000	
- Critical	2022	\$25,000	
- Recommended			
X Contingent on Funding			

Original Purchase Date & Cost

Annual

Funding History (Budgeted Amounts)

2010 \$ 20,000 - Operating

2008 \$ 10,000 - Operating

2007 \$ 20,000 - Operating

Project Description & Justification

This program is for the design and installation of traffic calming measures on various Village streets. Speed bumps are generally scheduled to be installed in conjunction with street projects.

The Transportation Commission developed a traffic calming policy and procedure in 2000. Since that time, there have since been many traffic calming projects, including Manor Drive, Locust Road, Thornwood Avenue, Kenilworth Avenue, and the 1400 blocks of Forest and Elmwood Avenues. All of these traffic calming projects have been effective in reducing speeds and cut-through traffic.

Traffic studies conducted in 2015 and 2016 determined the following eligible candidates: Schiller Drive (2000 block), Park Drive (600-800 blocks), Elmwood (1900-2200 blocks), Prairie Drive (100 block), Greenwood (1900-2000 blocks), Thornwood (1900-2200 blocks) and Sunset (300 block).

Project Update

The Village has received requests from residents for an all-way stop at the intersection of Lake Avenue and 12th Street. The Village retained the services of Kimley-Horn and Associates to evaluate the traffic control at the intersection of 12th and Lake as well as the roadway configuration on Lake Avenue east of the railroad tracks to Wilmette Avenue. The report recommended a “road diet” for Lake Avenue to calm and organize traffic and improve pedestrian safety. The proposed striping changes will merge eastbound and westbound traffic into one lane so that at 12th Street, Lake Avenue is just one lane in each direction. Staff supports a road diet on Lake Avenue because the changes can be implemented on an incremental basis with low cost signage and striping as the initial phase. After implementation, staff would re-evaluate the intersection and, if the changes are proven to be beneficial, the next phase could be structural in nature with curb extensions and sidewalk realignments. If the initial striping changes do not have the desired results, then an all-way stop at Lake Avenue and 12th Street could be considered in the future. The Transportation Commission recommended the “road diet” at their December 2016 meeting and staff then prepared estimates for consideration at the Municipal Services Committee (MSC) meeting in February 2017. The MSC indicated support for this project because the changes can be implemented on an incremental basis

with low cost signage and striping as the initial phase. After implementation, staff will re-evaluate the intersection and, if the changes are proven to be beneficial, the next phase could be structural in nature with curb extensions and sidewalk realignments. The Committee asked staff to also look at incorporating bike accommodations on this section of Lake Avenue.

The initial road diet restriping of Lake Avenue will cost approximately \$9,000 and the more permanent solution with curb extensions will cost approximately \$55,000. With a road diet implementation in 2018, followed by an evaluation period, bike accommodation options can be reviewed as part of the master bike plan process with the effect of the road diet being available as well.

The \$25,000 in 2019, 2020 and 2022 is planned for use on the list of eligible traffic calming candidates which have remained unfunded since 2008.

Project Alternative

The alternative would be to not fund traffic calming. Resident complaints would increase because of speed and cut through traffic. This may result in requests for more speed enforcement or electronic speed trailers on Village streets.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	Engineering
Account Number Description	Traffic Calming Program
Account Number	11202035-425245

Village Downtown Streetscape	2019	\$350,000	Bond
	2020	\$400,000	
Streets, Sidewalks and Alleys	2021	\$6,000,000	
- Critical			
- Recommended			
X Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description

The Village Center Master Plan recognizes the need to define the Village Downtown area as a larger, unified mixed-use commercial district that includes all the commercial and institutional blocks west of the Union Pacific tracks and along Green Bay Road. The Plan calls for a unified streetscape and signage design in the Village Downtown to help reduce the physical and psychological barrier of the tracks and Green Bay Road, and facilitate pedestrian travel while showing motorists, commuters and bicyclists a more attractive “front door” to the community and its downtown. The Village Downtown’s streetscape is the key physical component that defines the area as a pedestrian-oriented, “walkable” downtown.

2019	Preliminary Engineering	\$ 350,000
2020	Design	\$ 400,000
2021	Construction	\$ 6,000,000

Project Update

No changes to this CIP item.

Project Alternative

The alternative to funding this project with local funds is to seek state, federal or private grant opportunities. This would likely delay the implementation of the Streetscape Master Plan.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	Maintenance of Streetscape features will be added to the regular maintenance budget
Personnel Costs:	No additional cost – personnel currently perform scheduled maintenance of public infrastructure
Training Costs:	None

Replacement of North Bridge Sidewalk

2019

\$308,400

TBD

Streets, Sidewalks and Alleys

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description

Replacement of cracked and damaged public sidewalk adjacent to Glenview Road Bridge over the Edens Expressway.



The sidewalk will continue to deteriorate and become unsafe for pedestrians and bikes. Because of the complexity of working on a bridge overpass, this project will require design and construction observation by a structural engineering firm.

Project Update

This project has been deferred since 2012. The cost has been revised to reflect a 3% increase since 2012 (\$261,360).

Project Alternative

The alternative is to continue to patch the sidewalks with asphalt. This will result in increased maintenance as the asphalt will not last more than a season. It will become hazardous in the long term and is considered aesthetically unpleasing by some residents.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Vehicles – Ten Year Capital Improvement Program

The Village of Wilmette recognizes the importance of maintaining, replacing and purchasing new equipment and vehicles to guarantee public safety and the efficient delivery of services. The Public Works Department maintains all Village-owned vehicles. The following is a breakdown of current vehicular levels for all vehicles owned by the Village and the replacement schedule for 2018:

Department	Number of Vehicles to be Replaced in FY 2018	Cost of Vehicles to be Replaced in FY 2018	Total Number of Vehicles in Fleet*
Public Works	8	837,900	101
Police	2	76,000	27
Fire	1	625,000	18
TOTAL	11	\$1,538,900	146

* Includes other vehicles and trailers not listed in the CIP but are maintained by the Vehicle Maintenance division.

In 2009, the squad car replacement cycle was changed from three years to four years.

Each project in the CIP is categorized by the requesting department as follows:

Critical - The project must be completed in the year recommended due to safety or operational needs or as mandated by law.

Recommended - The project will significantly improve operations or safety. The project is strongly recommended for funding in the year recommended or the year after.

Contingent on Funding - The project would be a benefit to the Village and improve service levels but is only recommended if funds are available.

Financing

Projects in this section of the Capital Improvement Plan are funded through the General Fund Operating, General Obligation Bonds, Water Fund Operating, and Sewer Fund Operating.

Ten Year Capital Improvement Program Vehicle Summary

Vehicle Replacement	2018	2019	2020	2021 & 2022	Five-Year Total	2023 - 2027	Ten-Year Total
Public Works	837,900	730,250	764,250	1,654,500	3,986,900	2,378,250	6,365,150
Police	76,000	156,000	180,000	160,000	572,000	720,000	1,292,000
Fire	625,000	250,000	445,000	90,000	1,410,000	2,850,000	4,260,000
Total	1,538,900	1,136,250	1,389,250	1,904,500	5,968,900	5,948,250	11,917,150

Proposed Financing	2018	2019	2020	2021 & 2022	Five-Year Total	2023 - 2027	Ten-Year Total
General Fund Operating	1,014,900	916,250	1,254,250	1,201,167	4,386,567	1,633,250	6,019,817
General Fund- Debt Financing	-	-	-	-	-	2,580,000	2,580,000
Sewer Fund Operating	225,000	110,000	51,500	501,667	888,167	867,500	1,755,667
Water Fund Operating	299,000	110,000	83,500	201,667	694,167	867,500	1,561,667
Total	1,538,900	1,136,250	1,389,250	1,904,500	5,968,900	5,948,250	11,917,150

**Ten Year Capital Improvement Program
Public Works Vehicle Summary**

Public Works Department	Year	Vehicle #	Page	This Project is:	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
Catch Basin Cleaner	2010	T-30	1	Rec.	395,000	-	-	-	395,000	-	395,000	W/S Fund
Large Dump Truck	2002	T-9	3	Rec.	172,650	-	-	-	172,650	-	172,650	General Fund
Skid Steer (C-34) & Trailer (C-37)	2000	C-34, C-37	5	Rec.	80,000	-	-	-	80,000	-	80,000	General Fund
Small Dump Truck	2007	T-35	7	Rec.	55,000	-	-	-	55,000	-	55,000	W/S Fund
Pick-Up Truck	2003	T-7	9	Rec.	39,000	-	-	-	39,000	-	39,000	Water Fund
Water Meter Shop Van	1998	T-46	11	Rec.	35,000	-	-	-	35,000	-	35,000	Water Fund
Jeep Wrangler	2004	P-19	13	Rec.	32,000	-	-	-	32,000	-	32,000	General Fund
Hydro-Excavator	N/A	New	15	Rec.	28,000	-	-	-	28,000	-	28,000	General Fund
Heavy-Duty Front End Loader	2001	C-14	17	Rec.	-	195,000	-	-	195,000	-	195,000	General & W/S Fund
Large Dump Truck	2002	T-10	3	Rec.	-	177,000	-	-	177,000	-	177,000	General Fund
Sidewalk Snowplow	1999	C-2	19	Rec.	-	85,000	-	-	85,000	-	85,000	General Fund
Step Van - Sign Shop	2006	T-19	21	Rec.	-	85,000	-	-	85,000	-	85,000	General Fund
Small Dump Truck	2008	T-38	22	Rec.	-	55,000	-	-	55,000	-	55,000	W/S Fund
Buildings & Grounds Utility Truck	2000	T-28	24	Rec.	-	38,000	-	-	38,000	-	38,000	General Fund
Pick-Up Truck	2005	T-29	26	Rec.	-	38,000	-	-	38,000	-	38,000	General Fund
Pick-Up Truck	2005	T-43	27	Rec.	-	35,000	-	-	35,000	-	35,000	W/S Fund
Aerial Lift Truck	2005	T-24	29	Rec.	-	-	200,000	-	200,000	-	200,000	General Fund
Large Dump Truck	2003	T-16	3	Rec.	-	-	181,000	-	181,000	-	181,000	General Fund
Brush Chipper	1999	C-9	30	Rec.	-	-	85,000	-	85,000	-	85,000	General Fund
Utility Truck	2001	T-31	32	Rec.	-	-	66,000	-	66,000	-	66,000	General Fund
Floor Scrubber	2005	S-3	33	Rec.	-	-	56,000	-	56,000	-	56,000	General Fund
Water/Sewer Utility Truck	2007	T-1	34	Rec.	-	-	55,000	-	55,000	-	55,000	W/S Fund
Shoring Supply Truck	2005	T-42	35	Rec.	-	-	48,000	-	48,000	-	48,000	W/S Fund
Pick-Up Truck	2006	T-44	36	Rec.	-	-	40,000	-	40,000	-	40,000	General Fund
Water Meter Shop Van	2004	T-25	37	Rec.	-	-	32,000	-	32,000	-	32,000	Water Fund
Large Dump Truck	2003	T-17	3	Rec.	-	-	-	205,000	205,000	-	205,000	General Fund
Pick-Up Truck	2009	T-15	38	Rec.	-	-	-	44,000	44,000	-	44,000	General Fund
Pick-Up Truck	2009	T-20	39	Rec.	-	-	-	40,000	40,000	-	40,000	General Fund
Pick-Up Truck	2009	T-26	40	Rec.	-	-	-	44,000	44,000	-	44,000	General Fund
Pick-Up Truck	2009	T-36	41	Rec.	-	-	-	40,000	40,000	-	40,000	General Fund
Pick-Up Truck	2009	T-47	42	Rec.	-	-	-	43,000	43,000	-	43,000	General Fund
Ford Escape Hybrid	2007	P-13	43	Rec.	-	-	-	30,000	30,000	-	30,000	General Fund
Stump Grinder	2001	C-6	44	Rec.	-	-	-	30,000	30,000	-	30,000	General Fund
Sewer Televising Truck	2006	T-45	45	Rec.	-	-	-	300,000	300,000	-	300,000	Sewer Fund
Ford Escape Hybrid	2007	P-16	46	Rec.	-	-	-	30,000	30,000	-	30,000	W/S Fund
Street Sweeper	2012	S-1	47	Rec.	-	-	-	230,000	230,000	-	230,000	General & W/S Fund
Vac-All Truck	2005	T-34	49	Rec.	-	-	-	300,000	300,000	-	300,000	General Fund
Brush Chipper	2004	C-7	50	Rec.	-	-	-	85,000	85,000	-	85,000	General Fund
Light Pole Trailer	1994	C-26	52	Rec.	-	-	-	11,000	11,000	-	11,000	General Fund
Large Dump Truck	2003	T-33	53	Rec.	-	-	-	165,000	165,000	-	165,000	W/S Fund
Small Dump Truck	2012	T-14	54	Rec.	-	-	-	55,000	55,000	-	55,000	W/S Fund
Electric Scissor Lift	N/A	N/A	55	Contingent	-	21,000	-	-	21,000	-	21,000	General Fund
Squad Transfer	N/A	N/A	N/A	Rec.	1,250	1,250	1,250	2,500	6,250	6,250	12,500	General Fund
All Vehicles (2023-2027)					-	-	-	-	-	2,372,000	2,372,000	All
41 Vehicles of Total (77 Vehicles)					837,900	730,250	764,250	1,654,500	3,986,900	2,378,250	6,365,150	

Proposed Financing	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total
General Fund- Operations	313,900	510,250	629,250	951,167	2,404,567	643,250	3,047,817
General Fund- Debt	-	-	-	-	-	-	-
Water Fund	299,000	110,000	83,500	201,667	694,167	867,500	1,561,667
Sewer Fund	225,000	110,000	51,500	501,667	888,167	867,500	1,755,667
Total	837,900	730,250	764,250	1,654,500	3,986,900	2,378,250	6,365,150

Project Rating							
Critical	-	-	-	-	-	-	-
Recommended	837,900	709,250	764,250	1,654,500	3,965,900	2,378,250	6,344,150
Contingent	-	21,000	-	-	21,000	-	21,000
Total	837,900	730,250	764,250	1,654,500	3,986,900	2,378,250	6,365,150

Catch Basin Cleaner (T-30)	2018	\$395,000	W/S Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	International
<i>Model</i>	7400, 41,700 GVWR Model V390 sewer rodder
<i>Year</i>	2010
<i>Cost</i>	\$239,054
<i>Useful Life</i>	8 years
<i>Current Life</i>	8 years



Personnel in the Engineering and Public Works Department (Water/Sewer Division) use this vehicle to rod sewers, clean catch basins, and excavate broken water mains or sewers. This truck is a 2010 model delivered in 2009, equipped with a debris body, 1,500 gallons of water capacity, sewer-rodding system, vacuum system, emergency lighting, and two-way radio.

Project Description & Justification

An estimated cost of \$395,000 to replace a 2010 International/VacCon sewer rodder/catch basin cleaner (estimated cost does not include trade-in value). This is one of two machines (sewer rodder/catch basin cleaner) owned by the Village. In 2001, the Village added a second sewer combination sewer truck to the fleet and replacement cycles for this type of equipment has historically fluctuated between 8-10 years. These machines get used daily and operate under extreme conditions. In particular, they are utilized for the following operations: all excavations (e.g. water main breaks, water service repairs and leaks, sewer repairs, fire hydrant replacement), sewer rodding (storm, sanitary and combined systems), cleaning of clogged inlets (street flooding), sewer back-ups/rodding, catch basin cleaning, sewer cleaning in preparation for televising and cleaning of tree pits. The two machines are needed to provide timely emergency response (e.g. flooding, water main breaks) allowing multiple sites to be addressed simultaneously. This truck utilizes vacuum excavation technology which utilizes air or high pressure water to break apart soil and then debris is transported up into the tanks through vacuum suction. This method of excavation is also commonly referred to as soft excavation technology and widely accepted as being much safer than traditional digging methods, particularly within the tolerance zone around underground facilities. Equally important, this process allows for workers on site to stay safe on the surface while working at an active excavation site (located subsurface).

T-30	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	91
Labor Hours	314.25
Labor Cost	\$15,726.46
Parts Cost	\$12,354.50

Total Cost	\$28,080.96
Total Equipment Miles	15,627
Total Equipment Hours	3,969

Project Update

Replacement of this unit was previously deferred from 2017 to 2018 to accommodate a 9-year replacement cycle which aligns with the replacement cycle of the other sewer/catch basin cleaner (T-22). The replacement cost has increased by \$110,000 attributed to introduction of tier five diesel powered engines to comply with more stringent federal emission standards, increased material/manufacturer costs and one-year deferment. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through either the Northwest Municipal Conference or a specialty heavy-duty truck auction.

Project Alternative

Though not recommended, the alternative is to delay the purchase and reschedule during later years. If deferred, the Village may be faced with the following extensive repairs over succeeding years: water pump (\$18,000), fan assembly (\$8,000) and hydraulic valve replacement (\$8,000). Reducing the breakdowns of this unit is essential to provide critical services and minimize the negative impact on the department's ability to address requests for emergency response.

An alternative to purchasing the vehicle outright is to do a lease-to-own purchase. Staff is still reviewing this purchase option to see if it is advantageous to the Village. Compared to purchasing the catch basin cleaner outright, the lease-to-own cost over seven years would be approximately \$440,000.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	40807090-480275-40390 /T-30 (50%) 41838090-480275-40390 /T-30 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Large Dump Truck	2018 (T-9)	\$172,650	GF – Operating
- Critical	2019 (T-10)	\$177,000	
X Recommended	2020 (T-16)	\$181,100	
- Contingent on Funding	2021 (T-17)	\$185,000	



T-9, T-10 and T-16



T-17

Currently, the Village has a total of 10 large dump trucks in the fleet with plowing and salting capabilities, of which, four trucks are 2003 year models (or 14 years of age). The other six trucks are 2009 year models or newer. Beginning with the 2016 Budget, one large dump truck (i.e. 2003 year models) has been programmed for replacement each year with a total of six trucks scheduled for replacement over six years (2016, 2017, 2018, 2019, 2020 and 2021). The revised CIP schedule was established to distribute costs over multiple years by eliminating the purchase of multiple large dump trucks in a single year. Personnel in the Engineering and Public Works Department (Street Division) utilize these large dump trucks for snow and ice control operations and transporting materials to and from worksites. The vehicles are equipped with a five-yard dump body, v-box salt spreader, liquid salt pre-wetting system, computerized ground sense salt application system, 10' power angling snowplow, 10' underbody scraper, dump body tarp system, emergency lighting, and two-way radio.

CIP Budget-Replacement Year	2018	2019	2020	2021
Vehicle No.	T-9	T-10	T-16	T-17
Manufacturer	International 4400	International 4400	International 4400	International 4700 (4WD)
Original Cost	\$94,523	\$94,523	\$95,923	\$114,746
Model Year	2003	2003	2003	2003
In-Service Year	2002	2002	2003	2003
Useful Life (yrs.)	15	15	15	15
Current Life (yrs.)	15	15	14	14
Age at time of Replacement (yrs.)	16	17	17	18
No. of Breakdowns (2015-2016)*	45	N/A	N/A	N/A
Labor Hours	184.25	N/A	N/A	N/A
Labor Cost	\$8,978.84	N/A	N/A	N/A
Parts Cost	\$3,432.89	N/A	N/A	N/A
Total Cost	\$12,411.73	N/A	N/A	N/A
Current Mileage	28,088	30,345	31,356	24,878

*Breakdowns are shown only for those vehicles that are to be replaced in the next fiscal year.

Project Description & Justification

In 2018, an estimated cost of \$172,650 to replace a 2003 model International dump truck (T-9).

Project Update

As part of the 2018 CIP Budget process, the individual CIP pages for individual large dump trucks (i.e. T-9, T-10, T-16 and T-17) were consolidated into the table as shown on the first page. The projected budget of \$172,650 (T-9) has been updated to reflect pricing (i.e. truck chassis and outfitting) obtained through a Request for Proposal (RFP) process for a five-year truck build commencing in 2017 (or YR 1). Replacement of this truck was previously deferred to 2020 and has been rescheduled to 2018 (switched spots with T-17) and there are no additional updates for this vehicle. This truck will be replaced with an identical or comparable unit since the existing truck is favored for its tight turning radius, handling, visibility and maneuverability which contributes to more efficient snow and ice control operations for side streets. From an equipment operator standpoint, these vehicle attributes are highly regarded. The specifications of the hydraulics, snow plow operation, salt spreader and liquid systems on the existing unit has also proven to be dependable and capable for snow and ice control operations. The Village has a total of ten large dump trucks in the fleet with plowing and salting capabilities, of which, four trucks are 2003 year models (or 15 years of age). The other six trucks are 2009 year models or newer. Consequently, staff recommends phasing in replacement of the four trucks (2003 year models) over the course of the next 4-years (or 1 truck per year), reflecting a replacement cycle range of 16-19 years per truck versus deferring replacement and replacing multiple trucks over succeeding years at longer replacement cycles. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11233030-480225 /T-9 11233030-480225-40590 /T-10 11233030-480225-40595 /T-16 11233030-480225-40600 /T-17
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Skid Steer (C-34 and C-37)	2018	\$80,000	GF - Operating
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- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description (C-34)

<i>Make</i>	Gehl
<i>Model</i>	Skid Steer
<i>Year</i>	2000
<i>Cost</i>	\$41,286
<i>Useful Life</i>	17 years
<i>Current Life</i>	17 years



Vehicle Description (C-37)

<i>Make</i>	Beaver Creek
<i>Model</i>	SD-15
<i>Year</i>	2000
<i>Cost</i>	\$4,364
<i>Useful Life</i>	17 years
<i>Current Life</i>	17 years



Staff in the Engineering and Public Works Department (Street Division) utilize this skid-steer loader (C-34) and trailer (C-37) for a variety of tasks, including material loading, pavement removal/repairs, surface grading and excavation, landscape maintenance, storm clean-up and snow hauling operations. The existing unit is equipped with three buckets, 72" low profile; 74" light material; and 74" combination; a 73" snow blower, 84" angle plow, 750 ft. lb. hydraulic concrete breaker, and emergency lighting.

Project Description & Justification

An estimated cost of \$80,000 to replace a Gehl skid-steer loader and Beaver Creek trailer.

C-34 and C-37	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	16
Labor Hours	29.75
Labor Cost	\$1,451.50
Parts Cost	\$781.09
Total Cost	\$2,232.59
Total Equipment Miles	N/A
Total Equipment Hours	733

*Breakdowns are shown for those vehicles that are to be replaced in the next fiscal year

Project Update

Replacement of this unit has been deferred from 2017 to 2018. Over the summer months (2017), staff will be reviewing replacement options for the existing skid steer. The existing unit will be replaced with either a comparable unit or a Toolcat® small utility machine manufactured by Bobcat®. Whichever machine is determined to be cost conscious while providing maximum utility for Street Division operations will be selected. The projected cost includes purchase of a cold planer attachment for pavement grinding/street repair, and increased manufacturer/material costs. The existing skid-steer does not have the hydraulic capacity (or high-flow hydraulics) to operate a cold planer attachment which is designed to operate at a high rate of motion and requires maximum flow hydraulics and increased engine horsepower. High-flow hydraulics allows attachments to run at optimum performance, resulting in increased productivity. Therefore, the replacement skid-steer will have high-flow hydraulics and increased engine horsepower. All manufacturers of skid steers offer high-flow hydraulics on their equipment. A standard bucket will be the only other attachment included with this purchase and staff recommends purchasing a skid steer that will be capable of interchanging attachments with the Village's other skid steer loader (i.e. C-35 Bobcat), thus only one set of attachments (versus two sets) will be required going forward with considerable cost savings (i.e. eliminates redundancy).

When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference. When removed from service, this skid steer loader, attachments and trailer will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11233030-480275 / C-34 and C-37
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Small Dump Truck (T-35)	2018	\$55,000	W/S Operating
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- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-250, 16,000 GVWR
<i>Year</i>	2007
<i>Cost</i>	\$42,672
<i>Useful Life</i>	10 years
<i>Current Life</i>	10 years



This vehicle is categorized as a small dump truck and is used daily by various personnel in the Engineering and Public Works Department (Sewer/Water Division) to transport materials and various aggregates to and from work sites.

Project Description & Justification

An estimated cost of \$55,000 to replace a 2007 Ford dump truck.

T-35	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	17
Labor Hours	77.00
Labor Cost	\$7,876.17
Parts Cost	\$1,414.87
Total Cost	\$9,291.04
Total Equipment Miles	57,555
Total Equipment Hours	N/A

*Breakdowns are shown for those vehicles that are to be replaced in the next calendar year

Project Update

Replacement of this unit was previously deferred to 2018. The replacement truck chassis will include a gas engine, stainless steel dump body, electric hoist (for dump body), tunnel tool box, emergency lighting and two-way radio. This is one of three small dump trucks assigned to the Water/Sewer Division. All three trucks are utilized on a daily basis to transport excavation spoils, backfill materials and other materials to repair infrastructure (i.e. sand, crushed stone, topsoil, small tools and equipment, trash pumps, sewer structures-catch basins, inlets, manhole covers and frames, clamps, water sleeves and piping). When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	40807090-480250-40545 /T-35 (50%) 41838090-480250-40545 /T-35 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Water Management – Vehicles

Pick-Up Truck (T-7)	2018	\$39,000	Water Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-250, 8,800 GVWR
<i>Year</i>	2003
<i>Cost</i>	\$29,938
<i>Useful Life</i>	14 years
<i>Current Life</i>	14 years



Personnel in the Water Management Department (Mechanics and Maintenance) utilize this pick-up truck on a daily basis for conducting maintenance and repair activities at nine Village facilities (drinking water – five; storm and sanitary water – four). The vehicle is equipped with a snowplow, tailgate lift, ladder rack, emergency lighting, and two-way radio.

Project Description & Justification

There is an estimated cost of \$39,000 to replace a 2003 Ford pick-up truck.

T-07	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	18
Labor Hours	74.50
Labor Cost	\$2,682.00
Parts Cost	\$1,259.01
Total Cost	\$3,941.01
Total Equipment Miles	22,975
Total Equipment Hours	N/A

Project Update

Replacement of this unit was previously rescheduled from 2020 to 2018 as a proactive measure to address increased maintenance responsibilities with the addition of two new storm water facilities, which went online starting in 2016. The replacement cost has increased by \$8,000 for inclusion of a tailgate mounted, safety tripod and harness (OSHA approved) for confined space entry of subsurface utilities, such as, valve and meter vaults. After replacement, this vehicle will be kept in the Village's fleet and continue to be utilized by the Water Management Department to facilitate increased maintenance responsibilities. In order to uphold service levels, the availability of an additional vehicle is deemed prudent based on a review of existing staff levels and the foreseeable increased demand to disseminate separate work crews at multiple facilities (or work sites) simultaneously. The availability of an additional vehicle will also help to negate any disruptions in providing emergency

response at multiple locations. The replacement vehicle will be similarly equipped as the existing vehicle.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	41818090-480200 /T-7
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Water Management – Vehicles

Water Meter Shop Van (T-46)	2018	\$35,000	Water Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	E-250, 8,600 GVWR
<i>Year</i>	1998
<i>Cost</i>	\$23,000
<i>Useful Life</i>	17 years
<i>Current Life</i>	19 years



Various personnel in the Water Management Department (Meter Shop) use this vehicle for daily activities. The vehicle is equipped with mobile meter-reading equipment, storage shelving, emergency lighting, and two-way radio. This is one of two vans utilized by the Meter Shop (T-46 and T-25).

Project Description & Justification

An estimated cost of \$35,000 to replace a 1998 Ford van.

T-46	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	10
Labor Hours	20.25
Labor Cost	\$1,093.08
Parts Cost	\$392.00
Total Cost	\$1,485.08
Total Equipment Miles	60,170
Total Equipment Hours	N/A

*Breakdowns are shown for those vehicles that are to be replaced in the next calendar year

Project Update

Replacement of this unit was previously deferred to 2018. This truck will be replaced with a Ford Transit Van (or equivalent) as a less costly option (savings of \$5,000) while upholding services and needs provided by the Water Management Department (Meter Shop). The Ford Transit Van offers more versatility and storage capacity than a conventional van configuration. The replacement vehicle will be configured similarly to the existing vehicle. When removed from service, this vehicle will be traded in on a new vehicle acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	41828090-480275 / T-46
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Public Works Jeep (P-19)	2018	\$32,000	GF - Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Jeep
<i>Model</i>	Wrangler
<i>Year</i>	2004
<i>Cost</i>	\$23,258
<i>Useful Life</i>	13 years
<i>Current Life</i>	13 years



Various personnel in the Engineering and Public Works Department (Street and Forestry Divisions) utilize this vehicle throughout the year for daily activities, including snow plowing of narrow H-alleys and other confined areas (i.e. misc. parking lots) that provide limited access for pick-up trucks. This vehicle will be replaced with an identical or comparable unit since the existing unit is favored for its tight turning radius, handling, visibility and maneuverability which contributes to more efficient, effective snow plowing operations for tight areas. Forestry staff also utilizes the Jeep for several weeks each summer to inspect trees for Dutch elm disease as the top can be removed to provide a clear overhead view of tree canopies and disease symptoms. On-Call Specialists also use the Jeep to respond to after-hours emergencies, and the unit sees additional use by the mechanics for travel to and from the Fire Stations since assuming maintenance responsibilities for fire vehicles. The unit is equipped with 4-wheel drive, emergency lighting, two-way radio, and snowplow.

Project Description & Justification

An estimated cost of \$32,000 to replace a 2004 Jeep Wrangler.

P-19	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	32
Labor Hours	78
Labor Cost	\$2,730.54
Parts Cost	\$2,736.92
Total Cost	\$5,467.46
Total Equipment Miles	44,640
Total Equipment Hours	N/A

*Breakdowns are shown for those vehicles that are to be replaced in the next fiscal year

Project Update

Replacement of this Jeep has been rescheduled from 2019 to 2018, based on a review of maintenance costs and noticeable progressive wear and tear from snow plowing operations. When replaced, this

vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years or purchase a less costly alternative and outsource snow plowing responsibilities assigned to the Jeep.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11233030-480100-40165 /P-19
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Truck or Trailer Mounted Hydro-Excavator	2018	\$28,000	Operating
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- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification



This request is for the purchase of a vacuum, hydro-excavator to assist the Street Division with various risk free excavation work detail, primarily for maintenance of the Village's street lighting system. The finished unit will be truck or trailer mounted and equipped with a 27 HP engine producing upwards of 500 cfm suction power, a steel construction spoils hopper (working capacity of 150-175 gallons or 1 cubic yard), 80-gallon water tank, and 3,000 PSI to support hydro-excavating.

With the increased volume of underground communications (i.e. fiber-optics) being installed throughout the Village, this technology offers the least intrusive and best field tested option for safe excavations. Furthermore, with use of this equipment, excavation areas are targeted and specific, resulting in minimized disturbance to the public right-of-way, reduced risk for damage to subsurface utilities and lower restoration costs.

Targeted applications and benefits include:

- Safely 'pothole' or excavate areas for street light cable faults, repairs, straightening of leaning poles/bases and new light pole installations; Of most recent, the Department has received several requests for straightening of the decorative green light poles where the bases have settled over time; this equipment would be utilized as part a systematic program to straighten poles by resetting the bases;
- Unit has a much smaller footprint (i.e. size dimensions and weight) than traditional heavy equipment, allowing access to confined areas, such as, underground garage areas or other public right-of-ways which are anomalies (i.e. excessively narrow areas, satellite locations with limited access, green alleys, etc.)
- Excavate tree pit locations in the Village Center and Central Business District (CBD) for tree replacement; safely uncovers a myriad of subsurface utilities in a confined space where larger equipment is ill-suited and can cause damage to infrastructure;

- With vacuum system, unit has capability to remove excess water, which can be used to facilitate emergency street repair where water ponding exists, clean out street lighting vaults, and clear drainage ditches along frontage roads (i.e. Leclaire and Lawler);
- Additionally, with water system, unit has capacity for power washing detail at following locations: CBD sidewalks, exterior signage, underground parking garages and stairwells, building facades, bus shelters and other public right-of-way areas.
- Equipment can also support smaller projects for the Water/Sewer Division, including but not limited to, valve box and storm drain cleanouts
- Facilitates collection of tree stump grindings at remote or restricted locations;
- Provide maintenance or housekeeping of salt conveyor system and street sweepings spoil bin area;

Project Update

This is a new purchase request for 2018. For the balance of 2017, Public Works staff will look to operate a demo unit to assess and affirm the unit's form, fit and suitability to the above referenced applications.

Project Alternative

The alternative is to defer purchase until later year(s) and/or continue with existing arrangement where the Vac-Con sewer cleaner is borrowed from the Water/Sewer Division on an as needed basis.

Operating Budget Impact

Is this purchase ____ *routine* or X *non-routine*?

ROUTINE	
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Heavy-Duty Front End Loader (C-14)	2019	\$195,000	GF and W/S Fund
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-	Critical
X	Recommended
-	Contingent on Funding

Vehicle Description

<i>Make</i>	New Holland
<i>Model</i>	LW 170
<i>Year</i>	2001
<i>Cost</i>	\$102,415
<i>Useful Life</i>	17 years
<i>Current Life</i>	16 years



This machine is used for various duties by all divisions within the Engineering and Public Works Department. The vehicle is equipped with emergency lighting and a tool carrier identical to C-01 and C-21 that allows the use of the following interchangeable attachments; a 2.75 cubic yard bucket, 5.4 cubic yard light material bucket, 4-in-1 grappling bucket, 13 ft. power angling snowplow, and material handling arm.

Project Description & Justification

An estimated cost of \$195,000 to replace a 2001 model New Holland heavy-duty front end loader.

Project Update

Replacement of this front end loader was previously rescheduled to 2017 from 2018 and has been deferred to 2019 based on a review of maintenance records. This unit is one of three front end loaders (two large, one small) owned by the Village which are utilized on a year-round basis to load materials (e.g. sand, stone, soil and rock salt), excavation spoils (approx. 2,000 yds. - annually), street sweepings (approx. 700-900 yds. – annually) and actively participates in snow hauling operations. Additionally, C-1 and C-14 are utilized to load leaf debris (approx. 9,000 compacted cubic yds.) into semi-trailers during leaf collection operations. The front end loaders also play an integral role in storm clean-up operations by opening up and clearing roads of fallen trees or large branches. These loaders are also utilized by the Vehicle Maintenance Division to lift/transport miscellaneous heavy equipment with the jib crane attachment. When removed from service, this machine will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____

ROUTINE	
Account Number/Description	11233030-480275 /C-14 (50%)
	40807090-480275 /C-14 (25%)
	41838090-480275 /C-14 (25%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Sidewalk Snowplow (C-2)	2019	\$85,000	GF - Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Holder
<i>Model</i>	C240
<i>Year</i>	1999
<i>Cost</i>	\$65,140
<i>Useful Life</i>	18 years
<i>Current Life</i>	18 years



Personnel in the Public Works Department utilize this articulating tractor to provide snow and ice control measures for sidewalks, primarily the 36-miles of priority walking routes (e.g. Business Commuter and School Walking Routes). The new machine will be similarly equipped with a dump body, snowplow, snow blower, salt spreader, emergency lighting, and two-way radio.

Project Description & Justification

An estimated cost of \$85,000 to replace a 1999 Holder sidewalk snow plow.

Project Update

Replacement of this unit has been deferred from 2018 to 2019 to allow staff more time for continuing research of less costly replacement options. The projected replacement cost for this unit was reduced from \$110,000 to \$85,000 based on an initial review of less costly alternatives in the marketplace which staff believes can uphold existing service levels for the priority walking routes (snow and ice control). While there are no viable options to replace the Prinoth (formerly Bombardier) sidewalk track machines for the heavy, wet snows, staff feels there are workable solutions for the priority walking routes as the level of service commences at much lower snow accumulations which do not require the power and weight ratios of the Prinoth machines. One example of a less costly alternative includes the Toolcat® utility work machine, manufactured by Bobcat®, which has a projected cost of just under \$85,000 whereas a new Holder or MT Trackless machine has a projected cost of \$150,000, representing a potential savings of \$65,000. As an added benefit, the Village already owns a Bobcat® skid steer machine (C-35) with attachments that will be interchangeable with the Toolcat® machine. When removed from service, this unit will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480275 /C-02
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Sign Maintainer Van (T-19)	2019	\$85,000	GF -Operating
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- Critical
- X Recommended
- Contingent on Funding

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	E-450 Step Van
<i>Year</i>	2007
<i>Cost</i>	\$66,723
<i>Useful Life</i>	13 years
<i>Current Life</i>	10 years



Employees in the Sign Shop use this vehicle on a daily basis as a mobile workshop, and the truck is equipped with a hydraulic system for operating various power tools, emergency lighting, and two-way radio. This truck is a 2007 model delivered in 2006.

Project Description & Justification

An estimated cost of \$85,000 to replace a 2007 Ford E-450 Step Van for sign maintenance.

Project Update

This vehicle received a new engine in 2013; however, staff doesn't recommend deferring replacement beyond 2019. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480275-40440 /T-19
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Small Dump Truck (T-38)	2019	\$55,000	W/S -Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-450 2WD chassis, 16,000 GVWR
<i>Year</i>	2008
<i>Cost</i>	\$56,997
<i>Useful Life</i>	10 years
<i>Current Life</i>	9 years



Personnel in the Engineering and Public Works Department (Water/Sewer Division) utilize this vehicle on a daily basis to transport materials and haul debris. The vehicle is equipped with 2-wheel drive, a three-yard steel dump body, emergency lighting, hydraulic valve-exercising machine, and two-way radio.

Project Description & Justification

An estimated cost of \$55,000 to replace a 2008 Ford F-450 2WD chassis with a three-yard steel dump body.

Project Update

The projected cost has increased by \$5,000 due to rising manufacturer/material costs. The replacement truck will include a gas engine, stainless steel dump body, electric hoist (for dump body), tunnel tool box, emergency lighting and two-way radio. This is one of three small dump trucks assigned to the Water/Sewer Division. All three trucks are utilized on a daily basis to transport excavation spoils, backfill materials and other materials to repair infrastructure (i.e. sand, crushed stone, topsoil, small tools and equipment, trash pumps, sewer structures-catch basins, inlets, manhole covers and frames, clamps, water sleeves and piping). The existing hydraulic valve-exercising machine will not be replaced on this vehicle as it was recently purchased in 2015 at a cost of \$19,490. Consequently, the existing valve exercising machine (2015) will be transferred onto the new T-38 in 2019. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Account Number/Description	40807090-480250-40555 /T-38 (50%) 41838090-480250-40555 /T-38 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Utility Truck (T-28)	2019	\$38,000	GF - Operating
Buildings & Grounds			
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	GMC
<i>Model</i>	Sierra, 8,600 GVWR
<i>Year</i>	2000
<i>Cost</i>	\$34,934
<i>Useful Life</i>	16 years
<i>Current Life</i>	17 years



Employees in the Engineering and Public Works Department (Facilities Maintenance) use this utility service truck in their daily activities. The vehicle is equipped with a fiberglass service body, 110 volt power supply, remote controlled spotlight, tailgate lift, emergency lighting, and two-way radio.

Project Description & Justification

An estimated cost of \$38,000 to replace a 2000 GMC utility truck.

Project Update

Replacement of this unit has been deferred from 2018 to 2019. The replacement vehicle will be a less costly alternative as compared to the current vehicle configuration while offering greater versatility. The replacement vehicle will be a pick-up truck (4x4) with a snow plow, tail gate lift, ladder rack, toolbox, emergency lighting and two-way radio. When removed from service, this unit will be traded in on a new vehicle acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years; however, the vehicle has reached the end of its expected useful life and has already started to display progressive deterioration of the engine compartment (i.e. oil leaks, excess oil consumption, etc.) which will require costly repairs in the near future.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11342035-480200 / T-28
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Pick-Up Truck (T-29)	2019	\$38,000	GF - Operating
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- Critical
- X Recommended
- Contingent on Funding

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-250, 9,600 GVWR
<i>Year</i>	2005
<i>Cost</i>	\$32,571
<i>Useful Life</i>	13 years
<i>Current Life</i>	12 years



The Village Forester utilizes this pick-up truck for their daily activities. The vehicle is equipped with a snowplow, leaf pusher, toolbox, emergency lighting, and two-way radio. In addition to serving as the Forester's daily use vehicle, it is used in the seasonal leaf collection and snow and ice removal programs.

Project Description & Justification

An estimated cost of \$38,000 to replace a 2005 Ford pick-up truck.

Project Update

Replacement of this unit was previously deferred from 2018 to 2019, based on a review of maintenance costs and the projected cost has increased by \$2,000 attributed to rising manufacturer/material costs. The replacement unit will be similarly equipped to the existing unit. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480200-40485 /T-29
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Pick-Up Truck (T-43) Utility Technician	2019	\$35,000	W/S - Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-250, 9,600 GVWR
<i>Year</i>	2005
<i>Cost</i>	\$33,348
<i>Useful Life</i>	12 years
<i>Current Life</i>	12 years



The Utility Technician in the Engineering and Public Works Department (Water/Sewer Division) utilizes this pick-up truck for daily activities. The vehicle is equipped with a snowplow, aluminum pick-up bed cover, pick-up bed storage box, emergency lighting, and two-way radio.

Project Description & Justification

An estimated cost of \$35,000 to replace a 2005 Ford pick-up truck.

T-43	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	29
Labor Hours	133.25
Labor Cost	\$5,651.17
Parts Cost	\$4,164.54
Total Cost	\$9,815.71
Total Equipment Miles	95,417
Total Equipment Hours	N/A

*Breakdowns are shown for those vehicles that are to be replaced in the next calendar year

Project Update

Replacement of this unit has been deferred from 2018 to 2019. The existing vehicle will be replaced with a Ford Transit Van (or equivalent) as a less costly replacement option (savings of \$5,000) while upholding services and needs provided by the Utility Technician. The Ford Transit Van offers more versatility and larger storage capacity (with heated environment) than the existing pick-up truck. The replacement unit will not include a snow plow as staff feels the remaining fleet inventory will be sufficient to uphold established service levels for snow and ice control operations. This vehicle goes out on a daily basis and responds to approximately 4,500-5,000 J.U.L.I.E. locate requests each year. If J.U.L.I.E. locates were to be outsourced, this vehicle has the versatility to be used as service truck for

everyday W/S projects. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years and/or look into outsourcing this service at a future date. Based on unit pricing from a recent MPI bid (2015), the projected annual cost to outsource J.U.L.I.E. locating (routine tickets only) of Village owned infrastructure is \$105,000 based on the volume of requests generated (within Village of Wilmette limits) for the latest J.U.L.I.E. reporting year (or 5,212 annual requests at approximately \$20 per request). This projected cost does not include locating service for special projects, such as, NICOR, ComEd and/or other street resurfacing, utility improvement projects. The total number of hours required for special projects locating varies from year to year based on the volume of scheduled projects. Staff projects a range of 200-800 labor hours needed for special projects at an additional estimated cost annual of \$10,000 to \$40,000 (at \$50 per hour), thus the overall total would be \$115,000 to \$145,000 to provide J.U.L.I.E. locating services.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	40807090-480200-40510 /T-43 (50%) 41838090-480200-40510 /T-43 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Aerial Lift Truck (T-24)	2020	\$200,000	GF -Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	International
<i>Model</i>	4400, Terex 60 ft.
<i>Year</i>	2005
<i>Cost</i>	\$116,651
<i>Useful Life</i>	13 years
<i>Current Life</i>	12 years



Personnel in the Engineering and Public Works Department (Street Division) utilize this vehicle on a weekly basis for tree pruning/removal services and emergency storm response.

Project Description & Justification

An estimated cost of \$200,000 to replace a 2005 Navistar 4400 chassis with a 60' aerial unit and woodchip body.

Project Update

Replacement of this vehicle has been deferred from 2019 to 2020, based on a review of maintenance costs. This truck is intimately involved in providing the following parkway tree services, based on historical average over last 3-years (annual quantities), response to 210 service requests for tree pruning, 75 tree removals (under 12-inches diameter), pruning of 1,250 trees (under 7-inches diameter) and pruning of 750 trees (view obstruction, clearance pruning). This truck is also utilized extensively to provide emergency storm damage response. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

Though not recommended, the alternative is to delay the purchase and reschedule during later years. Reducing the breakdowns of this unit is essential to provide critical services and minimize the negative impact on the department's ability to address emergency responses.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480275-40405 /T-24
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Brush Chipper (C-9)	2020	\$85,000	GF - Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Morbark
<i>Model</i>	2400 Tandem
<i>Year</i>	1999
<i>Cost</i>	\$31,940
<i>Useful Life</i>	17 years
<i>Current Life</i>	18 years



Personnel in the Engineering and Public Works Department (Street Division) operate this hydraulic brush chipper while conducting forestry service requests (i.e. tree pruning and removal) and storm clean-up efforts. The existing brush chipper is capable of grinding branches up to 18” in diameter which assists in eliminating the need for separate hauling/disposal of log debris. The new machine will be equipped similarly to the existing unit and have emergency lighting.

Project Description & Justification

An estimated cost of \$85,000 to replace a 1999 Morbark brush chipper.

Project Update

Replacement of this unit has been deferred to 2020 from 2018, based on a review of maintenance records. The cost of a replacement machine has increased \$25,000 attributed to introduction of tier-five diesel powered engines to comply with more stringent federal emission standards and anticipated increased material/manufacturer costs. This machine is one of two brush chippers (C-9 and C-7) owned by the Village and currently serves as the secondary chipper. However, in the event of wind and/or ice storms causing widespread damage to parkway trees, both brush chippers are utilized extensively to provide storm clean-up. If one of the machines breaks down during clean-up efforts, response time is reduced by one-half. Likewise, if the primary chipper breaks down while in the process of conducting routine parkway tree maintenance (e.g. pruning service requests), the secondary chipper serves as its replacement and there are no disruptions in service. If approved, staff recommends a replacement unit that is similarly equipped to handle branch diameters up to 18” which promotes more efficient operations by eliminating/curtailing the cost of additional resources (e.g. labor and equipment) to handle, process debris twice (e.g. larger branches and logs). For example, it reduces the incidents of logs resting on parkways, awaiting collection from a second crew (loader/large dump truck), and the second handling of log debris back at the Public Works Facility. When removed from service, this machine will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years. If a significant breakdown to this machine occurs during an emergency situation, a second machine may need to be leased at an estimated weekly rate of \$2,000 until repairs can be completed. Contractual assistance could also be pursued for storm clean-up as another alternative, however, depending on the magnitude of the storm, their availability may be scarce, limited or unavailable (e.g. contractor may offer to furnish only the required minimum resources, equipment and personnel, to comply with contract provisions at costs that equal or exceed the weekly rental fee of a brush chipper).

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11233030-480275 /C-9
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Utility Truck (T-31)	2020	\$66,000	GF - Operating
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-	Critical
X	Recommended
-	Contingent on Funding

Vehicle Description

<i>Make</i>	Chevrolet
<i>Model</i>	3500, 12,000 GVWR
<i>Year</i>	2001
<i>Cost</i>	\$48,406
<i>Useful Life</i>	16 years
<i>Current Life</i>	16 years



Personnel in the Engineering and Public Works Department (Vehicle Maintenance Division) utilize this vehicle in their daily activities, and to provide road service for the Village's fleet that have broken down. The vehicle is equipped with a steel service body, under hood air compressor, gas powered combination generator/welder, front-mounted winch, tailgate lift, emergency lighting, and two-way radio.

Project Description & Justification

An estimated cost of \$66,000 to replace a 2001 Chevrolet utility truck.

Project Update

Replacement of this unit was previously deferred to 2020 based on a review of maintenance records. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11273030-480275-40430 / T-31
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Floor Sweeper/Scrubber (S-3)	2020	\$56,000	GF - Operating
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- Critical
- X Recommended
- Contingent on Funding

Vehicle Description

<i>Make</i>	Tenant
<i>Model</i>	8410LP
<i>Year</i>	2005
<i>Cost</i>	\$44,999
<i>Useful Life</i>	15 years
<i>Current Life</i>	12 years



This floor sweeper/scrubber is utilized by various personnel in the Engineering and Public Works Department to periodically clean/sweep an estimated 10,000 sq. feet of surface area in various garage areas located at the Public Works Facility (conducted 6-8 times per year). The unit is propane powered and equipped with emergency lighting.

Project Description & Justification

An estimated cost of \$56,000 to replace a 2005 Tenant floor sweeper/scrubber.

Project Update

Replacement of this floor sweeper/scrubber was previously deferred to 2020 and there are no additional updates for this unit. When removed from service, this unit will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project, reschedule the work during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ___?

ROUTINE	
Account Number/Description	11233030-480275-40380 / S-03
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Water/Sewer Utility Vehicle (T-1)	2020	\$55,000	W/S -Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-250, 8,600 GVWR
<i>Year</i>	2008
<i>Cost</i>	\$50,025
<i>Useful Life</i>	12 years
<i>Current Life</i>	10 years



Personnel in the Engineering and Public Works Department (Water/Sewer Division) utilize this service truck on a daily basis in conducting various work activities. This truck is equipped with a fiberglass utility service body, under hood air compressor, emergency lighting, and two-way radio. This truck is a 2008 model that was purchased in 2007.

Project Description & Justification

An estimated cost of \$55,000 to replace a 2008 Ford F-250 with a fiberglass utility body and under hood air compressor.

Project Update

There are no updates for 2018. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Account Number/Description	40807090-480275-40410 /T-1 (50%) 41838090-480275-40410 /T-1 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Shoring Supply Truck (T-42)	2020	\$48,000	W/S Operating
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- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F350, 12,000 GVWR
<i>Year</i>	2005
<i>Cost</i>	\$34,981
<i>Useful Life</i>	16 years
<i>Current Life</i>	12 years



Personnel in the Engineering and Public Works Department (Water/Sewer Division) utilize this vehicle to transport trench-shoring and supplies to work sites. The vehicle is equipped with emergency lighting, two-way radio, and a 12-foot long enclosed storage body with workbench, storage racks, and dual opening doors.

Project Description & Justification

An estimated cost of \$48,000 to replace a 2005 Ford F350 truck with 12-foot enclosed storage body.

Project Update

Replacement of this unit was previously deferred to 2020 and there are no additional updates for this vehicle. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ___?

ROUTINE	
Account Number/Description	40807090-480200-40505 / T-42 (50%) 41838090-480200-40505 / T-42 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Pick-Up Truck (T-44)	2020	\$40,000	GF - Operating
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- Critical
- X Recommended
- Contingent on Funding

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-250, 9,600 GVWR
<i>Year</i>	*2007
<i>Cost</i>	\$34,687
<i>Useful Life</i>	12 years
<i>Current Life</i>	11 years



The Village Forester(s) utilizes this pick-up truck for their daily activities. The vehicle is equipped with a snowplow; tailgate lift, emergency lighting, toolbox, and two-way radio. In addition to serving as the Forester's daily use vehicle, it is used in the leaf collection and snow removal programs. *This vehicle is a 2007 model purchased in 2006.

Project Description & Justification

An estimated cost of \$40,000 to replace a 2005 Ford pick-up truck.

Project Update

Replacement of this unit was previously deferred from 2018 to 2020 based on a review of maintenance costs. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE		
Account Number/Description	11233030-480200-40515	T-44
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030	
Personnel Costs	None	
Training Costs	None	

Water Management – Vehicles

Van (T-25) Water Meter Shop	2020	\$32,000	Water - Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Chevrolet
<i>Model</i>	Express Cargo
<i>Year</i>	2004
<i>Cost</i>	\$25,854
<i>Useful Life</i>	14 years
<i>Current Life</i>	13 years



Personnel in the Water Management Department (Meter Shop) use this vehicle for daily activities. The van is equipped with various storage shelving, emergency lighting, and two-way radio. This is one of two vans (T-46 and T-25) utilized by the Meter Shop.

Project Description & Justification

An estimated cost of \$32,000 to replace a 2004 Chevrolet cargo van.

Project Update

Replacement of this unit was previously deferred to 2020, and there are no additional updates for this vehicle. When removed from service, this van will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	41828090-480275-40445 / T-25
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Pick-Up Truck (T-15)	2021	\$44,000	GF - Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-350 HD 4WD, 10,100 GVWR
<i>Year</i>	2009
<i>Cost</i>	\$35,109
<i>Useful Life</i>	12 years
<i>Current Life</i>	8 years



Various personnel in the Engineering and Public Works Department (Street Division) utilize this truck for their daily activities. The vehicle is equipped with a snowplow; tailgate lift, leaf pusher, emergency lighting and two-way radio.

Project Description & Justification

An estimated cost of \$44,000 to replace a 2009 Ford pick-up truck.

Project Update

Replacement of this unit was previously deferred from 2018 to 2021 based on a review of maintenance costs. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480200-40470 / T-15
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Pick-Up Truck (T-20)	2021	\$40,000	GF - Operating
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-	Critical
X	Recommended
-	Contingent on Funding

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-350 HD 4WD, 10,100 GVWR
<i>Year</i>	2009
<i>Cost</i>	\$31,472
<i>Useful Life</i>	12 years
<i>Current Life</i>	8 years



Various personnel in the Engineering and Public Works Department (Street Division) utilize this truck for their daily activities. The vehicle is equipped with a snowplow, leaf pusher, emergency lighting and two-way radio.

Project Description & Justification

An estimated cost of \$40,000 to replace a 2009 Ford pick-up truck.

Project Update

Replacement of this unit was previously deferred from 2018 to 2021 based on a review of maintenance costs. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Account Number/Description	11233030-480200-40475 /T-20
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Pick-Up Truck (T-26)	2021	\$44,000	GF - Operating
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-	Critical
X	Recommended
-	Contingent on Funding

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-350 HD 4WD, 10,100 GVWR
<i>Year</i>	2009
<i>Cost</i>	\$35,166
<i>Useful Life</i>	12 years
<i>Current Life</i>	8 years



Various personnel in the Engineering and Public Works Department (Street Division) utilize this truck for their daily activities. The vehicle is equipped with a snowplow, leaf pusher, emergency lighting and two-way radio.

Project Description & Justification

An estimated cost of \$44,000 to replace a 2009 Ford pick-up truck.

Project Update

Replacement of this unit was previously deferred from 2018 to 2021 based on a review of maintenance costs. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Account Number/Description	11233030-480200-40480 / T-26
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Pick-Up Truck (T-36)	2021	\$40,000	GF - Operating
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-	Critical
X	Recommended
-	Contingent on Funding

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-350 HD 4WD, 10,100 GVWR
<i>Year</i>	2009
<i>Cost</i>	\$31,323
<i>Useful Life</i>	12 years
<i>Current Life</i>	8 years



Various personnel in the Engineering and Public Works Department (Street Division) utilize this truck for their daily activities. The vehicle is equipped with a snowplow, leaf pusher, emergency lighting and two-way radio.

Project Description & Justification

An estimated cost of \$40,000 to replace a 2009 Ford pick-up truck.

Project Update

Replacement of this unit was previously deferred from 2018 to 2021 based on a review of maintenance costs. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480200-40495 /T-36
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Pick-Up Truck (T-47)	2021	\$43,000	GF - Operating
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-	Critical
X	Recommended
-	Contingent on Funding

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-350 HD 4WD, 10,100 GVWR
<i>Year</i>	2009
<i>Cost</i>	\$37,489
<i>Useful Life</i>	12 years
<i>Current Life</i>	8 years



Various personnel in the Engineering and Public Works Department (Street Division) utilize this truck for their daily activities. The vehicle is equipped with a snowplow, leaf pusher, emergency lighting and two-way radio.

Project Description & Justification

An estimated cost of \$43,000 to replace a 2009 Ford pick-up truck.

Project Update

Replacement of this unit was previously deferred from 2018 to 2021 based on a review of maintenance costs. When removed from service, this vehicle will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Account Number/Description	11233030-480200-40520 /T-47
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Hybrid SUV (P-13) Buildings & Grounds	2021	\$30,000	GF - Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	Escape Hybrid
<i>Year</i>	2007
<i>Cost</i>	\$25,650
<i>Useful Life</i>	13 years
<i>Current Life</i>	10 years



Personnel in the Engineering and Public Works Department (Village Engineers and Project Managers) utilize this utility vehicle in carrying out their daily activities/site inspections. With the intent to reduce the environmental impact of greenhouse gases, a hybrid vehicle was purchased FY2007. The vehicle is equipped with four-wheel drive, emergency lighting, and a two-way radio.

Project Description & Justification

An estimated cost of \$30,000 to replace a 2007 Ford Escape Hybrid.

Project Update

Replacement of this unit has been deferred from 2020 to 2021, based on a review of maintenance records. The new vehicle will be equipped similarly to the existing vehicle. When removed from service, this unit will be traded in on a new vehicle acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11202035-480100-40140 /P-13
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Stump Grinder (C-6)	2021	\$30,000	GF - Operating
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- Critical
- X Recommended
- Contingent on Funding

Vehicle Description

<i>Make</i>	Carlton
<i>Model</i>	7500
<i>Year</i>	2001
<i>Cost</i>	\$21,350
<i>Useful Life</i>	15 years
<i>Current Life</i>	16 years



Personnel in the Engineering and Public Works Department (Street Division) operate this stump grinder as part of tree removal operations/site restoration. This unit is hydraulically operated and equipped with a 21" diameter cutting wheel.

Project Description & Justification

An estimated cost of \$30,000 to replace a 2001 Carlton stump grinder.

Project Update

Replacement of this unit has been deferred from 2020 to 2021 based on a review of maintenance records. This machine is utilized to grind approximately 75 parkway tree stumps (under 12 inch diameter trees) each year. When removed from service, this machine will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years, lease a stump grinder on an as needed basis from an area equipment vendor for approximately \$1,800 per week or seek additional contractual assistance (approximately \$3,000 to \$3,500 per year) in lieu of equipment replacement for stump grinding of parkway trees under 12-inches diameter.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480275- 40320 / C-6
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Sewer Televising Truck (T-45)	2021	\$300,000	Sewer - Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Chevrolet/Cues
<i>Model</i>	CC5500, 19,500 GVWR
<i>Year</i>	2006
<i>Cost</i>	\$189,000
<i>Useful Life</i>	12 years
<i>Current Life</i>	10 years



Personnel in the Engineering and Public Works Department (Water/Sewer) utilize this truck to televise underground sewer infrastructure. The vehicle is equipped with a CUES sewer televising system used to locate various sewer problems including collapses and blockages. The truck is also equipped with emergency lighting and two-way radio.

Project Description & Justification

An estimated cost of \$300,000 to replace the existing unit with a similar configuration, including new truck chassis, televising equipment (i.e. cameras and transporters) and computer hardware/software.

Project Update

Replacement of this unit was previously deferred to 2021. A total of \$21,000 was spent in 2015 to repair one camera, transporter and light stick (totaling \$16,400), and to replace the computer hardware and upgrade the CUES software program (\$4,600) – repairs were made to all original equipment from the initial purchase in 2006. When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project, reschedule the work during later years, retrofit existing unit at projected 50% cost savings, or explore options to outsource televising services; although, lose capability, flexibility and conveniences of being able to perform this service (investigate problem sites, determine source whether public or private matter) on a daily basis and at a moment's notice.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	40807090-480275-40450 /T-45
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Engineering and Public Works – Vehicles

Hybrid SUV (P-16) Buildings & Grounds	2021	\$30,000	W/S -Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	Escape Hybrid
<i>Year</i>	2007
<i>Cost</i>	\$25,650
<i>Useful Life</i>	13 years
<i>Current Life</i>	10 years



The Water/Sewer Superintendent utilizes this utility vehicle in their daily activities. With the intent to reduce the environmental impact of greenhouse gases, a hybrid vehicle was purchased FY2007. The vehicle is equipped with four-wheel drive, emergency lighting, and a two-way radio.

Project Description & Justification

An estimated cost of \$30,000 to replace a 2007 Ford Escape Hybrid.

Project Update

Replacement of this unit has been deferred from 2020 to 2021, based on a review of maintenance records. The new vehicle will be equipped similarly to the existing vehicle. When removed from service, this unit will be traded in on a new vehicle acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	40807090-480275-40155 /P-16 (50%) 41838090-480275-40155 /P-16 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Street Sweeper (S-1)	2022	\$230,000	GF and W/S Operating (50/50)
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- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Elgin
<i>Model</i>	Pelican Sweeper
<i>Year</i>	2013
<i>Cost</i>	\$181,041
<i>Useful Life</i>	10 years
<i>Current Life</i>	5 years



Various personnel in the Engineering and Public Works Department (Street Division) use this machine to sweep streets and collect leaves. The machine is a mechanical type street sweeper equipped with emergency lighting, and a two-way radio.

Project Description & Justification

An estimated cost of \$230,000 to replace a 2013 Elgin/Pelican street sweeper.

Project Update

This sweeper is the only mechanical type sweeper owned by the Village, the other being a regenerative air type street sweeper. Each type of sweeper has its benefits as the regenerative air type is better suited at collecting fine debris while the mechanical sweeper is better with larger debris. Both sweepers are used throughout the year with exception of winter months, due to exposure of cold temperatures and road salt which promotes premature aging and wear of system components, and extensively (daily) during an eight-week period for leaf collection operations. Since 2013, this machine has amassed approximately 3,200 sweeping miles (or 820 miles swept annually). All in all, street sweeping operations collect approximately 700-900 cubic yards of sweeping debris each year.

Project Alternative

The alternative is to delay the project and reschedule replacement during later years. If deferred, the Village may be faced with additional extensive repairs over succeeding years, totaling approximately \$20,000, includes: interior body housing and electrical wiring corrosion, electrical faults, hydraulic system repairs (i.e. hoses, pumps, motors) and conveyor system repairs. Alternatively, street sweeping operations could be outsourced at an estimated annual cost of \$82,000 based on current unit pricing offered under the 2016 MPI bid for street sweeping; however, the MPI bid pricing includes routine sweeping operations only and does not include the cost for sweeping during leaf collection operations where five passes of Village streets are completed within an eight-week period (estimated additional cost of \$60,000-\$65,000). As a second option, a street sweeper(s) could be

leased with an anticipated monthly rate of \$11,000 each (or \$132,000 annually per unit) which does not include fuel or maintenance/repair costs.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480275- / S-1 (50%) 40807090-480275 / S-1 (25%) 41838090-480275 / S-1 (25%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Vac-All Truck (T-34)	2022	\$300,000	GF Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Peterbilt and Vac-All
<i>Model</i>	LV13FBS Catch Basin Cleaner
<i>Year</i>	2005 (received in 2007)
<i>Cost</i>	\$238,965
<i>Useful Life</i>	15 years
<i>Current Life</i>	10 years



Various personnel in the Engineering and Public Works Department (Street Division) utilize this machine for leaf collection operations along arterial streets and removal of tree stump grindings. This truck also serves as a back-up unit for catch basin cleaning operations. The existing unit is equipped with emergency lighting and a two-way radio.

Project Description & Justification

An estimated cost of \$300,000 to replace a 2005 Peterbilt/Vac-All catch basin cleaner.

Project Update

Replacement of this unit was previously deferred from 2019 to 2022, based on a review of maintenance records. The new vehicle will be equipped similarly to the existing vehicle. When removed from service, this unit will be traded in on a new vehicle acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule replacement during later years. However, if deferred, the Village may be faced with additional extensive repairs over succeeding years, including fan assembly and housing. Alternatively, leaf operations (Vac-Truck) could be outsourced at an estimated annual cost of \$67,200 (or \$8,400 per week, 8-week program) based on pricing incurred during the 2016 leaf season from Advanced Disposal.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11233030-480275- / T-34
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Brush Chipper (C-07)	2022	\$85,000	GF - Operating
-	Critical		
X	Recommended		
-	Contingent on Funding		

Vehicle Description

<i>Make</i>	Morbark
<i>Model</i>	2400XL
<i>Year</i>	2004
<i>Cost</i>	\$36,500
<i>Useful Life</i>	17 years
<i>Current Life</i>	13 years



Personnel in the Engineering and Public Works Department (Street Division) operate this hydraulic brush chipper while conducting forestry service requests (i.e. tree pruning and removal) and storm clean-up efforts. The existing brush chipper is capable of grinding branches up to 18" in diameter which assists in eliminating the need for separate hauling/disposal of log debris. The new machine will be equipped similarly to the existing unit and have emergency lighting.

Project Description & Justification

An estimated cost of \$85,000 to replace a 2004 Morbark brush chipper.

Project Update

This machine is one of two brush chippers (C-07 and C-09) owned by the Village and currently serves as the primary chipper. However, in the event of wind and/or ice storms causing widespread damage to parkway trees, both brush chippers are utilized extensively to provide storm clean-up. If one of the machines breaks down during clean-up efforts, response time is reduced by one-half. Likewise, if the primary chipper breaks down while in the process of conducting routine parkway tree maintenance (e.g. pruning service requests), the secondary chipper serves as its replacement and there are no disruptions in service. If approved, staff recommends a replacement unit that is similarly equipped to handle branch diameters up to 18" which promotes more efficient operations by eliminating/curtailing the cost of additional resources (e.g. labor, equipment and disposal fees) to handle, process debris twice (e.g. larger branches and logs). For example, it reduces the incidents of logs resting on parkways, awaiting collection from a second crew (loader/large dump truck), and the second handling of log debris back at the Public Works Facility. When removed from service, this machine will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years. If a significant breakdown to this machine occurs during an emergency situation, a second machine may need to be leased at an estimated weekly rate of \$2,000 until repairs can be completed. Contractual assistance could also be pursued for storm clean-up as another alternative, however, depending on the

magnitude of the storm, their availability may be scarce, limited or unavailable (e.g. contractor may offer to furnish only the required minimum resources, equipment and personnel, to comply with contract provisions at costs that equal or exceed the weekly rental fee of a brush chipper).

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11233030-480275 /C-7
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Trailer – Light Poles (C-26)	2022	\$11,000	GF - Operating
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- Critical
- X Recommended
- Contingent on Funding

Vehicle Description

Make	Sauber Mfg.
Model	4300S
Year	1994
Cost	\$4,960
Useful Life	25 years
Current Life	23 years



Personnel in the Engineering and Public Works Department (Street Division) utilize this trailer to transport light poles of varying lengths out to jobsites. The existing unit has no optional equipment and was designed specifically for this task. The new trailer will be equipped similarly to the existing unit.

Project Description & Justification

An estimated cost of \$11,000 to replace a 1994 Sauber Mfg. light pole trailer.

Project Update

The new unit will be equipped similarly to the existing trailer. When removed from service, this trailer will be traded in on a new acquisition, or auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the project and reschedule the work during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11233030-480275 / C-26
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Large Dump Truck (T-33)	2022	\$165,000	W/S Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	International
<i>Model</i>	4400, 36,200 GVWR
<i>Year</i>	2003
<i>Cost</i>	\$83,493
<i>Useful Life</i>	17 years
<i>Current Life</i>	14 years



Water/Sewer Division personnel use this dump truck for daily activities and it is also used to assist in the snow and ice control operations. This is one of two large dump trucks assigned to the Water/Sewer Division (T-33 and T-40), both are identical configured units. The vehicle is equipped with a five-yard dump body, 10-foot power-angling snowplow, tailgate salt spreader, emergency lighting, and two-way radio.

Project Description & Justification

An estimated cost of \$165,000 to replace a 2003 model International dump truck.

Project Update

Replacement of this truck has been deferred to 2022 based on a review of maintenance records. The large dump trucks are utilized at large-scale excavation sites for efficient transport of spoils, backfill materials and other materials to repair infrastructure (i.e. sand, crushed stone, topsoil, small tools and equipment, trash pumps, sewer structures-catch basins, inlets, manhole covers and frames, clamps, water sleeves and piping). When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	40807090-480225-40610 T-33, 50% 41838090-480225-40610 T-33, 50%
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Small Dump Truck (T-14)	2022	\$55,000	W/S Operating
- Critical			
X Recommended			
- Contingent on Funding			

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	F-350, 15,000 GVWR
<i>Year</i>	2012
<i>Cost</i>	\$36,683
<i>Useful Life</i>	10 years
<i>Current Life</i>	5 years



This vehicle is categorized as a small dump truck and is used daily by various personnel in the Engineering and Public Works Department (Sewer/Water Division) to transport materials and various aggregates to and from work sites.

Project Description & Justification

An estimated cost of \$55,000 to replace a 2012 Ford dump truck.

Project Update

Replacement of this unit has been deferred from 2021 to 2022, reflecting a 10-year replacement cycle and the projected cost has increased by \$5,000 due to rising manufacturer/material costs. The replacement truck will include a gas engine, stainless steel dump body, electric hoist (for dump body), tunnel tool box, emergency lighting and two-way radio. This is one of three small dump trucks assigned to the Water/Sewer Division. All three trucks are utilized on a daily basis to transport excavation spoils, backfill materials and other materials to repair infrastructure (i.e. sand, crushed stone, topsoil, small tools and equipment, trash pumps, sewer structures-catch basins, inlets, manhole covers and frames, clamps, water sleeves and piping). When removed from service, this truck will be traded in on a new acquisition, or be auctioned through the Northwest Municipal Conference.

Project Alternative

The alternative is to delay the purchase and reschedule during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	40807090-480250-40545 /T-35 (50%) 41838090-480250-40545 /T-35 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Electric Scissor Lift	2019	\$ 21,000	GF - Operating
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Facilities- Building and Grounds- Village wide

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

This is a new purchase for 2019

Funding History

N/A

Project Description & Justification

This request is for primary use by Facilities Maintenance but also would be available to any Village Department.

On average, based on recent history (i.e. twice per year), the Village rents a lift for use by in-house staff or contractor(s) to facilitate repairs to Village facilities and/or equipment. This includes, but not limited to, HVAC equipment, Garage doors, lighting, electrical equipment etc.

The cost of rental and delivery for a scissor lift is approximately \$500 per week, but could be much more if the lift were needed for an extended period. If the Village were to purchase its own lift, it would be available every day (regular and off-hours) and for use by other Departments. A new scissor lift has an expected service life 20-25 years depending on its use and available parts. Based on projected incurred annual rental fees (four weekly rentals at approximately \$1,750), the lift would pay for itself within 10-years.

Denoted below is a history of rental fees incurred over the past three years:

- 2015 \$ 448 for one rental
- 2016 \$ 1,718 for four rentals
- 2017 \$ 495 for one rental (through May, 2017)

By having access to a lift at any time, staff could perform many smaller tasks more readily and safely without the need for extra personnel to assist. Any maintenance task greater than 15-feet cannot safely be accessed with a ladder, thus requiring an aerial lift. There are numerous overhead facilities located at the Public Works Facility (i.e. garage areas and wash bay facility) and Fire Stations 26 & 27. Also, other miscellaneous facilities maintenance projects, which were previously deferred due to added rental expenses, could be scheduled/completed by in-house staff.

The estimated cost for this request does include the added cost for purchase of a dual axel trailer to tow the lift from facility to facility.

Project Update

This was a new CIP request for 2017 and has been deferred to 2019.

Project Alternative

As a less costly purchase option, purchase a refurbished unit with an estimated savings of \$8,000 or continue renting lifts on an as needed basis for facilities maintenance operations.

Operating Budget Impact

Is this purchase _____ *routine* or ___X___ *non-routine*?

NONROUTINE	
Account Number/Description	None
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

**Ten Year Capital Improvement Program
Police Vehicle Summary**

Police Department	Year	Vehicle #	Page	This Project is:	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
Marked Squad Car	2014	SQ-501	1	Recommended	38,000	-	-	40,000	78,000	40,000	118,000	Operating
Shift Supervisor	2014	SQ-503	1	Recommended	38,000	-	-	40,000	78,000	40,000	118,000	Operating
Utility Vehicle/Comm. Svc. Officers	2003	SQ-522	3	Recommended	-	-	-	-	-	-	-	Operating
Marked Squad Car	2015	SQ-505	1	Recommended	-	39,000	-	-	39,000	80,000	119,000	Operating
Marked Squad Car	2015	SQ-508	1	Recommended	-	39,000	-	-	39,000	80,000	119,000	Operating
Marked Squad Car	2015	SQ-510	1	Recommended	-	39,000	-	-	39,000	80,000	119,000	Operating
Marked Squad Car	2015	SQ-512	1	Recommended	-	39,000	-	-	39,000	80,000	119,000	Operating
Watch Commander	2016	SQ-504	1	Recommended	-	-	40,000	-	40,000	40,000	80,000	Operating
Marked Squad Car	2016	SQ-506	1	Recommended	-	-	40,000	-	40,000	40,000	80,000	Operating
Marked Squad Car	2016	SQ-507	1	Recommended	-	-	40,000	-	40,000	40,000	80,000	Operating
Marked Squad Car	2016	SQ-511	1	Recommended	-	-	40,000	-	40,000	40,000	80,000	Operating
Speed Trailer	2002	SQ-516	5	Recommended	-	-	20,000	-	20,000	-	20,000	Operating
Utility Vehicle	2007	SQ-515	6	Recommended	-	-	-	40,000	40,000	-	40,000	Operating
Unmarked Squad Car	2013	SQ-523	7	Recommended	-	-	-	40,000	40,000	-	40,000	Operating
Unmarked Minivan/Detectives	2012	SQ-525	N/A	N/A	-	-	-	-	-	40,000	40,000	Operating
Unmarked Interceptor Car/Deputy Chief	2015	SQ-502	N/A	N/A	-	-	-	-	-	40,000	40,000	Operating
Unmarked Utility Interceptor/Deputy Chief	2017	SQ-514	N/A	N/A	-	-	-	-	-	40,000	40,000	Operating
Unmarked Utility Interceptor/Police Chief	2017	SQ-509	N/A	N/A	-	-	-	-	-	40,000	40,000	Operating
Utility Vehicle/Parking Enforcement	2016	SQ-521	N/A	N/A	-	-	-	-	-	-	-	Operating
Unmarked Utility Interceptor/Detectives	2017	SQ-513	N/A	N/A	-	-	-	-	-	-	-	Operating
Unmarked Utility Interceptor/Detectives	2017	SQ-500	N/A	N/A	-	-	-	-	-	-	-	Operating
Total (21 vehicles)					76,000	156,000	180,000	160,000	572,000	720,000	1,292,000	

Proposed Financing	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total
General Fund- Operations	76,000	156,000	180,000	160,000	572,000	720,000	1,292,000
Grant Funding	-	-	-	-	-	-	-
Total	76,000	156,000	180,000	160,000	572,000	720,000	1,292,000

Project Rating

Critical	-	-	-	-	-	-	-
Recommended	76,000	156,000	180,000	160,000	572,000	720,000	1,292,000
Contingent	-	-	-	-	-	-	-
Total	76,000	156,000	180,000	160,000	572,000	720,000	1,292,000

Police – Vehicles

Marked Squad Cars	2018	\$ 76,000	(2)	Operating
	2019	\$156,000	(4)	
	2020	\$160,000	(4)	
	2021	\$ 80,000	(2)	
	2022	\$ 80,000	(2)	

- Critical
- X Recommended
- Contingent on Funding



New SUV Vehicle Model



Existing Sedan Model

The Police Department uses 10 marked squad vehicles for daily patrol and emergency response activities. The vehicles are equipped with a laptop computer, moving radar equipment and a forward facing video camera. The estimated cost of the vehicle includes \$8,000 for an LED emergency light bar, exterior Police markings and miscellaneous parts needed to install major components. When these vehicles are replaced, the laptop, radar and video equipment will be removed and installed in the new vehicle.

Description	Vehicle #	Cost (\$)	In-Service Year	Replacement Year	# of Breakdowns	Repair Cost (2 Years)	Miles	Projected Miles at Replacement
Patrol	SQ-501	\$ 38,000	1/4/15	2018	23	\$2,542	56,124	100,000
Shift Supv.	SQ-503	\$ 38,000	10/31/14	2018	13	\$1,755	45,914	100,000
Patrol	SQ-505	\$ 39,000	2015	2019	n/a	n/a	41,775	100,000
Patrol	SQ-508	\$ 39,000	2015	2019	n/a	n/a	40,638	100,000
Patrol	SQ-510	\$ 39,000	2015	2019	n/a	n/a	39,391	100,000
Patrol	SQ-512	\$ 39,000	2015	2019	n/a	n/a	39,945	100,000
Shift Supv.	SQ-504	\$ 40,000	2016	2020	n/a	n/a	15,138	100,000
Patrol	SQ-506	\$ 40,000	2016	2020	n/a	n/a	13,840	100,000
Patrol	SQ-507	\$ 40,000	2016	2020	n/a	n/a	16,131	100,000
Patrol	SQ-511	\$ 40,000	2016	2020	n/a	n/a	22,175	100,000
Patrol	SQ-501	\$ 40,000	2018	2022	n/a	n/a	n/a	100,000
Shift Supv.	SQ-503	\$ 40,000	2018	2022	n/a	n/a	n/a	100,000

*Breakdowns are shown only for those vehicles that are to be replaced in the next fiscal year.

Project Description & Justification

In 2018, the estimated cost to replace two marked squad cars is \$76,000.

Project Update

The CIP pages for individual squad cars were consolidated into the table as shown on the first page. After the vehicle is replaced, the current unit will be transferred to another department for administrative use, traded in on a new vehicle acquisition, or auctioned through the Northwest Municipal Conference or another on-line auction service.

Project Alternative

Deferral beyond four years is not recommended for patrol vehicles. The reliability of a vehicle to handle emergency responses decreases with age and use, also maintenance and repair costs increase accordingly.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11414020-480300 / Marked Squad Cars
Maintenance Costs	Maintenance costs are funded through the Vehicle Maintenance account: 11273030.
Personnel Costs	None
Training Costs	None

Police – Vehicles

Utility Vehicle – SQ522

2018

\$0

Operating

Community Service Officer

- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	Expedition
<i>Year</i>	2003
<i>Cost</i>	\$28,481
<i>Useful Life</i>	14 years
<i>Current Life</i>	14 years



This vehicle is assigned to the Community Service Officers for traffic control and enforcement, parking control, crime scene processing and monitoring of homes that are on the watch list. The vehicle will have the following equipment: LED light bar, emergency lighting, and exterior graphics.

Project Update

The current mileage for this unit is 45,413 with an average of 3,200 miles driven every year. Staff anticipates replacing this vehicle with a Ford Utility Interceptor or like vehicle. Instead of replacing this vehicle with a new squad, this vehicle will be replaced with a patrol vehicle that is being cycled out. After replacement, this unit will be transferred to another department for administrative use, traded in on a new vehicle acquisition, or auctioned through the Northwest Municipal Conference or another on-line auction service.

SQ-522	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	16
Labor Hours	50.50
Labor Cost	\$1,854.00
Parts Cost	\$1,470.31
Total Cost	\$3,324.31
Total Equipment Miles	45,413
Total Equipment Hours	N/A

Project Alternative

Deferral beyond 14 years is not recommended for this vehicle. The reliability decreases as the vehicle ages, and maintenance and repair cost increase accordingly.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11414020-480300-40785 / Squad #522
Maintenance Costs	Maintenance costs are funded through the Vehicle Maintenance account: 11273030.
Personnel Costs	None
Training Costs	None

Speed Trailer – SQ516	2020	\$20,000	Operating
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- Critical
- X Recommended
- Contingent on Funding

Vehicle Description

<i>Make</i>	Kustom Signals
<i>Model</i>	5705 Speed Trailer
<i>Year</i>	2002 (*purchased in 2004)
<i>Cost</i>	\$9,999
<i>Useful Life</i>	15 years
<i>Current Life</i>	15 years



This trailer is a mobile unit that can be set up at various locations throughout the Village to alert motorists of their speed and increase compliance with speed laws. The unit displays the speed of an on-coming vehicle, and then flashes and changes to bright red in color to alert motorists if they are exceeding the speed limit. The unit is a 2002 demonstrator model that was purchased at a reduced cost in 2004. The trailer is solar-powered and equipped with a speed limit display rack, radar unit, alarm system, striping, and solar panel.

Project Update

This unit was previously deferred to 2020. After replacement, this unit will be traded in on a new vehicle acquisition, or auctioned through the Northwest Municipal Conference or another on-line auction service.

Project Alternative

The Department is looking into lower cost alternatives such as pole-mounted units.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11414020-480300-
Maintenance Costs	Maintenance costs are funded through the Vehicle Maintenance account: 11273030.
Personnel Costs	None
Training Costs	None

Police – Vehicles

Utility Vehicle – SQ515	2021	\$40,000	Operating
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- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Chevrolet
<i>Model</i>	Tahoe
<i>Year</i>	2007
<i>Cost</i>	\$28,062
<i>Useful Life</i>	14 years
<i>Current Life</i>	10 years



This vehicle is assigned to patrol for traffic control and enforcement, parking control, crime scene processing and monitoring of homes that are on the watch list. The estimated cost of this unit includes \$8,000 for the LED emergency lighting, exterior graphics, and miscellaneous parts needed to install major components such as, radios, and siren control box.

Project Update

Staff anticipates replacing this vehicle with a Ford Utility Interceptor or like vehicle. After replacement, this unit will be transferred to another department for administrative use, traded in on a new vehicle acquisition, or auctioned through the Northwest Municipal Conference or another on-line auction service.

Project Alternative

Deferral beyond 14 years is not recommended for this vehicle. The reliability decreases as the vehicle ages, and maintenance and repair cost increase accordingly.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	11414020-480300-
Maintenance Costs	Maintenance costs are funded through the Vehicle Maintenance account: 11273030.
Personnel Costs	None
Training Costs	None

Police – Vehicles

Unmarked Squad Car – SQ523	2019	\$40,000	Operating
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- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Ford
<i>Model</i>	Taurus Interceptor
<i>Year</i>	2013
<i>Cost</i>	\$29,996
<i>Useful Life</i>	8 years
<i>Current Life</i>	4 years



This vehicle is assigned to the Mission Team for traffic control and enforcement and monitoring of crime patterns. The estimated cost of this unit includes \$8,000 for the LED emergency lighting, exterior graphics, and miscellaneous parts needed to install major components such as, radios, and siren control box.

Project Update

Staff anticipates replacing this vehicle with a Ford Utility Interceptor or like vehicle. After replacement, this unit will be transferred to another department for administrative use, traded in on a new vehicle acquisition, or auctioned through the Northwest Municipal Conference or another on-line auction service.

Project Alternative

Deferral beyond 8 years is not recommended for this vehicle. The reliability decreases as the vehicle ages, and maintenance and repair cost increase accordingly.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	11414020-480300-40790 SQ-523
Maintenance Costs	Maintenance costs are funded through the Vehicle Maintenance account: 11273030.
Personnel Costs	None
Training Costs	None

**Ten Year Capital Improvement Program
Fire Vehicle Summary**

Fire Department	Year	Vehicle #	Page	This Project is:	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
Emergency One Pumper	1996	FD-205	1	Recommended	625,000	-	-	-	625,000	-	625,000	Operating
Ambulance	2009	FD-209	3	Recommended	-	250,000	-	-	250,000	-	250,000	Operating
Marion Squad Rescue Truck	1999	FD-201	5	Recommended	-	-	400,000	-	400,000	-	400,000	Operating
Rescue Boat	1997	FD-214	7	Recommended	-	-	45,000	-	45,000	-	45,000	Operating
Utility Vehicle	2000	FD-207	9	Recommended	-	-	-	90,000	90,000	-	90,000	Operating
Pierce Reserve Quint	1992	FD-202	N/A	N/A	-	-	-	-	-	-	-	Bond
Emergency One Pumper	1989	FD-206	N/A	Recommended	-	-	-	-	-	615,000	615,000	Bond
Light Duty Squad Truck	2013	FD-200	N/A	Recommended	-	-	-	-	-	200,000	200,000	Operating
Incident Command Van	2006	FD-213	N/A	Recommended	-	-	-	-	-	70,000	70,000	Operating
Emergency One Pumper	2013	FD-217	N/A	Recommended	-	-	-	-	-	615,000	615,000	Bond
Emergency One Quint	2009	FD-204	N/A	Recommended	-	-	-	-	-	1,350,000	1,350,000	Bond
Department Pool Vehicle	2005	FD-216	N/A	N/A	-	-	-	-	-	-	-	Operating
Ambulance	2015	FD-211	N/A	N/A	-	-	-	-	-	-	-	Operating
Deputy Fire Chief's Vehicle	2015	FD-210	N/A	N/A	-	-	-	-	-	-	-	Operating
Fire Chief's Vehicle	2015	FD-208	N/A	N/A	-	-	-	-	-	-	-	Operating
Duty Chief Vehicle/Incident Command Vehicle	2016	FD-203	N/A	N/A	-	-	-	-	-	-	-	Operating
Ambulance	2016	FD-212	N/A	N/A	-	-	-	-	-	-	-	Operating
Total (17 vehicles)					625,000	250,000	445,000	90,000	1,410,000	2,850,000	4,260,000	

Proposed Financing	2018	2019	2020	2021 & 2022	Five-Year Total	2023-2027	Ten-Year Total
General Fund - Operations	625,000	250,000	445,000	90,000	1,410,000	270,000	1,680,000
General Fund - Bond Proceeds	-	-	-	-	-	2,580,000	2,580,000
General Fund - Other/TBD	-	-	-	-	-	-	-
Total	625,000	250,000	445,000	90,000	1,410,000	2,850,000	4,260,000

Project Rating

Critical	-	-	-	-	-	-	-
Recommended	625,000	250,000	445,000	90,000	1,410,000	2,850,000	4,260,000
Contingent	-	-	-	-	-	-	-
Total	625,000	250,000	445,000	-	1,410,000	2,850,000	4,260,000

Fire – Vehicles

Emergency One Pumper FD - 205

2018

\$625,000

Operating

Sewer - Water Fund

- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

Make Emergency One
Model Pumper
Year 1996
Cost \$257,867
Useful Life 18 years
Current Life 22 years



The Village has three pumper trucks purchased in 1989, 1996, and 2013. This 1996 Emergency One Pumper was purchased as a 1,500-gallon per minute fire pumper with a 500-gallon water tank and a full complement of fire hose, ladders and equipment. The pumpers are rotated to extend the life of each vehicle. However, due to the age of this vehicle, it has become difficult to find repairs parts which often prolongs the amount of time it's out of service.

This vehicle was originally planned to be refurbished in 2006, but was postponed due to the expense, experience and cost benefit of refurbishing two other fire vehicles. In order to properly refurbish a vehicle to meet current National Fire Protection Association (NFPA) standards, the cost exceeds \$250,000 (almost half of the cost of a new vehicle).

Vehicle	Year	Date	Road Mileage	Engine Hours	Actual Mileage
FD-205	1996	5/17	106,583	12,349	308,725

*Fire and EMS vehicles use a conversion of 25 miles per engine hour due to the on scene time at an emergency call.

Project Update

The replacement of this vehicle has been deferred from 2014 to 2018. This vehicle needs extensive repairs due to corrosion which was estimated in 2012 to cost \$26,000. It is noted that this vehicle is 6 years newer than FD 206. FD 206 was refurbished in 2000 which included a complete overhaul of the pump, chassis, body both interior and exterior, and motor. FD 206 has also had major additional refurbishment as recently as 2008. The current plan includes adding a 35' ladder to the new engine to allow it to serve as a standby vehicle for the front line Tower. This addition will allow the

department to meet the current operational needs that have been identified by the fire department command staff while eliminating a \$1,250,000 vehicle from the CIP.

Project Alternative

Delay the purchase of this vehicle and incur increased maintenance cost and increased out of service time or sell this vehicle and purchase a used vehicle from another community that is newer.

Operating Budget Impact

Is this purchase *routine* _____ or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	Maintenance costs are funded through the Fire Supplies-Automotive Parts account: 11515020-430100.
Personnel Costs	None
Training Costs	None

FD 205	
Breakdown/Repairs 2015-2016	
Number of Breakdown/Repairs	27
Labor Hours	138.75
Inside Labor Cost	\$ 7,725.60
Outside Labor Cost	0
Inside Parts Cost	\$ 2,584.92
Outside Parts Cost	0
Total Cost	\$ 10,274.52

Fire – Vehicles

Ambulance – FD - 209	2019	\$250,000	Operating
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- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Ford F-350
<i>Model</i>	Type I Ambulance
<i>Year</i>	2009
<i>Cost</i>	\$154,000
<i>Useful Life</i>	8 years
<i>Current Life</i>	9 years



Wilmette Fire Department ambulances are equipped with all the required items to meet the standard as established by the Illinois Department of Public Health (IDPH) for an Advanced Life Support vehicle. This is one of three Advanced Life Support ambulances owned by the Village. One ambulance is maintained at each firehouse, and a third ambulance is kept in the event another ambulance(s) is placed out of service for maintenance or repairs. The Fire Department rotates all three ambulances to extend the life of the vehicles.

It is anticipated that each ambulance should remain fully usable for eight years. The total cost of the new ambulance includes transfer of necessary medical equipment, such as the power cot and auto loading system.

Note: New vehicles will be required to meet new diesel emission standards.

Vehicle	Year	Date	Road Mileage	Engine Hours	Actual Mileage
FD-209	2009	5/17	43,664	4,794	119,850

*Fire and EMS vehicles use a conversion of 25 miles per engine hour due to the on scene time at an emergency call.

Project Update

None.

Project Alternative

Delay the purchase of this vehicle and incur increased maintenance cost and out of service time, or sell this vehicle and purchase a used vehicle from another community that is newer.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs	Maintenance costs are funded through the Fire Supplies-Automotive Parts account: 11515020-430100.
Personnel Costs	None
Training Costs	None

Fire – Vehicles

Marion Squad Rescue Truck FD-201	2020	\$400,000	Operating
---	-------------	------------------	------------------

- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	Marion
<i>Model</i>	Squad Truck
<i>Year</i>	1999
<i>Cost</i>	\$285,481
<i>Useful Life</i>	15 years
<i>Current Life</i>	19 years



This Squad Rescue Truck is equipped with specialized rescue equipment for underwater rescues, hazardous materials (HAZMAT) responses, above-ground and below-ground rescues. This is a multi-purpose vehicle that has the capability to respond to any fire, or serious emergency call and provide additional operational support at an incident scene. This vehicle provides support for the extraction of a victim trapped in an automobile as a result of an accident. In addition, it provides storage for additional equipment; and during extended emergencies, it can provide space for rehabilitation of firefighters and donning of special gear.

Vehicle	Year	Date	Road Mileage	Engine Hours	Actual Mileage
FD-201	1999	5/17	13,556	1743	43,575

*Fire and EMS vehicles use a conversion of 25 miles per engine hour due to the on scene time at an emergency call.

Project Update

This project is being deferred from 2016 to 2020 due to the assessment of vehicle assignments and efficiency. The Fire Department has started using a light rescue vehicle which will allow this vehicle to be primarily used as the Dive, Technical Rescue and Hazardous Material vehicle which will lengthen its expected useful life. This vehicle can also act as a back up to the light rescue vehicle.

Project Alternative

Delay the purchase of this vehicle due to its relatively low use. Additionally, a smaller vehicle can be purchased reducing the purchase cost depending on future operational needs.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs	Maintenance costs are funded through the Fire Supplies-Automotive Parts account: 11515020-430100.
Personnel Costs	None
Training Costs	None

Avon Rigid Hull Inflatable Boat-FD214	2020	\$45,000	Operating
--	-------------	-----------------	------------------

- Critical
 - X Recommended
 - Contingent on Funding
-

Vehicle Description

<i>Make</i>	<i>Avon</i>
<i>Model</i>	<i>Inflatable Boat</i>
<i>Year</i>	<i>1997</i>
<i>Cost</i>	<i>\$25,000</i>
<i>Useful Life</i>	<i>15 years</i>
<i>Current Life</i>	<i>21 years</i>



The 17" rigid hull inflatable boat is used to perform rescue/recovery functions in town and throughout the MABAS Divisions. The boat has proven useful on many emergency operations and training evolutions, in addition to the Wilmette Water Plant intake maintenance. The boat is used to transport water rescue personnel and acts as a dive platform for underwater operations. Sonar, remote operated vehicles, and communication equipment are also carried and operated in this boat. The size of the boat makes it very maneuverable both on land and in lakes, ponds, canals and rivers.

Vehicle	Year	Date	Road Mileage	Engine Hours	Actual Mileage
FD-214	1997	5/17	N/A	N/A	N/A

*Fire and EMS vehicles use a conversion of 25 miles per engine hour due to the on scene time at an emergency call.

Project Update

No update

Project Alternative

Delay the purchase of this boat and continue to use it while evaluating its condition.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs	Maintenance costs are funded through the Fire Supplies-Automotive Parts account: 11515020-430100.
Personnel Costs	None
Training Costs	None

Utility Vehicle- FD- 207

2021

\$90,000

Operating

Make Ford
Model F- 250 4WD Utility
Year 2000
Cost \$34,875
Useful Life 10 years front line +
2 years reserve
Current Life 11 years

- Critical
- X Recommended
- Contingent on Funding



Vehicle Description

The Ford Pick-up is four-wheel drive and used for a variety of support functions. It is used by the Incident Commander during inclement weather. This vehicle is also used to move equipment or hose to and from the emergency scene and fire station. This vehicle is equipped with a plow and is used for clearing the Fire Department drives during winter snowstorms. The trailer hitch allows for the rescue boat to be taken to the scene of an emergency.

Vehicle	Year	Date	Road Mileage	Engine Hours	Actual Mileage
FD-207	2000	5/17	44947	3519	132,922

Project Update

The vehicle was scheduled for replacement in 2013. Due to the relatively good condition of the vehicle, staff has deferred replacement until 2021.

Project Alternative

Rotate the vehicle to another Village of Wilmette department and purchase a new vehicle for fire.

Operating Budget Impact

Is this purchase *routine* ____ or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	Maintenance costs associated with this piece of equipment are funded through the Supplies-auto parts account
Personnel Costs	None
Training Costs	None

Sewer Improvements – Ten Year Capital Improvement Program

This section of the Capital Improvement Plan (CIP) identifies funding for sewer improvements, which are scheduled to continue through FY 2027. The Village has a combined sewer system east of Ridge Road and a separate sanitary sewer system and separate storm sewer system west of Ridge Road. The Village's sewer system is comprised of the following:

Type of Sewer	Number of Miles
Sanitary	47.50
Storm	51.80
Combined Sanitary/Sewer	47.58
Total	146.88

Sewer improvements are funded through the Village's sewer operating fund, general obligation bond issues, and low interest loans from the Illinois Environmental Protection Agency (IEPA).

The following improvements are proposed for 2018:

Project	Cost of Improvement	Funding Source	This Project Is:
Sewer Lining & Rehabilitation	1,150,000	IEPA	Critical
Sewer Main Repairs	421,270	Operating	Critical
Sewer Maintenance	261,500	Operating	Critical
Clean Out Pumping Station Sump	35,000	Operating	Critical
Smoke Testing	130,000	Operating	Recommended
Storm Sewer Relief Project Engineering	2,500,000	Bond	Contingent
Total	\$ 4,497,770		

**Ten Year Capital Improvement Program
Sewer Summary**

Facility Improvements	Page	This Project is:	2018	2019	2020	2021-2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
STORM WATER PUMPING STATION										
Clean Out Pumping Station Sump	1	Critical	35,000	-	-	-	35,000	40,000	75,000	Operating
Pump Renovations	2	Rec.	-	35,000	35,000	-	70,000	-	70,000	Operating
Electrical Improvements	3	Rec.	-	-	1,200,000	-	1,200,000	-	1,200,000	Bond
Roof Replacement	N/A	Rec.	-	-	-	-	-	75,000	75,000	Operating

SEWER COLLECTION SYSTEM										
Sewer Lining & Rehabilitation	5	Critical	1,150,000	820,000	820,000	1,640,000	4,430,000	4,100,000	8,530,000	IEPA Loan
Sewer Main Repairs	7	Critical	421,270	327,540	336,810	701,430	1,787,050	1,700,000	3,487,050	Operating
Sewer Maintenance	9	Critical	261,500	266,720	271,940	559,540	1,359,700	1,450,000	2,809,700	Operating
5-Year Facility Plan for Sewer Lining	11	Critical	-	75,000	-	-	75,000	-	75,000	Operating
Smoke Testing	13	Rec.	130,000	130,000	130,000	130,000	520,000	-	520,000	Operating
Sewer Lateral Rehabilitation Pilot Project	15	Rec.	-	549,300	549,300	-	1,098,600	-	1,098,600	Bond
Overhead Sewer/Lateral Program	17	Rec.	-	30,000	-	-	30,000	-	30,000	Operating
Relief Sewer Improvement Program	18	Rec.	-	-	-	-	-	4,380,500	4,380,500	IEPA Loan
Storm Sewer Relief Project	20	Contingent	2,500,000	2,000,000	30,000,000	52,000,000	86,500,000	-	86,500,000	Bond
Stormwater Utility Program	22	Contingent	-	150,000	-	-	150,000	-	150,000	Operating
Total			4,497,770	4,233,560	33,343,050	55,030,970	97,105,350	11,745,500	108,850,850	

Proposed Financing	2017	2018	2019	2020 & 2021	Five-Year Total	2022-2026	Ten-Year Total
Sewer Fund- Operations	847,770	864,260	773,750	1,390,970	3,876,750	3,265,000	7,141,750
Sewer Fund- Debt/IEPA	3,650,000	3,369,300	32,569,300	53,640,000	93,228,600	8,480,500	101,709,100
Total	4,497,770	4,233,560	33,343,050	55,030,970	97,105,350	11,745,500	108,850,850

Project Rating

Critical	1,832,770	1,489,260	1,428,750	2,900,970	7,651,750	7,250,000	14,901,750
Recommended	2,665,000	2,744,300	31,914,300	52,130,000	89,453,600	4,495,500	93,949,100
Contingent	-	-	-	-	-	-	-
Total	4,497,770	4,233,560	33,343,050	55,030,970	97,105,350	11,745,500	108,850,850

Clean Out Pumping Station Sump

Sewer Fund-Sewer Improvements-SWPS

2018

2023

\$35,000

\$40,000

Operating

Operating

- X Critical
 - Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

2012 \$25,000

2006 \$12,000

2000 \$16,000



Project Description & Justification

The intake chamber for the Storm Water Pumping Station collects all of the storm water flow from the Village west of Ridge Rd. and distributes it to the two pump suction chambers in the pumping station building. Some silt, sand, and debris collect in this intake chamber. About once every five to seven years this debris needs to be removed to prevent damage to the pumping equipment and the grating in the intake chamber.

The chamber was last cleaned in FY 2012 at which accumulated debris were removed at the cost of \$25,000.

In FY 2018, clean the sump areas at the Storm Water Pumping Station (SWPS) at an estimated cost of \$35,000.

Project Update

There are no changes in this CIP.

Project Alternative

The project could be postponed another year. This could in turn increase the risk of damaging the gratings on the intake and potentially damage the pumps in the station and reducing the functionality of the station.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Pump Renovations

Sewer Fund-Sewer Improvements-SWPS

2019

\$35,000

Operating

2020

\$35,000

Operating

- Critical
- X Recommended
- Contingent on Funding

Original Purchase Date & Cost

1963

Funding History

2008 Pump 1 \$30,000
 2003 Pump 2 \$29,000
 2003 Pump 3 \$88,780 (includes the cost of conversion to VFD)

Project Description & Justification

In FY 2019, perform preventative maintenance repairs to Storm Water Pumping Station Pump 3.
 In FY 2020, perform preventative maintenance repairs to Storm Water Pumping Station Pump 2.

SWPS Pump 3 was last refurbished in 2003 and will be due for preventative maintenance repairs in 2019. The estimated cost for repairing/rebuilding this pump is \$35,000.

The west side of the Village is served by a separate sewer system. All storm water from west Wilmette is delivered to the Storm Water Pumping Station (SWPS) and is pumped into the North Branch of the Chicago River. There are five pumps in this station. Pump No. 1 pumps most of the SWPS inflow to the river during non-storm periods followed by pump 3. Pump No. 2, 4 and 5 are usually only operated during severe storm periods. Recently, Pump No. 2 & 3 was repaired/rebuilt under a preventative maintenance program. Pump No. 4 & 5 have very low running hours. SWPS pump 1 was rebuilt for \$30,000 in 2008 on an emergency basis.



Project Update

There are no changes in this CIP.

Project Alternative

The alternative is to make repairs on an emergency basis, as needed.

Operating Budget Impact

Is this purchase *routine* ____ or X *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

SWPS Electrical Improvements

2020

\$1,200,000

Bond

Sewer Fund-Sewer Improvements-SWPS

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

1991	\$283,000	Switchgear
2001	\$235,000	Pump 3 VFD

Funding History

N/A

Project Description & Justification

2020 Perform electrical improvements including replacement of the switchgear and VFD at the SWPS at an estimated cost of \$1,200,000.

The SWPS is powered by two ComEd power lines, C-585 and C-588, which power the switchgear that operates the variety of pumps and equipment at the station. The switchgear was replaced in 1991 and a typical main switchgears have an effective life of 30 years. It is due for replacement in 2020. Additionally, the current switchgear is located in an area in the SWPS that has no climate control. In order to minimize corrosion to the new equipment, an alternate location must be evaluated.



The SWPS has 5 pumps and only pump #3 has a Variable Frequency Drive (VFD). The VFD allows the staff to control the level in the sumps more efficiently by changing the speed and obtaining different flows without the need to change pumps. This VFD was installed in 2001. The typical useful life of a VFD is between 15-20 years.

In FY 2020, it is proposed to combine the replacement of the switchgear and the VFD at the SWPS for economy of scale at an estimated cost of \$1,200,000.

Project Update

This is a new CIP project.

Project Alternative

The alternative is to postpone the project for another year. However, a failure of the main switchgear will result in shutdown of the entire station and the inability to pump the stormwater from west side of the Village. A failure to pump #3 VFD will reduce the pumping capacity of the station by approximately 21 percent.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Sewer Lining and Rehabilitation	2018	\$1,150,000	IEPA Loan
Sewer Fund-Sewer Improvements-Sewer	2019	\$ 820,000	
Collection System	2020	\$ 820,000	
	2021	\$ 820,000	
	2022	\$ 820,000	
X	Critical		
-	Recommended		
-	Contingent on Funding		

Original Purchase Date & Cost

N/A

Funding History

2017	\$820,000	IEPA Loan
2016	\$701,187	IEPA Loan
2014	\$577,315	IEPA Loan
2013	\$639,425	IEPA Loan
2012	\$826,000	IEPA Loan
2011	\$906,675	IEPA Loan

Project Description & Justification

Sewer lining is a non-invasive technique to rehabilitate sewers by eliminating infiltration, structural defects, and root intrusion. The list of sewers identified as needing sewer lining grows each year. This annual expenditure is proposed to be a long-term program to address the deterioration of the Village's sewer system.

The cost estimate to line the entire sanitary sewer system, not including laterals, west of Ridge Road is estimated to be \$11,200,000. In order to address sewer backups and infiltration in this area, the Engineering Department recommends funding the program at \$820,000 beginning in 2014 which would completely line the public portion of the separate sanitary sewer system by 2028.

In addition to lining the sanitary sewer system, the combined sewers east of Ridge Road are deteriorating and in need of sewer lining. The cost estimate to line the entire combined sewer system, east of Ridge Road, is estimated to be \$14,500,000. The Engineering Department recommends continuing a lining program beyond 2028 to address the condition of the combined sewer system as well.

Project Update

In 2018, the sewer lining program will increase by an estimated \$330,000 to \$1,150,000 for the sewer on Central Avenue. Central Avenue is slated for reconstruction with the Surface Transportation Program (STP) through the North Shore Council of Mayors in 2019.

Additionally, it is anticipated that an additional \$70,000 will be needed to begin grouting lateral connections as part of the sewer lining program. The goal of the lining program is both to increase the structural integrity of the lines to avoid collapse and to reduce the amount of infiltration and inflow (I/I) into the sewer systems. Both of these will have a net effect of an increase in sanitary sewer conveyance capacity and reduce the number of potential basement back-ups and sanitary sewer overflows by removing excess clean water from the sanitary sewer system. However, the interstitial flows must be addressed to truly reduce infiltration into the sewers. This can be accomplished by grouting around the sewer lateral connections so that water does not infiltrate into the interstitial space between the liner and the host pipe and enter the sewer mains at faulty connections. This funding increase would allow grouting approximately 20% of the lateral connections at an estimated cost of \$600/connection.

The funding amount of \$820,000 was added to 2022.

Project Alternative

The alternative to sewer lining is sewer replacement by open excavation which can be significantly more costly and disruptive. The Village's sewer system is sixty to one-hundred plus years in age and has numerous cracks, tree roots, and mineral deposits. These pipe deficiencies result in groundwater infiltration, sewer collapses, and blockages. Not funding this program will result in infiltration contributing to sewer backups and continued deterioration of the sewer pipes.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	Sewer Capital
Account Number Description	Sewer Lining and Rehab
Account Number	40957090-470400-80703

Sewer Main Repairs	2018	\$ 421,270	Operating
Sewer Fund-Sewer Improvements-Sewer	2019	\$ 327,540	
Collection System	2020	\$ 336,810	
	2021	\$ 346,080	
	2022	\$ 355,350	
X Critical			
- Recommended			
- Contingent on Funding			



Failed Sewer



Failed Sewer



Sewer in Good Condition

Original Purchase Date & Cost

N/A

Funding History	LF	Cost/Qty
2017 \$309,000 Operating		
2016 \$197,305 Operating	254	\$776
2015 \$280,483 Operating	520	\$540
2014 \$275,298 Operating	322	\$855
2013 \$202,785 Operating	408	\$497
2012 \$366,486 Bond		

Project Description & Justification

The sewer repair program includes excavating and replacing portions of the sewer system, including addressing defective manholes and sewer service connections as necessary.

These funds will be used to repair deteriorated sewer mains and service connections as identified by the annual sewer televising program. It has been the Engineering Department's practice to televise, review, and repair all sewers beneath the streets selected for the annual road program to minimize future disruptions to the new pavement. In addition, with the prevalence of rain events the past several years, many additional sewers were televised because of poor system performance.

This project focuses on repairing sewers which show signs of collapse, excessive cracking, voids or gaps between pipes, and faulty service connections which may prove problematic to the functioning

of the sewer main and have to be repaired before the sewers can be eligible for sewer lining. In addition, this annual expenditure will address the deterioration of the sewer system by increasing sewer capacity, reducing sewer backups, improving the pipe's structural integrity, and protecting the investment in the newly paved streets.

While this program is designed by in-house staff, there are soft costs required each year to facilitate the design of the sewer main repairs. These outsourced services include hiring a geotechnical engineering firm to obtain soil borings and pavement cores and provide environmental evaluations if contaminated soils are determined to be present.

In the past, these soft cost services were not separately budgeted but were taken out of the annual project which decreased its overall budget effectiveness by approximately 3%. The annual budget requests for the Sewer Main Repairs reflect a 3% increase to cover the outsourced services.

Project Year	Project Budget	3% Design Soft Costs	Total Budget
2018	\$409,000*	\$12,270	\$421,270
2019	\$318,000	\$9,540	\$327,540
2020	\$327,000	\$9,810	\$336,810
2021	\$336,000	\$10,080	\$346,080
2022	\$345,000	\$10,350	\$355,350

* \$100,000 has been added for the Central Avenue Point Repairs in 2018.

Project Update

In 2018, an additional \$100,000 has been added for point repairs in Central Avenue. Central Avenue will be reconstructed from Green Bay Road to Sheridan Road. The increase in budget will allow for point repairs of deteriorated sewers in this segment prior to the lining of sewers and the Central Avenue Reconstruction Project, which is slated to begin in 2019.

Funding amounts for 2018-2022 have been updated to include a 3% inflation factor and an additional 3% increase for outsourced costs.

Project Alternative

The alternative to the sewer replacement program is to repair sewers on an emergency basis. Reacting to sewers that have already collapsed will result in sewer backups and street sinkholes and cost the Village more than through a proactive main repair program.

Operating Budget Impact

Is this purchase X routine or non-routine?

ROUTINE	
Department Budget	Sewer Capital
Account Number Description	Sewer Main Repairs
Account Number	40807090-470400-80707

Sewer Maintenance	2018	\$261,500	Operating
Sewer Fund-Sewer Improvements-Sewer	2019	\$266,720	
Collection System	2020	\$271,940	
	2021	\$277,160	
	2022	\$282,380	
X	Critical		
-	Recommended		
-	Contingent on Funding		

Original Purchase Date & Cost

N/A

Funding History

2017	\$261,500	Operating
2016	\$224,000	Operating
2015	\$251,000	Operating
2014	\$210,000	Operating
2013	\$325,000	Operating
2012	\$210,000	Operating
2011	\$210,000	Operating

Project Description & Justification

A multi-year effort targeting sewer maintenance, including contractual maintenance of drainage structures, emergency, and road program sewer point repairs.

The following sewer maintenance improvements are recommended in 2018:

- \$50,000 is budgeted for a contractor to perform repairs to sewers that are over 10 feet in depth and cannot be repaired by Village crews and emergency sewer repairs and improvements for the combined, sanitary, and storm sewer systems identified during the budget year.
- \$37,500 to clean approximately 500 drainage structures in order to obtain a five-year cleaning cycle (an additional 180 are cleaned by in-house crews).
- \$174,000 to cover the cost of televising/cleaning approximately 15.2 miles (10%) of main line sewers. The Village's sewer systems contain 51.8 miles of storm sewer mains, 47.5 miles of sanitary sewer mains, and 47.27 miles of combination sewer mains. Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) mandates that a long term (O&M) Program be developed. The O & M program includes maintenance, cleaning and rehabilitation. At this time the MWRDGC does not require specific percentage of sewer cleaning. Based on the age of the Village's sewers the best management practices would be 10-percent per year.

A breakdown of costs/linear feet of cleaning and televising is provided for the past four years of Sewer Televising and Cleaning programs:

<u>Year</u>	<u>Cost</u>	<u>Quantity (LF)</u>	<u>Cost/Quantity (\$/LF)</u>
2017	\$174,000	78,800 LF	\$2.21/LF
2016	\$148,700	65,153 LF	\$2.09/LF
2015	\$142,800	73,708 LF	\$1.94/LF
2014	\$102,150	52,800 LF	\$1.93/LF

In general, there has been an upward trend of costs for cleaning and televising over the past several years and which annually decreases the amount of cleaning and televising that can be performed.

Project Update

Funding amounts for 2019-2022 have been updated to include a 3% inflation factor.

Project Alternative

This project is critical since a reduction in maintenance of the sewer system can ultimately lead to sewer back-ups and increased flooding. Portions of the work correlate to the Village's mandated National Pollutant Discharge Elimination System (NPDES), the Combined Sewer Overflow (CSO) permits, and annual Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) long term maintenance program. The alternative would be a reduction to these contractual services which would place the Village in non-compliance unless additional personnel and equipment were added so the Public Works staff could perform the work in-house.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Department Budget	Public Works / Sewer Fund
Account Number Description	Sewer Maintenance
Account Number	40807090-425300

5-Year Facility Plan for Sewer Lining 2019 \$75,000 Operating

Sewer Fund-Sewer Improvements-Sewer
Collection System

- X Critical
 - Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

Sewer lining is a non-invasive technique to rehabilitate sewers by eliminating infiltration, structural defects, and root intrusion. The list of sewers identified as needing sewer lining grows each year. This annual expenditure is proposed to be a long-term program to address the deterioration of the Village's sewer system. Details of the Village's long term sewer lining program are described in a separate Sewer Lining CIP page.

This project is to prepare an IEPA required sewer lining facility plan for years 2021 through 2025. A consultant would develop the plan and submit it to the IEPA for approval. The IEPA requires a Facility Plan to be developed, open to public comment, and approved prior to the proposed project financial application is submitted, reviewed and approved for the low interest loan. Staff will continue to apply for funding through the IEPA's State Revolving Fund that provides low interest loans to communities for water and wastewater projects, as well as manage the Sewer Lining and Rehabilitation Program through construction.

Project Update

The total anticipated funding amount is \$75,000, but is anticipated to be a 2-year process for the plan development and approval through the IEPA.

Project Alternative

The alternative to sewer lining is sewer replacement by open excavation which can be significantly more costly and disruptive. The Village's sewer system is sixty to one-hundred plus years in age and has numerous cracks, tree roots, and mineral deposits. These pipe deficiencies result in groundwater infiltration, sewer collapses, and blockages. Not funding this program will result in infiltration contributing to sewer backups and continued deterioration of the sewer pipes.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

ROUTINE	
Department Budget	Sewer Capital
Account Number Description	Sewer Lining and Rehab
Account Number	40957090-470400-80703

Smoke Testing / Dyed Water Flooding

Sewer Fund-Sewer Improvements-Sewer Collection System

2018	\$130,000	Operating
2019	\$130,000	
2020	\$130,000	
2021	\$130,000	

- Critical
X Recommended
Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

2017	\$ 130,000
2016	\$ 130,000
2014	\$ 284,000
2013	\$ 111,156

Project Description & Justification

This project will ensure the Village remains in compliance with the MWRD's Inflow and Infiltration Control Program requirements.

In 2012, the Village of Wilmette developed a hydraulic model of the Village's separate sanitary sewer system generally located west of Ridge Road. This system includes approximately 246,000 linear feet (lf) of pipe divided between two outlets to the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC); the Harms Basin (88,000 lf) and the Princeton Basin (158,000 lf). In 2013, flow monitoring was conducted to measure the flows at the outlets of the system.

Based on wet-weather flow analysis, it is evident that all four meter basins experience excessive inflow and infiltration (I/I) during storm events. The magnitude and fast response of peak flows in all of the basins indicate that the I/I sources in the system include sources of direct runoff, which may include storm sewer-to-sanitary sewer cross connections, downspouts, area drains, foundation drains, and other private sector sources.

Smoke Testing

In 2013, the Village completed approximately 23,000 feet of smoke testing in the Kenilworth Gardens area. Smoke testing is a simple and cost-effective way to identify sources of I/I entering the system. In general, defects found during smoke testing can generally be divided into four categories:

- Public Sector Defects – These are mainline and manhole defects identified during the smoke testing. These defects will be addressed in the mainline and manhole rehabilitation programs.
- Sanitary-to-Storm Cross Connections – These are locations where smoke was identified in the storm sewer system, in storm manholes, inlets, or catch basins. This indicates that there

is either a direct or indirect connection where storm water is leaving the storm sewer system and entering the sanitary system.

- Cross-connections in which storm water is directly connected to the sanitary sewer.
- “Easy-Fix” Private Sector Sources – These defects are located on the private sector and are very easy and cost-effective to repair or require repair of by the homeowner. These defects include connected downspouts, leaky disconnected downspout leaders, broken or missing cleanout caps, and uncovered, connected window wells. In Kenilworth Gardens, 79 of these locations were identified. The private sector disconnection program completed in 2014 addressed a number of these defects.

This project is recommended in the Separate Sanitary Sewer System Modeling study conducted by RJN in 2012. A continuation of the smoke testing program is also recommended by the Municipal Services Committee and the Metropolitan Water Reclamation District of Greater Chicago.

Project Update

\$130,000 has been added to 2018-2021 to continue smoke testing within the Princeton and Harms drainage basins. At \$130,000 per year funding level, the entire west of Ridge sanitary sewer system will be tested by 2021. This program is not anticipated to continue indefinitely and will come to an eventual end.

Project Alternative

There is no alternative to this project.

Operating Budget Impact

Is this purchase routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	TBD
Personnel Costs	TBD
Training Costs	TBD

Sewer Lateral Rehabilitation	2019	\$ 549,300	Bond
Pilot Project	2020	\$ 549,300	

Sewer Fund-Sewer Improvements-Sewer
Collection System

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

The Sewer Lateral rehabilitation project is a pilot project designed to eliminate infiltration from the connection of sewer laterals to the mainline sewers and the portion of the lateral within the right-of-way. This project would be a major change in Village policy as the Village has not historically performed repairs or maintenance on sewer laterals and as laterals are legally the responsibility of the property owner to maintain. Sewer lateral lining is a trenchless, non-invasive technique to rehabilitate sewers by eliminating infiltration, structural defects, and root intrusion. In this process, the liner is inserted into the lateral and is cured-in-place. Prior to lining, the lateral is cleaned and televised.

In 2016, the Village performed dyed water flooding in the Kenilworth Gardens area to determine locations where stormwater is entering the sanitary system through sanitary laterals. A sewer lateral is the pipe that connects ones home to the main public sewer. The test revealed that over 2 million gallons of non-sanitary flows per day can infiltrate the sanitary sewer system. Extraneous groundwater and rainwater in the sanitary system during heavy rain events is a direct cause of sanitary sewer backups.

This project will keep the Village in compliance with MWRD's Inflow and Infiltration Control Program (IICP) and in particular the private sector program (PSP) requirements. The area proposed for the pilot project is in Kenilworth Gardens and bordered by Beechwood on the north, Hunter on the west, Elmwood on the south, and Ridge Road on the east. This area was selected due to the high number of sewer backups and significant overland flooding concerns.

In addition to the sewer lateral pipe, this project will also address "break-in" service connections. Break-in service connections occur when the services are not properly connected to the main line pipe allowing infiltration. The T-Lateral Liner is a one-piece mainline connection and lateral lining that extends up into the lateral pipe. The mainline portion of the liner physically attaches to form a one-piece liner that will eliminate any I/I at the connections.

Adding sewer lateral locations from the televising to the Village GIS will also enable the Village to identify potential dead laterals that can be sealed off. These dead laterals account for sources of infiltration and inflow that can be avoided if omitted from the sewer system.

The project would also allow the residents to extend the sewer lateral liner from the cleanout to their homes. This option would be at the homeowner's expense but would be very cost effective for the resident if the work was done in conjunction with this program.

The project cost for 2019 and 2020 includes a 15% contingency for engineering and construction services.

Project Update

This project has been deferred for several years. The costs in 2019 and 2020 have been updated to reflect the 2016 Princeton Basin SSES Final Report by RJN. The project is proposed to be scheduled over two years.

Project Alternative

The project alternative is to allow residents to improve their laterals at their cost and on their own schedule. Sewer laterals continue to be a significant source of infiltration into the sewer system.

Operating Budget Impact

Is this purchase ___routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Overhead Sewer/Lateral Program

2019

\$30,000

Operating

Sewer Fund-Sewer Improvements-Sewer
Collection System

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This is a resident assistance program for residents who install overhead sewers to protect their homes from sewer backups. The proposal is for the Village to contribute 50%, not to exceed \$5,000 per property. Grants would be issued on a “first-come, first-served” basis. The budget of \$30,000 will fund six overhead sewers.

There are numerous sewer backups in the Village during intense rain events. For those homes that chronically experience sewer backups, building an overhead sewer is the best alternative to mitigating the backup problem.

Recognizing that the Village cannot feasibly build a system that could guarantee the elimination of sewer backups, the overhead sewer program is a cost effective way of allowing certain homes to protect their property. An overhead sewer protects a home from a sewer backup by providing an elevation difference created by a sump and pump in the building’s lowest level.

Project Update

This project was deferred to 2019 as the Village awaits regulatory direction from the IEPA and MWRD.

Project Alternative

The alternative is to not fund a resident assistance program but encourage residents to complete the improvements on their own.

Operating Budget Impact

Is this purchase routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Relief Sewer Improvement Program	TBD	\$1,156,400 ¹	Bond/IEPA
Loan			
Sewer Fund-Sewer Improvements-Sewer	TBD	\$645,700	
Collection System	TBD	\$1,729,500 ²	
	TBD	\$848,900	
- Critical			
X Recommended			
- Contingent on Funding			

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

This project is a continuation of the combined sewer relief program which began in the middle 1990's and ceased in the late 1990's after construction of three of five phases. After the one-hundred year rain events in 2001 and 2002 and more recently in 2007 through 2013, the remaining phases are proposed to be completed in conjunction with the road and brick maintenance programs. It is anticipated that the relief sewer project will be completed in 2023.

Project Update

This project has been deferred.

Project Alternative

There is no alternative to building relief sewers. Deferring the construction of relief sewers will have no impact on the current performance of the combined sewer system. Many of the streets programmed to receive relief sewers, however, are badly deteriorated. Street rehabilitation has been deferred because of the eventual installation of relief sewers. The result is that the pavement continues to deteriorate.

Project Background

These funds will be used primarily to install new relief sewers under roads that are scheduled to either be resurfaced or rehabilitated under the annual road program.

A tentative schedule for years 2019 through 2023 is as follows:

2019 ³	Laurel Avenue (8 th Street to 5 th Street, 24-inch) 9th Street (Gregory Avenue to Oakwood Avenue, 24-inches)
2020 ⁴	Chestnut Avenue (Sheridan Road to 8 th Street, 24-inch)

¹ This includes \$475,100 for brick street construction

² This includes \$1,080,400 for brick street construction

³ 9th Street is a brick street and will require reconstruction

8th Street (Chestnut to Ashland, 24-inch)

Ashland Avenue (8th to 9th, 24-inch)

Greenwood Avenue (8th to 9th, 24-inch)

2021 6th Street (Isabella Street to Maple Avenue, 24-inch)
North Shore Channel (Linden Avenue to Maple Avenue, 24-inch)
Laurel Avenue (Sheridan Road to the North Shore Channel, 24-inch)

2022⁵ 11th Street (Lake to Forest, 24-inch)
Elmwood Avenue (Michigan to Sheridan Road, 24-inches)
Forest Avenue (Michigan Avenue to 6th Street, 24-inches)

2023⁶ Ashland Avenue (12th Street to 13th Street, 24-inches)
Greenwood Avenue (11th Street to 13th Street, 24-inches)
Elmwood Avenue (12th Street to 13th Street, 24-inches)

Operating Budget Impact

Is this purchase routine or X non-routine?

NON-ROUTINE	
Maintenance Costs	Public Works
Personnel Costs	Sewer Fund, absorbed in account number 40807090-410100 regular salaries
Training Costs	No additional training

⁴ Streets in program are brick and will require reconstruction

⁵ Streets in program are brick and will require reconstruction

⁶ Streets in program are brick and will require reconstruction

Storm Sewer Relief Project	2018	\$2.5 million	Bond
	2019	\$2.0 million	
	2020	\$30 million	
	2021	\$30 million	
	2022	\$22 million	

Sewer Fund-Sewer Improvements-Sewer
Collection System

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

2017 \$114,933 (Value Engineering Study)
2015 \$0
2014 \$327,000 (Storm study)

Project Description & Justification

The existing separate storm sewer system, located west of Ridge Road, is currently designed to convey a 2 to 3-year rain event. The standard design for new subdivisions includes a storm sewer system sized to convey a ten-year event and detention / retention basins large enough to store a 100-year rain event.

The goal of the storm study was to determine projects that would keep the hydraulic grade line (surcharging level) for a ten-year rain event below street level. The Village currently experiences wide-spread shallow flooding during a ten-year rain event. The selected alternative includes building a relief storm sewer system to collect and convey excess storm flows to the stormwater pump station. This alternative includes installing 42,000 feet of new trunk and lateral sewers. The cost of this alternative is \$82 million and construction time is three years.

2018 and 2019 are dedicated toward design and include the following tasks:

2018

Task 1 – Data Collection

Task 2 – Full Topographic Survey

Task 3 – Geotechnical Investigations

Task 4 – Utility Coordination

Task 5 – Subsurface Utility Engineering

Task 6 – 30% Design Drawings and Cost Estimate

Task 7 – Permitting Coordination Meetings

Task 8 – Project Management and Meetings thru Preliminary Engineering

Task 9 – Public Outreach

Task 10 – Meetings with Funding Sources and Stakeholders

2019:

Task 1 – Temporary and Permanent Easement Preparation

Task 2 – 90% Design and Cost Estimate

Task 3 – Final Design (Plans, Specs and Estimate)

Task 4 – Permit Coordination, Meetings and Submittals

Task 5 – Final Utility Coordination

Task 6 – Project Management thru Final Engineering

Task 7 – Public Outreach

Task 8 – Bid Assistance

Project Update

This project is currently under consideration by the Village Board.

Project Alternative

The alternative to this project is to look for lower cost projects to mitigate flooding.

Operating Budget Impact

Is this purchase ___*routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	\$20,000 annual increase in sewer maintenance including televising, cleaning, rodding and manhole repairs.
Personnel Costs	None
Training Costs	None as the Public Works employees already have the knowledge to maintain the storm sewer system.

Stormwater Utility Program

2019

\$150,000 Operating

Sewer Fund-Sewer Improvements-Sewer
Collection System

- Critical
 - Recommended
 - X Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

Currently the Village assesses a sewer fee based on water consumption. While this fee may be a fair representation of a parcel's impact on the sanitary sewer system, it fails to account for the impact of a parcel's impervious surface on the stormwater system. This item will hire a professional firm to establish the framework for a stormwater utility program. Typically, the work is divided into two phases, a feasibility phase and an implementation phase. Prior to conducting this study, the Village must fund \$50,000 for new GIS imagery in order to be able to measure impervious surface on parcels.

The other factors that might impact the actual cost would be the type of public education / outreach / participation desired, the basis for billing (occupant vs owner), and the rollout of a credit and incentive program.

Project Update

This is a new project for 2019.

Project Alternative

Operating Budget Impact

Is this purchase *routine* ____ or X *non-routine*?

ROUTINE	
Department Budget	Sewer Capital
Account Number Description	Sewer Lining and Rehab
Account Number	40957090-470400-80703

Water Improvements – Ten Year Capital Improvement Program

This section of the Capital Improvement Plan identifies funding for the water improvements, which are scheduled to continue through FY 2027.

Water improvements are funded through the Village's water operating fund and general obligation bond issues.

The following improvements are proposed for 2018:

Improvement	Cost of Improvement	Funding Source	Nature of Project
Electrical Improvements Program Phase I	5,000,000	Operating	Tier 5
Heating System Upgrade	150,000	Operating	Tier 4
Treatment Process Improvements Program Phase I	60,000	Operating	Tier 4
Instrumentation Replacement	50,000	Operating	Tier 4
Water Intakes Inspection	18,000	Operating	Tier 2
Glenview Meter Upgrade	35,000	Operating	Tier 5
Water Meter Replacement Program	88,000	Operating	Tier 5
Distribution System Valve Improvements	67,594	Operating	Critical
Unidirectional Water Main Flushing	50,000	Operating	Recommended
Total:	\$5,518,594		

The following page summarizes the risk based assessment methodology guide for Water Plant related improvements.

**Ten Year Capital Improvement Program
Water Summary**

Facility Improvements	Page	Risk Rating	2018	2019	2020	2021-2022	Five-Year Total	2023-2027	Ten-Year Total	Funding
WATER PLANT FACILITY										
Electrical Improvements Program Phase I	2	Tier 5	5,000,000	3,400,000	-	-	8,400,000	-	8,400,000	Bond/Loan
Heating System Upgrade	6	Tier 4	150,000	-	-	-	150,000	-	150,000	Operating
Treatment Process Improvements Program Phase I	8	Tier 4	60,000	190,000	430,000	498,000	1,178,000	-	1,178,000	Operating
Instrumentation Replacement	13	Tier 4	50,000	50,000	-	-	100,000	-	100,000	Operating
Electrical Improvements Program Phase II	16	Tier 4	-	250,000	120,000	-	370,000	-	370,000	Bond
Rebuild Wash-water Pumps	18	Tier 4	-	60,000	50,000	-	110,000	-	110,000	Operating
Roof Replacement	20	Tier 4	-	-	220,000	-	220,000	-	220,000	Operating
Electrical Improvements Program Phase III	23	Tier 4	-	-	-	500,000	500,000	-	500,000	Bond
Treatment Process Improvements Program Phase II	25	Tier 4	-	-	-	500,000	500,000	2,000,000	2,500,000	Bond
Water Intakes Improvements	27	Tier 4	-	-	-	-	-	14,700,000	14,700,000	Bond
Replace Low Lift Pump 23	29	Tier 3	-	-	-	-	-	360,000	360,000	Operating
Treatment Process Improvements Program Phase III	31	Tier 3	-	-	-	-	-	1,360,000	1,360,000	Operating
1971 Low Lift Station Influent Valve Replacement	35	Tier 2	-	-	-	-	-	250,000	250,000	Operating
WATER PLANT SERVICES										
Water Intakes Inspection	37	Tier 2	18,000	-	-	20,000	38,000	50,000	88,000	Operating
Rebuild High Lift Pumps	39	Tier 2	-	40,000	-	-	40,000	-	40,000	Operating
Tank Maintenance Services	40	Tier 2	-	40,000	-	-	40,000	60,000	100,000	Operating
WATER DISTRIBUTION IMPROVEMENTS										
Glenview Meter Upgrade	43	Tier 5	35,000	-	-	-	35,000	-	35,000	Operating
Water Meter Replacement Program	45	Tier 4	88,000	88,000	88,000	138,000	402,000	200,000	602,000	Operating
Automatic Meter Reading Program	47	Tier 4	-	-	-	2,500,000	2,500,000	2,500,000	5,000,000	Bond
Replace Standpipe Isolation Valve	49	Tier 3	-	-	-	60,000	60,000	-	60,000	Operating
ENGINEERING & PUBLIC WORKS IMPROVEMENTS										
Distribution System Valve Improvements	51	Critical	67,594	69,562	71,531	148,969	357,656	-	357,656	Operating
Unidirectional Water Main Flushing	53	Rec.	50,000	45,000	45,000	-	140,000	90,000	230,000	Operating
Water Main Program	55	Rec.	-	1,317,600	1,300,000	2,717,000	5,334,600	5,873,000	11,207,600	Operating
Design & Construction Services	57	Rec.	-	104,000	104,000	390,000	598,000	975,000	1,573,000	Operating
Total			5,518,594	5,654,162	2,428,531	7,471,969	21,073,256	28,418,000	49,491,256	
Proposed Financing										
			2017	2018	2019	2020-2021	Five-Year Total	2022-2026	Ten-Year Total	
Water Fund- Operations			538,594	2,004,162	2,308,531	3,971,969	8,803,256	9,218,000	18,021,256	
Water Fund- Debt Financing			4,980,000	3,650,000	120,000	3,500,000	12,270,000	19,200,000	31,470,000	
Total			5,518,594	5,654,162	2,428,531	7,471,969	21,073,256	28,418,000	49,491,256	
Project Rating										
			2018	2019	2020	2021-2022	Five-Year Total	2023-2027	Ten-Year Total	
Tier 5			5,035,000	3,400,000	-	-	8,435,000	-	8,435,000	
Tier 4			348,000	638,000	908,000	4,136,000	6,030,000	19,400,000	25,430,000	
Tier 3			-	-	-	60,000	60,000	1,720,000	1,780,000	
Tier 2			18,000	80,000	-	20,000	118,000	360,000	478,000	
Critical			67,594	69,562	71,531	148,969	357,656	-	357,656	
Recommended			50,000	1,466,600	1,449,000	3,107,000	6,072,600	6,938,000	13,010,600	
Contingent			-	-	-	-	-	-	-	
Total			5,518,594	5,654,162	2,428,531	7,471,969	21,073,256	28,418,000	49,491,256	

Table 1 - Condition Rating Evaluation Methodology

Condition Rating	Description	Probability of Failure	Anticipated Useful Life	Historical Maintenance Needs
1	New, perfect condition.	Unlikely	>90%	None
2	Good condition, no improvements recommended to maintain function.	Seldom	75%	Minor
3	Fair condition, improvements recommended to improve performance or efficiency.	Occasional	50%	Some
4	Poor condition, will not impair operations or safety significantly. Improvements recommended to prevent future deterioration and maintain reliability.	Likely	25%	Many
5	Imminent failure, would directly and significantly impact operations at the water plant, including capacity, water quality or safety. Rehabilitation or replacement required.	Certain	<10%	Major

Table 2 - Criticality Rating Evaluation Methodology

Criticality Rating	Plant Capacity Impacted	Water Quality/Regulatory	Safety Hazard	Replacement Lead Time (Years)	Severity Level
1	None	None	None	None	None
2	25%	Low	Low	0.5	Low
3	50%	Moderate	Moderate	1	Moderate
4	75%	High	High	3	Critical
5	Plant shutdown	Violation	Loss of Life	>5	Catastrophic

Table 3 Risk Based Assessment – Capital Improvement Projects (CIP) Prioritization

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

**Electrical Improvements Program
Phase I**

Water Fund- Water Plant Facility

2018

\$5,000,000

IEPA Loan

2019

\$3,400,000

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

MCC-B & MCC-C: 1956 – part of 1956 expansion
Main Switchgear: 1986 – unknown cost
500 kW generator: 1971 – supports 9 MGD
1100 kW generator: 1998 – supports 20 MGD

Funding History

Detailed engineering design and bidding services 2017 \$574,282

Project Description & Justification

2018 Construction of the generators building and addition to the water plant, delivery of the generators, switchgear and Motor Control Centers (MCCs) with some installation of equipment at a projected cost of \$5,000,000
2019 Completion of the construction and installation of the electrical improvements at a projected cost of \$3,400,000

The phase I of the electrical improvements program consists of the following projects:

Replacement of the main switchgear and Motor Control Centers (MCCs):

This project consists of replacing the main switchgear and MCC-A1, MCC-A2 and MCC-A3 (located in the main electrical room) with the addition of automatic transfer controls. The age of the existing equipment is approximately 30 years and is approaching the end of their effective life based on the findings of the Water Plant condition assessment study performed in 2015. If this equipment were to fail, it would cause complete water plant shut-down. Additionally, the lead time on design, procurement and installation is relatively long for such critical equipment as it could take up to 2-3 years to complete this project. Part of the cost of this project is the challenge of finding locations for the new equipment while maintaining plant operation.



Summary of the risk assessment of this project is below:

Risk Score	Tier 5	Justification
Condition Rating	4	Less than 25% of useful life left
Criticality Rating	5	Will cause complete plant shutdown, long lead time

Replacement of the 1956 Motor Control Centers (MCCs):

This project consists of replacing MCC-B and MCC-C located in the 1956 building. These MCCs provide power to significant amount of equipment at the plant such wash water pumps, chemical metering pumps, recycling pumps...etc. The MCCs have exceeded their useful life and have been determined to be in poor condition due to the presence of corrosion. If either of these MCCs were to fail, it will impact enough equipment to significantly disrupt the operation. The location of these MCCs must also be evaluated due to safety concerns and climate conditions.



Summary of the risk assessment of this project is below:

Risk Score	Tier 5	Justification
Condition Rating	5	Exceeded it useful life, signs of corrosion
Criticality Rating	5	Catastrophic severity level impact including potential violation of regulations

Replacement of Two Backup Engine Generators:

This project consists of replacing the two backup generators at the water plant. The water plant has two backup generators, 500 kW diesel, installed in 1971, and 1100 kW natural gas, installed in 1998. The 1100 kW generator could provide power to sustain a production rate of approximately 19 MGD of water and the 500 kW generator up to 9 MGD of water. Due to its size and the amount of water that can be produced, the 500 kW generator serves as a backup to the primary 1100 kW generator, providing power during emergency power outages.



The 500 kW generator has exceeded its life expectancy and due to age has begun to exhibit signs of wear requiring more frequent and costly repairs. Additionally, due to age, parts typically have to be custom made leading to longer periods of the generator being out of service and a higher cost of maintenance.

The 1100 kW generator is of a unique design and model that parts and qualified service technicians are becoming limited. This generator has had many breakdowns and repairs in recent time. In addition, the manufacturer of the generator has informed the Village that certain parts will need to be replaced in the coming years alongside a software upgrade. This replacement could have a substantial cost and the design of this replacement is still being investigated by the manufacturer and is not certain to be workable.

Summary of the risk assessment of this project is below:

Risk Score	Tier 5	Justification
Condition Rating	4	The 500 kW generate has exceeded useful life. The 1100 kW has Less than 25% of useful life left. Many historical maintenance needs
Criticality Rating	4	Will cause complete plant shutdown if power is lost. Due to the redundancy and that the 500 kW generator would only provide 9 MGD rate, a criticality rating of 4 is justified

Due to the limited space at the water plant, a generator building is proposed to house the two new generators and an addition to the water plant to stage the phasing of the electrical improvements. The addition will house the new switchgear, multiple MCCs and have few administrative spaces. This addition will minimize and shorten the impact on the water plant operation when taking equipment off the old switchgear and MCCs to the new ones.

The total estimated cost of this project is detailed below:

Cost Type	Estimated Amount	Comments
Construction Contract	\$7,800,000	Includes 10% contingency and 3% escalation to 2018
Engineering Construction Services	\$600,000	Preliminary Estimate
Total	\$8,400,000	

The total estimated cost will be updated late August upon the completion of the 90% design. This cost estimate includes constructing a full generators building. An alternate to reduce cost will be included in the bid document by minimizing the building to a privacy fence along Lake Avenue.

Project Update

In 2017, the detailed engineering design of these improvements is being performed. Bidding the project is anticipated in the fall of 2017. Additionally, an application has been submitted for an IEPA loan under the State Revolving Fund (SRF) loan program and a loan number for the project has been assigned. Once the project has been awarded, a signed agreement with the IEPA for the loan will be executed.

Project Alternative

The projects above could be a done separately. However, it is proposed to combine them for the following reasons:

- Each of these electrical projects is very disruptive on its own to the operation of the water plant. Performing this work once, will minimize the amount of disruption in the future and the risks associated with it.
- There is an economy of scale related to combining these electrical projects. In addition to the savings due to the larger scale of the project, there will be savings associated with equipment replacement. For example, if the switchgear replacement project was done first, new breakers for the old generators must be installed to work with this new switchgear. Then, these new breakers will be replaced again when the generators are replaced.

Combining these projects will eliminate to purchase and replacement these equipment twice in this example.

- Completing the electrical projects above prior to 2020 when North Main Utility will come on board is desirable to minimize the impact of this higher demand on operation. The lead time on these projects is long; could be up to 3 years of design, procurement and construction.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NONROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Heating System Upgrade

Water Fund-Water Plant Facility

2018 \$150,000 Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

Steam Boiler	1995 - \$15,000
West Office HVAC	2000 - \$22,500
East Office HVAC	2000 - \$19,000

Funding History

Replace steam-system boilers with gas-fired	2008	\$10,000	Operating
New heating & piping (1933 building)	2010	\$10,000	Operating
New heating & piping (1957 & 1971 buildings)	2011	\$30,000	Operating

Project Description & Justification

2018 Replace the steam boiler located in the 1933 building and the HVAC unit at the east side of the plant building at a projected cost of \$150,000

Steam Boiler Replacement Project

The existing steam heat system, originally installed in 1956, provides heat for the 1933 and 1956 filter buildings and shop areas at the Water Plant during the winter months. The existing steam boilers, the latest addition to this system, were installed in 1995. The steam system has required extensive maintenance over the past 5 years. Failing radiator units, leaks in steam piping, failures in the condensate return system and clogged steam traps are among the problems encountered. The staff estimates that there are over one hundred (100) steam system traps that are malfunctioning or broken. The average cost for replacing a steam trap is \$250. Failure in this system could lead to having certain areas in the plant to be very cold and cause pipes to break due to freezing or the malfunction of equipment.



Portions of the water plant were converted to a separate hot water boiler system in 2003 by the Water Plant staff. The hot water system is more energy efficient and will lower operational and

maintenance costs. Therefore, this replacement project will install a second new hot water boiler in place of the two steam boilers and connect the new boiler with the existing hot water system so either boiler can work alone and serve as a backup for the other, and to decommission the steam system. The estimated cost for this project is \$130,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	5	Reliable life has been exceeded and many maintenance needs
Criticality Rating	3	Has a moderate safety hazard rating and potential for moderate impact if certain areas of the plant are not heated

Replacement of the East Offices HVAC Unit

There are two HVAC units that provide climate control to the laboratory and an office on the east side of the building and the control room, offices on the west side of the building. Both units were installed in 2000 and have reached the end of their useful life. The maintenance needs for both units have increased over the past few years indicating the need for their replacement. Climate control is very important for the equipment located in the laboratory. For example, failure in the HVAC units could impact the ability to conduct bacteriological testing that requires the ability to have steady temperature in the incubators. The estimated cost for this project is \$20,000. The west offices unit will be replaced as part of the electrical improvements project.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	5	Reliable life has been exceeded and many maintenance needs
Criticality Rating	3	Has a moderate severity impact on equipment if certain areas of the plant don't have climate control

Project Update

The FY 2019 project was eliminated as the west building unit will be replaced during the electrical improvements and the east building unit was combined with FY 2018 project.

Project Alternative

An alternative is to postpone the replacement. However, failure in these units during could jeopardize various aspects of the operation of the Water Plant as discussed above.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Treatment Process Improvements Program – Phase I	2018	\$60,000	Operating
	2019	\$190,000	
	2020	\$430,000	
Water Fund–Water Plant Facility	2021	\$498,000	

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

1933 flow meter	1982 - \$8,500
1971 flow meter	1982 - \$29,800
In-line mixers	2002 – part of 2002 expansion
Coagulant storage tank	1956 – part of 1956 expansion
Fluoride storage tanks	1956 – part of 1956 expansion
Hypochlorite storage tanks	2002 – part of 2002 expansion
Air Compressors	1994 - \$10,000
Vacuum System	1992 - \$6,000

Funding History

1971 filter improvements Design	2005	\$76,144	Operating
Installed air scour system, replace under-drains and filter media for 1971 filters	2007	\$1,143,400	Bond
Installed new wash-water troughs for 1933 filters	2009	\$119,000	Bond

Project Description & Justification

2018	Replace one rapid mix equipment out of three currently installed at a projected cost of \$60,000.
2019	Replace the low lift flow meters and the remaining rapid mixing equipment at a projected cost of \$190,000
2020	Replace the water treatment chemicals bulk storage tanks at a projected cost of \$430,000
2021	Replace the compressed air and vacuum systems and install new air scour blower at a projected cost of \$498,000

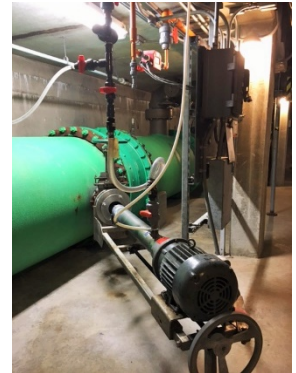
The phase I of the treatment process improvements program consists of the following projects spread out over a 4-year period:

Projects Proposed in FY 2018 CIP

Rapid Mix Equipment Replacement

The chemical treatment process of drinking water requires a rapid (high velocity) mixing of the coagulant. At Wilmette Water Plant, this mixing is achieved by in-line mixers installed in 2002. The manufacturer of these mixers no longer makes them or supports them. Additionally, they have had many historical maintenance needs. Failure in these equipment will cause water quality issues and potentially a violation of the Safe Drinking Water Act.

In FY 2018, it is proposed to replace one of the three units currently installed at an anticipated cost of \$60,000.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	The mixers have 25% of useful life left but had many historical maintenance needs
Criticality Rating	3	Failure in the rapid mix could significantly impact the water quality and have a moderate risk on regulatory compliance

Projects Proposed in FY 2019 CIP

Rapid Mix Equipment Replacement

In FY 2019, replace the remaining two units described above at an estimated cost of \$130,000.

Low Lift Flow Meters Replacement Project

The Water Plant has two low lift stations, the 1933 and 1971 stations. The amount of water pumped out of these stations and into the Plant for treatment is measured using a flow meter at each station. The 1933 station has a 30 inch meter and the 1971 station has a 36 inch meter located in a vault. These meters produce the official flow readings that are used in reports to the regulatory agencies. In addition, the readings from these meters control the chemical dosing of the treatment process of water.



Both meters were replaced in 1982. The meters have shown signs of wear, had failed, and required repairs in recent years. It is becoming more difficult to repair due to the age of the meters and scarcity of parts. The estimated cost for the replacement is \$60,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	Poor condition. The meters have recently been requiring excessive maintenance
Criticality Rating	3	Manual operation maybe required to meet water demands, potentially impacting treated water quality

Projects Proposed in FY 2020

Replacement of the Water Treatment Chemicals Bulk Storage Tanks

The Water Plant has five different chemicals used for water treatment. In this project, three chemicals bulk storage tanks are proposed to be replaced:

Coagulant Chemical Storage

DelPAC 2020 is the coagulant treatment chemical used at the Water Plant to remove naturally occurring turbidity in the raw lake water. DelPAC 2020 is purchased in 4,000 gallon quantities and stored in two rubber-lined steel 8,000 gallon bulk storage tanks. The present bulk storage tanks were constructed in 1956. The original rubber lining is deteriorating and in need of replacement. The tanks also need a steel top installed with a vent line to the outside to meet current safety standards.



Fluoride Chemical Storage

Fluoride is fed at the Water Plant to prevent dental cavities in children. Fluoride is purchased in 3,000 gallon quantities and stored in one rubber-lined steel 2,000 gallon bulk storage tank and three 700 gallon fiberglass tanks. The 2,000 gallon steel tank was constructed in 1956. The original rubber lining is deteriorating and because the lining on the tank is not accessible, the tank will need to be replaced.

Hypochlorite Chemical Storage

Sodium Hypochlorite (Hypo) is fed at the Water Plant to disinfect the finished water. Hypo is purchased in 4,000 gallon quantities and stored in four fiberglass reinforced 3,800 gallon bulk storage tanks. These tanks were installed in 2003, and they have an expected life of 10-15 years while storing this chemical.

The projected cost to replace all the chemical storage tanks mentioned above is \$430,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	3	The tanks are in fair condition
Criticality Rating	4	Failure of the chemical bulk tanks would be a high safety hazard. Potential regulatory impact with storage requirements

Projects Proposed in FY 2021

Replacement of the Compressed air System

The compressed air provide the air needed for the pneumatic valves and many level transmitters. Failure in this system will impact the operation of the plant and the ability to determine the levels of some tanks. The compressed system is 18 years old and is approaching the end of its useful life. It has had increased maintenance needs and repairs. The projected cost of replacement is \$57,000.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	5	The air compressor system has reached its useful life and has had many maintenance needs
Criticality Rating	3	Failure in the air system will have a moderate severity impact as it would affect the operation of pneumatic valves and tanks levels

Replacement of the Vacuum System

The vacuum system is used for pump priming valves at the Water Plant. Failure in this system will cause the pumps (such as backwash pumps and the 1933 low lift pumps) requiring the priming valves to be inoperable. The vacuum compressors proposed to be replaced are 23 years old and have exceeded their reliable life. The projected cost of replacement is \$21,000.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	The vacuum system has reached its useful life and has had many maintenance needs
Criticality Rating	3	Failure in the system will make the associated pumps inoperable and will have a moderate severity impact on the operation

Installation of New Air Scour Blower

The air scour blower is used to provide air during the air scouring step of a filter backwash sequence. The Water Plant currently has one air scour blower installed in 1999. The expected life of a blower is generally 30 years. The current IEPA regulation requires a minimum of two blowers for air scour system. The second blower will provide redundancy. Failure in this equipment will negatively impact the effectiveness of the backwashing process of the filters which will impact the water quality produced by these filters. The estimated cost of the installation of a new air blower is \$420,000.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	3	The existing air scour is in fair condition and has 50% of expected reliable lifespan
Criticality Rating	3	There is no redundancy to the existing air scour blower. Failure will have a moderate severity impact on the water quality of the filters and the regulatory compliance

Project Update

The cost of the program over the 4-year period was reduced by \$130,000 due to updated cost estimates for the mow lift meters and rapid mix equipment.

Project Alternative

Projects can be implemented separately to reduce total cost for a particular year. This could reduce savings due to economy of scale in some years such as the chemicals storage tanks replacement project. Additionally, delaying projects will increase their risk score and potentially impact the operation as stated above.

Operating Budget Impact

Is this purchase *routine* ____ or X *non-routine*?






NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Instrumentation Replacement

2018 \$50,000 Operating
2019 \$50,000

Water Fund–Water Plant Facility

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

N/A

Funding History

Turbidimeters and chlorine analyzers 2015 \$40,000 Operating

Project Description & Justification

2018 Replace 16 differential pressure transmitters throughout the water plant at an estimated cost of \$50,000
2019 Replace 14 differential pressure transmitters and the level transmitters at an estimated cost of \$50,000.

Differential Pressure Transmitters

The Water Plant has 40 differential pressure (DP) transmitters throughout the Water Plant and remote sites that detect and relay information to the Plant Operator through the SCADA system. The DP transmitters provide the Water Plant Operator with:

- The amount of flow that is going through each filter and basin.
- The level of water in each of 1933, 1956 and 1971 clearwell, wetwells and standpipe.
- The head loss transmitters help in determining when the filters need to be washed.



Additionally, many of the SCADA system automatic controls rely heavily on the readings coming from the differential pressure transmitters to perform their functions. Below is a table summarizing the number of transmitters and corresponding age.

Location	Quantity	Average Age (Years)	Proposed FY Replacement
Filtration	9	30	2018
Levels	7	25	2018
Filtration	8	25	2019

Rain Gauges	2	30	2019
Levels	4	23	2019

Transmitters can have a useful life between 20 to 30 years. Many of these transmitters have either reached or exceeded the useful life. Failure to these transmitters will have a moderate severity (such as filtration malfunction, disruption in pumping and chemical feeding...etc.) impact to the pumping and treatment operations.

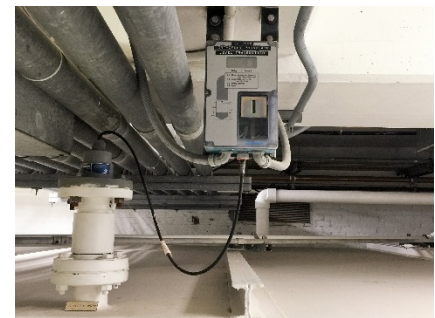
In FY 2018, it is proposed to replace 16 differential pressure transmitters throughout the Water Plant. The estimated cost is \$50,000 for the new DPs. The replacement and installation will be performed by the Water Plant staff.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	Many of the transmitters have reached or have <25% of anticipated useful life but generally in fair condition
Criticality Rating	3	Failure will have a moderate impact on the treatment and pumping operations

Ultrasonic Level Transmitters

The Water Plant has 10 ultrasonic level transmitters and two rain level transmitters that are connected to the SCADA system. The ultrasonic level transmitters are capable of reading the level of our chemical bulk tanks without being in direct contact with the corrosive solutions. These readings are used to determine the actual amount of chemicals fed as well as determining the inventory levels. The level transmitters were last replaced in 1994 and the expected lifetime of these transmitters is between 15-20 years.



For FY 2019, it is proposed to replace the 10 ultrasonic level transmitters and additional 14 differential pressure transmitters at a projected cost of \$50,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	Have reached their useful life but generally in good condition
Criticality Rating	3	Would have moderate severity impact on the operation

Project Update

The projects were moved from FY 2019 & 2020 to FY 2018 & 2019 due to reprioritization of projects.

Project Alternative

An alternative is to replace transmitters on an emergency or as needed basis. However, an increased failure rate in these transmitters could jeopardize the operations of the Water Plant. For example, failure to the level transmitter of the pool level (the water level feeding all the filters) will prohibit the automation of the filtration process increasing the chances of operational errors leading to possible flooding and unsuitable filtration rates.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	All maintenance expenditure are included in various maintenance accounts
Personnel Costs	None
Training Costs	None

Electrical Improvements Program Phase II

Water Fund- Water Plant Facility

2019
2020

\$250,000
\$120,000

Operating
Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

Roundhouse MCC 1971 - part of 1971 expansion

Funding History

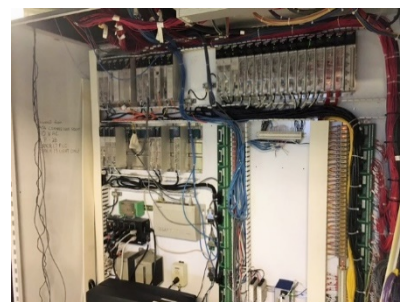
N/A

Project Description & Justification

- 2019 Replacement of the Programmable Logic Circuits (PLCs) and SCADA integration of the new electrical equipment from the electrical upgrade project at a projected cost of \$250,000
- 2020 Replace the low lift station roundhouse Motor Control Center (MCC) at a projected cost of \$120,000

Replacement of the Programmable Logic Controllers (PLCs) “A” and “B” Project

Supervisory Control and Data Acquisition System (SCADA) at the water plant provides computer controls to assist the Operator in monitoring and controlling the treatment processes and pumping operations including remote sites. The SCADA system is comprised of two main components: operating software and Programmable Logic Controllers (PLCs) hardware.



In April 2014, the Village was informed by the manufacturer of the PLC hardware used by the Wilmette Water Plant (Schneider Electric) that the PLCs and the associated software installed during the 8 MGD upgrade in 2001/2002 will be obsolete on May 31, 2015. These pieces of hardware were not part of the 2011 SCADA upgrade. PLCs “A” and “B” control and monitor the operation of the chemicals feeding systems, the mixers for the flocculation process, pumping operations and multiple levels and flows. Although Schneider Electric indicated that service by replacement and repair will be available for eight years post 2015 (2023), servicing and repairing these PLCs potentially could result in extended downtime and difficulty as the components required

to execute the repairs become scarce. Failure in these PLCs will have moderate severity impact to the operation of the Water Plant in pumping capacity and treatment process.

Additionally, the electrical improvements project will produce significant number of data and signals that will be required to integrate into our existing SCADA.

The projected cost of replacement including programming is \$250,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	Less than 25% of anticipated useful life and the units are considered obsolete with no service available after 2013
Criticality Rating	3	Has a moderate severity impact on the operation of the plant

Replacement of the Low Lift Station Roundhouse Motor Control Center (MCC) Project

The motor control center located in the roundhouse provides power to 3 low lift pumps in the 1971 low lift station. It was installed during the 1971 expansion and has exceeded its useful life. Failure in this unit will cut the plant treatment capacity by 50%. The projected cost to replace this MCC is \$120,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	5	Reliable life has been exceeded
Criticality Rating	3	The plant capacity will be reduced by 50% if the MCC to fail

Project Update

The replacement of the Programmable Logic Circuits (PLCs) project cost was modified from \$190,000 to \$250,000 due to increased scope of work.

Project Alternative

An alternate to the replacement is to perform repairs to the MCC on an emergency basis. However, the repairs could be lengthy in time and potentially reducing the capacity of the treatment capabilities of the plant by almost 75 percent.

Operating Budget Impact

Is this purchase _____ routine or _____ non-routine?

NONROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Rebuild Wash-water Pumps

Water Fund– Water Plant Facility

2019

2020

\$60,000

\$50,000

Operating

Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

Wash-water Pump #24 1971 – part of 1971 expansion

Wash-water Pump #15 1956 – part of 1956 expansion

Funding History

Rebuild pump #24 1987 \$6,600

Rebuild pump #24 motor 2007 \$21,550

Rebuild pump #15 1986 \$4,400

Project Description & Justification

2019 rebuild wash-water pump #24 at a projected cost of \$60,000

2020 rebuild wash-water pump #15 at a projected cost of \$50,000



For FY 2019: Rebuild Wash-water Pump #24

The Wilmette Water Plant has 2 wash-water pumps used to supply portable water to all 10 filter units during the backwash process. Pump #24 is a large 400 HP pump used to supply water to the larger filter units (filters 8-10) during the backwash process. It was installed with the 1971 expansion and last rebuilt in 1987. The pump runs less than 2 hours every other day and see less wear than other pumps in the plant. Rebuilding this pump every 20 to 30 years is advisable. The pump now has limited reliable life remaining and failure would require the use of the smaller pump #15. The smaller pump will not be able to provide adequate and complete backwash to filters 8-10 and therefore will affect the water quality produced risking violating EPA regulations. Additionally, pumps failure could cause more damage to the rotating elements costing significantly more in repairs than scheduled rebuilding. The projected cost of rebuilding pump #24 is \$60,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	Reliable life has been exceeded but generally performance has not been measurably impacted
Criticality Rating	3	Backwashing efficiency will be impacted which will have a moderate impact on water quality/regulatory

For FY 2020: Rebuild Wash-water Pump #15

The Wilmette Water Plant has 2 wash-water pumps used to supply portable water to all 10 filter units during the backwash process. Pump #15 is smaller 200 HP pump used to supply water to the filter units 1-7 during the backwash process. It was installed with the 1956 expansion and last rebuilt in 1986. The pump runs less than 2 hours every other day and see less wear than other pumps in the plant. Rebuilding this pump every 20 to 30 years is advisable. The pump now has limited reliable life remaining and failure would require the use of the larger pump #24. Pump #24, due to its size, is not ideal to use for the smaller filters (especially filters 1-4). It will lead to loss of filter media and potentially damage the underdrain. Additionally, pumps failure could cause more damage to the rotating elements costing significantly more in repairs than scheduled rebuilding. The projected cost of rebuilding pump #15 is \$50,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	Reliable life has been exceeded but generally performance has not been measurably impacted
Criticality Rating	3	Backwashing efficiency will be impacted which will have a moderate impact on water quality/regulatory

Project Update

Projects scheduled for FY 2016 & 2017 are postponed to FY 2019 & 2020 respectively due to lower operating hours than anticipated.

Project Alternative

An alternative is to postpone the rebuilding until symptoms of malfunction appear, or the pumps fail. However, the high lift pumping capacity will be reduced somewhere from 4 MGD to 18 MGD depending on which pump(s) are out of service. The impact of such reduction in capacity could lead to water restrictions during high demand days.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Department Budget	Water Fund
Account Number Description	Rebuild High Lift Pumps
Account Number	41818090-470530-80805

Roof Repairs

Water Fund–Plant Facility Improvements

2020

\$220,000 Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

1971 filter building roof rebuild	1990	\$63,960
1933 & 1956 plant building roof rebuild	1998	\$153,900
3.0 MG reservoir building roof rebuild	1999	\$8,700

Funding History

Rebuild lower portion 1933 roof	2006	\$304,900	Bond
Rebuild upper portion 1933 roof	2008	\$298,000	Bond
Install membrane on 1956 & 1971 roofs	2010	\$330,000	Bond
Rebuild 3.0 MG reservoir roof	2014	\$38,000	Operating

Project Description & Justification

The Water Plant facility, with the initial construction in 1933 has grown to a facility that has many roof areas as the result of subsequent expansions in 1956 and 1971 (see figure 1).

Hutchinson Design Group, a roof consultant, conducted a roof survey of the two roofs in this CIP in 2012. The survey provided a recommended schedule for roof repairs based on type, age, and condition of each roof area:

2020 Roof Repairs

The upper 1956 roof was last rebuilt in 1998 and a temporary repair was performed in 2006. It is anticipated that by 2020, permanent repairs will be needed to restore roof integrity and protect building equipment housed underneath it. The budget estimate of \$220,000 for the upper 1956 Water Plant roof is for a conventional membrane system. The roof will have a projected 30 year life.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	The 1956 roof has exceeded useful life and is in poor condition
Criticality Rating	3	Leaks in the roof could damage equipment housed in the building and have a significant impact on operation

Project Update

There are no changes to this CIP.

Project Alternative

An alternative is to postpone the rebuild and repair leaks on an emergency basis. However, this would increase the risk of damaging expensive equipment such as pump motors, motor control centers that are housed in this building.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

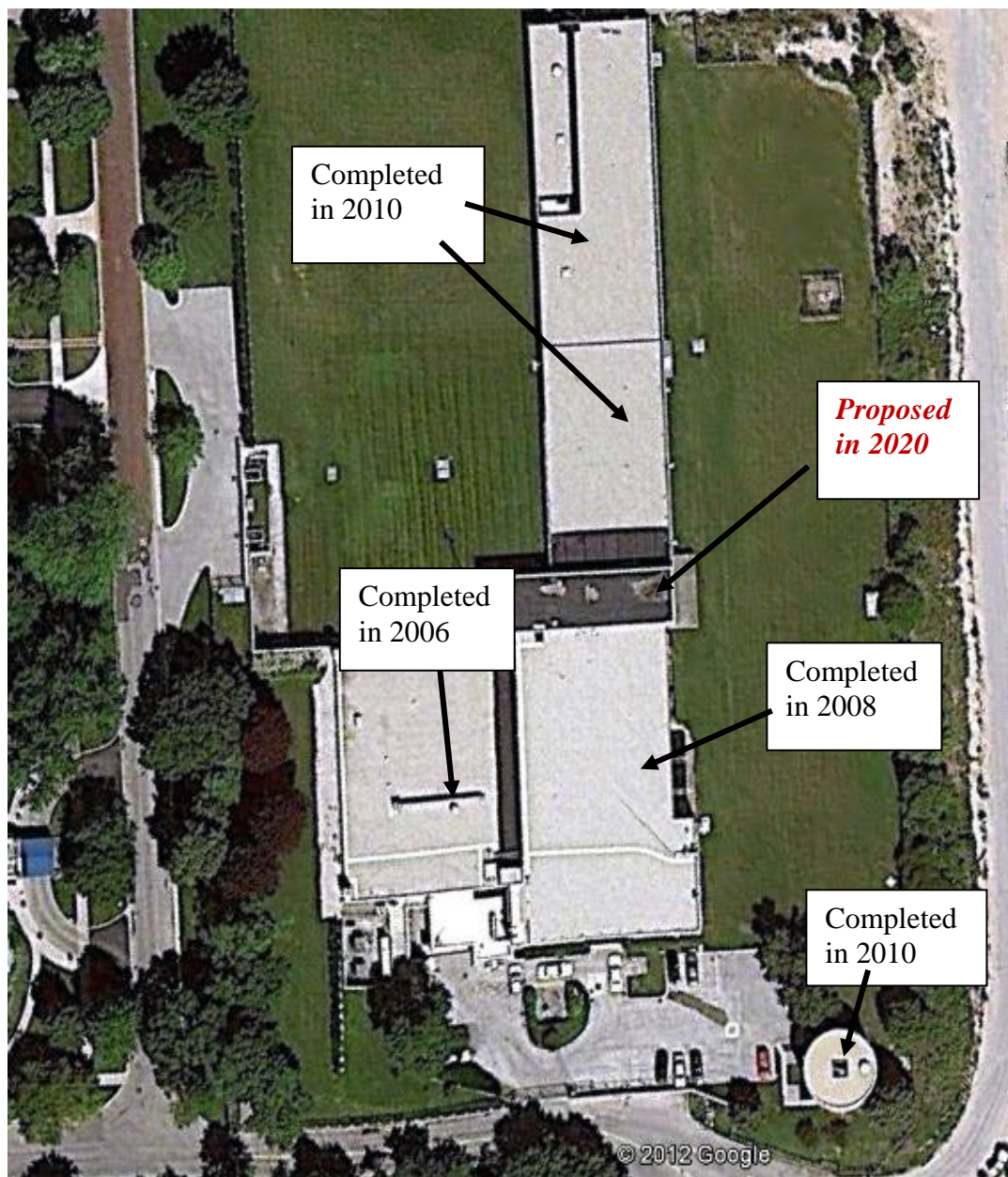


Figure 1: The various roof areas at the water plant facility shown with the last rebuild date or proposed date.

Electrical Improvements Program Phase III

Water Fund- Water Plant Facility

2021

\$500,000

Bond

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

LL pump #22 VFD 1997 - part of 1997 bond issuance
LL pump #27 VFD 2002 - part of 2002 expansion

Funding History

N/A

Project Description & Justification

2021 Replace the Variable Frequency Drives (VFDs) for Low Lift (LL) pumps #22&27

A variable-frequency drive (VFD) is a type of adjustable-speed drive used in electro-mechanical drive systems to control AC motor speed and torque by varying motor input frequency and voltage. The Water Plant uses these drives to adjust the water flows and pumpage without the need to turn-off and turn-on pumps, which reduces the stress on the system. Additionally, there are energy savings with the use the VFDs over fixed-speed pumps.

The Water Plant has two VFDs on pumps in low lift pumping operation: LL pump #22 and LL Pump #27. These drives were installed in 1997 and 2002 respectively. The typical effective life of these drives is 15-20 years. The drives have shown signs of wear and tear with increased maintenance needs and becoming more difficult to maintain due to lack of spare parts and support.

In FY 2021, it is proposed to replace the three VFD equipment at an estimated cost of \$500,000. Combining the replacement of the drives should reduce the overall cost due to economy of scale and allows the Water Plant to standardize on the equipment for ease of maintenance.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	Less than 10-25% of useful life left on these units with many maintenance needs
Criticality Rating	3	The capacity of the plan could be impacted by as much as 25% if one of the units to fail. The lead time could be up to one year

Project Update

The VFD for high lift #12 was removed from this CIP as the result of the need to replace it during the electrical improvements phase I. Therefore, the estimated cost for this CIP was reduced from \$760,000 to \$500,000.

Project Alternative

An alternative is to separate and stage the replacement of the units to reduce the cost for a particular year. However, it is believed that the overall cost could be reduced in combining the replacement due to economy of scale.

Operating Budget Impact

Is this purchase _____ *routine* or __X__ *non-routine*?

NONROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Treatment Process Improvements Program – Phase II

Water Fund–Water Plant Facility

2022

2023

\$500,000 Bond

\$2,000,000 Bond

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

1933 filters underdrain 1978 – \$126,000

Funding History

N/A

Project Description & Justification

2022 Engineering design of the replacement of the 1933 filters underdrain system at a projected cost of \$500,000

2023 Construction and installation of the 1933 filters underdrain system at a projected cost of \$2,000,000

The Water Plant has 10 multimedia filters. The underdrain systems of filters have multiple functions including:

- Provide structural support to the filter media.
- Collect the filtered water and delivers it to the clear-wells for storage and pumping.
- Provide the basis for how the backwash system will function.

The current underdrain system for the 1933 filters was installed in 1978. The Water Plant has not had performance issues (operationally or water quality) with the 1933 filters. However, the typical life expectancy of an underdrain system is 30-50 years. Additionally, the lead time for a typical underdrain project could take up to 3 years to design and install. Failure in the underdrain could reduce the water plant capacity up to 22% and could affect the water quality produced. The projected cost for the design and installation of new underdrain system is \$2,500,000.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	25% of anticipated useful life is remaining based on a life expectancy of 30-50 years
Criticality Rating	3	The lead time is up to 3 years of design and install new underdrain. Failure could impact up to 25% of plant capacity and have a low to moderate impact on water quality

Project Update

There are no changes in this CIP.

Project Alternative

Postponing the project is an alternative. However, the underdrain system will be 45 years old in 2023, the year proposed for replacement. This would increase the risk for capacity impact and water quality issues if the underdrain would to fail.






Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Water Intake Improvements	2023	\$700,000	Bond
Water Fund–Plant Facility Improvements	2024	\$7,000,000	
	2025	\$7,000,000	

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

1933 water intake pipe	1933	Part of the original plant
Zebra mussel control feed line	1992	

Funding History

N/A

Project Description & Justification

- 2023 Detailed engineering design of the intake improvements and permitting at a projected cost of \$700,000
- 2024 Execution of the bidding process and start of construction at a projected cost of \$7,000,000
- 2025 Completion of construction of the intake improvements at a projected cost of \$7,000,000

The Water Plant has two raw water intakes. A 33 inch pipe constructed with the original plant in 1933 and a 42 inch intake built with the 1971 expansion.

The Water Plant utilizes both intakes throughout the year. The 1971 intake is sufficient to meet the capacity demand of the facility. However, if the 1971 intake happens to become unavailable, the 1933 intake is not sufficient to meet the water capacity demand.

In FY 2023-2025, due to its age, it is proposed to replace the 1933 intake with new intake that would be large enough to meet the water demand if the 1971 intake was unavailable and establish a true redundancy in the raw water intake operation. The projected cost of this replacement is \$14,700,000 which also includes the replacement of the zebra mussel control line installed in 1992.



Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	3	The pipe condition appears to be in fair condition with minimal issues but it is reaching the end of its useful life and it will be 100 years old in 2033.
Criticality Rating	3	The 1933 intake can't support the demand of the facility if the 1971 intake is an available. Long lead time for construction

Project Update

There are no changes in this CIP.

Project Alternative

An alternative is to postpone the replacement of the project. However, the risk of failure will increase as this intake approaches 100 years of service and the potential that the facility can't meet water demand if the 1971 intake becomes an available.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Replace Low Lift Pump 23
Water Fund–Water Plant Facility

2023

\$360,000

Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

1971 – Part of the 1971 expansion

Funding History

N/A

Project Description & Justification

2023 Replace low lift Pump #23 at a projected cost of \$360,000



Low Lift Pump 23 (LLP 23) was installed with the 1971 expansion of the Water Plant. LLP 23 was last rebuilt in 1997. Due to its age, hours of operation and the capacity of the pump, it is proposed to replace it in FY 2023. A new capacity with Variable Speed Drive (VFD) for this pump will provide the plant with more flexibility in its low lift pumping operation. Failure to this pump will reduce the plant treatment capacity by approximately 25%.

It is worth noting that the addition of new wholesale customers would require this improvement.

Summary of the risk assessment of this project is below:

Risk Score	Tier 3	Justification
Condition Rating	4	Less than 25% of useful life left
Criticality Rating	2	Failure will reduce the plant low lift capacity by 25%

Project Update

There are no changes in this CIP.

Project Alternative

An alternative is to rebuild this pump and motor, replacing components when maintenance is needed. Due to the age of this pump and the shortage of repair parts, the cost of rebuilding will be high. A failure in this pump will reduce the pumping capacity by 25% of the Water Plant.

This project could be impacted if Water Plant improvements were required to accommodate additional municipal water customer(s).

Another alternative that staff will evaluate is to combine it with the intake improvements project for cost savings due to economy of scale.






Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Treatment Process Improvements	2024	\$750,000	Operating
Program – Phase III	2025	\$140,000	Operating
Water Fund–Water Plant Facility	2026	\$470,000	Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

1933 filters drain and influent valves	1967 – cost unknown
1971 filters drain, influent and backwash valves	1971 – part of 1971 expansion
High lift meter vault “A”	1956 – part of 1956 expansion
Basins 1 and 2 valves	1933 – part of the original plant
Basins bearings	2002 – part of 2002 expansion

Funding History

Filter valve improvements	2016	\$75,000	Operating
Filter Valve Improvements	2012/2013	\$387,000	Bond
Replace backwash water valves (filter 4)	2010	\$30,000	Operating

Project Description & Justification

2024	Replace 17 filter valves at a projected cost of \$750,000
2025	Replace vault “A” high lift flow meter at a projected cost of \$140,000
2026	Flocculation basins improvements by replacing the bearings and valves at a projected cost of \$470,000

Projects Proposed in FY 2024

Filter Valves Replacement

Each filter at the Wilmette Water Plant has 5 valves:

- Influent valve to allow the water into the unit.
- Drain valve to drain the backwash water away from the unit.
- Backwash valve to allow the water from underneath the filter unit during the backwash sequence.
- Surface wash or air scour valve to assist during the backwash sequence.

- Effluent valve to allow the filtered water to move into the clear-wells.

A typical butterfly valve could last for 35-45 years before replacement. In recent years, staff has noted increased difficulty operating the valves and some leakage. Due to their age, there are no repair parts available for these valves and they will require replacement. At the same time these valves are replaced they will receive motorized operators. Motorized operators provide added longevity and improved SCADA compatibility over the current cylinder actuated operators. Some valves were replaced in 2013. The remaining filter valves to be replaced are summarized below:



Original Install	No. Of Valves	Description	Estimated Cost
1967	8	1933 influent and drain valves	\$ 200,000
1971	6	1971 filters backwash and influent valves	\$ 300,000
1971	3	1971 filters drain valves	\$ 250,000
Total		17	\$ 750,000

Summary of the risk assessment of this project is below:

Risk Score	Tier 3	Justification
Condition Rating	5	The valves have reached or have <10% of useful life
Criticality Rating	2	Plant capacity would eventually be impacted by 10% and the lead time is about 6 months

Projects Proposed in FY 2025

High Lift Flow Meter Vault "A" Replacement

The existing Vault "A" flow meter, installed in 1956, is used to measure high lift pump flows entering the distribution system. It is one of two high lift meters.

The flow meter in Vault "A" is no longer accurate at low flows and needs to be replaced. Due to the age of this meter, repair parts are no longer available. The old meter cannot be replaced without demolishing the existing vault. It is less costly to build a new vault along the east wall of the 1933 building than to demolish and reconstruct the old vault. A new 24-inch magnetic flowmeter would be installed in the new vault. Once this is completed, the old meter would be abandoned in place. The projected cost of these improvements is \$140,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 3	Justification
Condition Rating	4	Poor condition with reduced accuracy
Criticality Rating	2	Failure would results in less accurate readings which could affect regulatory fillings

Projects Proposed in FY 2026

Flocculation Basins 1&2 Valves Replacement

Basins 1 & 2 are currently operated in series, as one combined basin. During the stress testing conducted in 2004, treatment deficiencies (high settled turbidity and poorly coagulated water) were identified in this basin pair. A preliminary engineering review suggested that if the Village restored these basins to their original operation as two separate basins, this would likely solve these deficiencies. This will be accomplished by replacing two of the inoperable 1933 gate valves and installing a blank plate over a third broken valve. The estimated cost of these repairs is \$170,000.



Summary of the risk assessment of this project is below:

Risk Score	Tier 3	Justification
Condition Rating	5	The valves have failed
Criticality Rating	2	Low impact on the water quality

Flocculation Basins Bearings Replacement

Basins 3, 4, 5 and 6 at the Wilmette Water Plant have grease bearings on the flocculator drive shaft to balance the rotation and mixing. The bearings were installed in 2002 part of the 8.0 MGD upgrade. The life expectancy of these bearings is around 30 years. In recent years, the maintenance needs and repairs for these bearings have increased. The failure in these bearings could affect the water quality and potentially taking the basin out of service which will reduce the plant capacity. In this project it is proposed to replace the bearings with water lubricating bearings that require less maintenance. The projected cost of this replacement is \$300,000.



Summary of the risk assessment of this project is below:

Risk Score	Tier 3	Justification
Condition Rating	4	Many historical maintenance needs
Criticality Rating	2	Plant capacity would eventually be impacted by 25%

Project Update

There are no changes in this CIP.

Project Alternative

Projects can be implemented separately to reduce total cost for a particular year. This could reduce savings due to economy of scale in some years such as the filters valves replacement. Additionally, delaying projects will increase their risk score and potentially impact the operation as stated above.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

1971 Low Lift Station Influent Valve Replacement

Water Fund–Water Plant Facility

2025

\$250,000

Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

1971 Part of the 1971expansion

Funding History

N/A

Project Description & Justification

2025 Replace the isolation valves of the 1971 intake line at a projected cost of \$250,000



The 1971 Intake is approximately one mile out in Lake Michigan and terminates at the low lift station in the roundhouse at the Water Plant. The 1971 low lift station is the primary operating station since it has a larger capacity than the 1933 station which only can be operated during the winter months. The 1971 Intake line has two 42" influent valves that are used to isolate the line to perform maintenance and inspection of the roundhouse tank.

During the 2012 inspection, the staff experienced difficulty in operating the valves and had significant leakage when the valve was closed. Although this valve is not necessary for the day-to-day plant operations, long-term plant capacity would be reduced if the 1971 wet well cannot be maintained. The estimated cost of this replacement is \$250,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 2	Justification
Condition Rating	5	Reached useful life and difficulty operating
Criticality Rating	1	This valve not is needed for day to day operation but long term the capacity of the plant could be impacted if 1971 tank can't be maintained

Project Update

There are no changes in this CIP.

Project Alternative

An alternative is to postpone the replacement of the valve to another year. However, failure to operate the valve in the future could cause the inability to service the station and in turn the potential for reduced capacity. Another alternative that staff will evaluate is to combine this project with the intake improvements project for an economy of scale savings potential.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Water Intakes Inspection

Water Fund- Water Plant Services

2018

2021

\$18,000

\$20,000

Operating

Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

N/A

Funding History

2015 \$9,500

Project Description & Justification



2018 Diving inspection of the 1933 and 1971 intakes, perform a penetration of the 1971 intake and remove and clean sediments and debris around the structures of the intakes at a projected cost of \$18,000.

2021 Diving inspection of the 1933 and 1971 intakes, perform a penetration of the 1971 intake and remove and clean sediments and debris around the structures of the intakes at a projected cost of \$20,000.

The Water Plant has two intake pipes serving the treatment plant: a 33-inch pipe installed in 1933 and a 42-inch pipe installed in 1971. The intake pipelines extend approximately ½ mile and one mile out in the lake, respectively. The 1933 intake terminates at two drum structures 65 feet apart; the 1971 intake terminates at a wooden crib structure. All three structures are submerged in about 22-25 feet of water with no surface markings. Routine inspection of these structures by a diving contractor is performed 2-5 years. It was last inspected in 2015.

In FY 2018, it is proposed to inspect the intakes structures, perform a penetration of the 1971 intake to assess the structural integrity, operate the zebra mussel control line and remove and clean sediments and debris around the structures of the intakes at a projected cost of \$18,000.

In FY 2021, it is proposed to perform the same services at a projected cost of \$20,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 2	Justification
Condition Rating	3	Fair condition as the regular maintenance date approaches.
Criticality Rating	1	The plant capacity is only minimally reduced as sediment builds up around the structures

Even though this project is a tier 2 risk rated, this is a preventative maintenance program to ensure fair condition is maintained in these intakes structures. Therefore, the recommendation to perform this maintenance will be solely based on the time of last inspection in order to maintain standards of best practice.

Project Update

There are no changes in this CIP.

Project Alternative

An alternative is to postpone the inspections. However, delaying the inspections could allow sediments and debris build up that could impact the plant capacity and water quality.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Rebuild High Lift Pumps
Water Fund-Water Plant Services

2019

\$40,000

Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

N/A

Funding History

Rebuild high lift pump #12
2013 \$26,990 Operating

Rebuild high lift pump #4
2014 \$13,000 Operating

Rebuild high lift pump #2
2015 \$20,744 Operating

Rebuild high lift pumps #3&20
2017 \$35,000 Operating



Project Description & Justification

In FY 2019, rebuild high lift pump #9 at an estimated cost of \$40,000

There are eight High Lift Pumps (HLPs) at the Water Plant that maintain the pressure in the distribution system and deliver the finished water to the residents and wholesale customers. Bimonthly, all available HLPs are tested for vibration levels and operating efficiency. Based on the results of this testing and the hours of operation, maintenance is recommended. Past experience has indicated that the existing HLPs need to be removed and rebuilt after approximately 30,000 hours of operation for preventative maintenance. After rebuilding, the pumps are expected to operate for an additional ten years or more with minimal maintenance. Below is a table of all the high lift pumps inventory and proposed preventative maintenance in this CIP:

CIP Year	Pump	Year Last Rebuilt	Hours of Service
--	HL #1	2004	14,719
--	HL #2	2015	1,041

2017	HL #3	2007	-0-
--	HL #4	2014	5,126
--	HL #5	2010	2,433
2019	HL #9	New 1988	10,830
--	HL #12 VFD	2013	27,299
2017	HL #20	2002	-0-

*at least 30k hours; unable to verify actual hours.

Since this program began in 2001, seven pumps have been rebuilt. The above schedule takes into account the hours of operation, pumping efficiency, and the bimonthly vibration test results for each pump unit.

Summary of the risk assessment of this project is below:

Risk Score	Tier 2	Justification
Condition Rating	3	Fair condition as the regular maintenance date approaches.
Criticality Rating	2	The plant capacity will be impacted up to 25% depending on which pump failed

Even though this project is a tier 2 risk rated, this is a preventative maintenance program for the high lift pumps. Therefore, the recommendation to perform this maintenance will be based on the hours of service as discussed above. The break-down of these pumps could cause significantly higher repair cost as damage to the shaft and/or propeller can occur.

Project Update

There are no changes in this CIP.

Project Alternative

An alternative is to postpone the rebuilding until symptoms of malfunction appear, or the pumps fail. However, the high lift pumping capacity will be reduced somewhere from 4 MGD to 18 MGD depending on which pump(s) are out of service. The impact of such reduction in capacity could lead to water restrictions during high demand days. Additionally, much higher cost to repair the pumps would be likely as other parts of the pumps could be damaged.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Department Budget	Water Fund
Account Number Description	Rebuild High Lift Pumps
Account Number	41818090-470530-80805

Tank Maintenance

Water Fund- Water Plant Services

2019

\$40,000

Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

N/A

Funding History

1971 Intake	2003	\$5,827
	2007	\$4,243
	2013	\$10,000
Wetwell#2	2003	\$23,000
	2013	\$17,000



Project Description & Justification

Accumulation of sediment, primarily “spent” anthracite filter media, will buildup in Wetwell 2 and sand/clay in the 1971 Intake station well. This media will not wash out and must be manually removed and hauled away. The sediment cannot be reused and must be disposed of at an approved landfill.

The 1971 Intake station well was cleaned by an outside contractor in 2003 for \$5,827, in 2007 for \$4,243 and in 2013 for \$10,000. Wetwell #2 was cleaned by an outside contractor in 1988 for \$12,000, in 2003 for \$23,000 and in 2013 for \$17,000.

In FY 2019, it is proposed to clean out the 1971 Intake station well and Wetwell #2 at a projected cost of \$40,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 2	Justification
Condition Rating	3	Fair condition as the regular maintenance date approaches.
Criticality Rating	1	The plant capacity is only minimally reduced as sediment builds up in the wells

Even though this project is a tier 2 risk rated, this is a preventative maintenance program to ensure fair condition is maintained in these tanks. Therefore, the recommendation to perform this

maintenance will be based on the years of service since last cleaning and the amount of sediments found upon inspections.

Project Update

There are no changes to this CIP.

Project Alternative

An alternative is to postpone the cleaning. However, delaying the cleaning of the 1971 Intake station could result in restrictions to the ability of the Water Plant to draw water from Lake Michigan. Likewise, the delay in cleaning the Wetwell could result in more “build-up” of the sediments causing a reduction in volume of this well and negatively affecting the operation of filters washing and recycling of the washed water.

Operating Budget Impact

Is this purchase *routine* ____ or *X* *non-routine*?

NON-ROUTINE	
Maintenance Costs:	None
Personnel Costs:	None
Training Costs:	None

Glenview Meter Upgrade

Water Fund–Water Distribution Improvements

2018

\$35,000

Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

Vaults A&B meters 1991- Cost unknown
 Vault C-N&S meters 2001 – part of Glenview expansion

Funding History

2009 - \$18,000
 2012 - \$18,500
 2016 - \$26,556



Project Description & Justification

The Village maintains four 16-inch master turbine style meters with the Village of Glenview housed in vaults: vault C with two meters North (N) and South(S), vault A, and vault B. These are the official billing meters for the wholesale of water to the Village of Glenview (this include the water sold by Glenview to the Village of Golf, Illinois American and in 2020 to North Main utility). All four master meters are tested for accuracy by an outside contractor biannually.

Part of the maintenance of these meters, the water management department replaced two flowmeter chamber meters once every five to six years (the actual meter body is not replaced). The department would purchase the new flowmeter chambers and perform the installation. The last replacement of these chambers was performed in 2012.

The distributor of the meters has informed the Village that the manufacturer will no longer have the program of flowmeter chamber replacement due to the elimination of the type of meter that is currently used starting in 2013.

In FY 2016, the two meters in vaults A&B were replaced with magnetic flow meters. These magnetic meters have a lift expectancy between 15 to 20 years without the need of parts replacement.

In FY 2018, it is proposed to replace the two remaining meters in Vault C with new magnetic meters at an estimated cost of \$35,000.

Summary of the risk assessment of this project is below:

Risk Score	Tier 5	Justification
Condition Rating	4	The meters have less <25% of anticipated useful life, obsolete meters
Criticality Rating	4	Moderate severity as old meters tend to under measure flow rates resulting in lost revenue

Project Update

The cost of the project was reduced from \$50,000 to \$35,000 based on an updated cost estimate.

Project Alternative

The alternative is to postpone the replacement of the meters another year. However, this may lead to loss of revenue, since meters generally run slower as they wear.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Department Budget	Water Fund
Account Number Description	Glenview Meter Replacement
Account Number	41838090-470550-80920

Water Meter Replacement Program	2018	\$88,000	Operating
Water Fund–Water Distribution Improvements	2019	\$88,000	
	2020	\$88,000	
	2021	\$88,000	
	2022	\$50,000	

Condition Rating	Criticality Rating						
	1	2	3	4	5		
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3	Tier 1	Very Low Risk
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4	Tier 2	Low Risk
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5	Tier 3	Medium risk
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5	Tier 4	High Risk
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5	Tier 5	Very High Risk

Original Purchase Date & Cost

N/A

Funding History

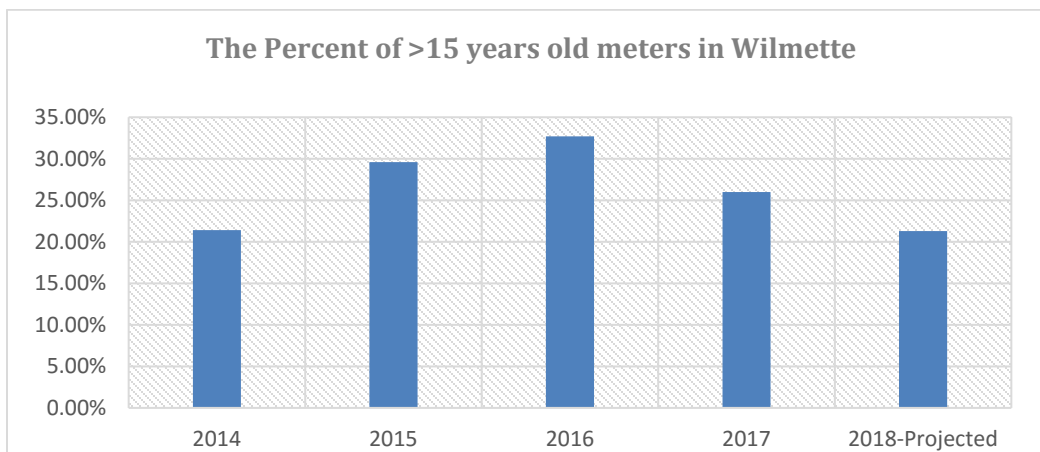
2017	\$88,000
2016	\$88,000
2015	\$33,000
2014	\$33,000
2013	\$33,000

Project Description & Justification

The Village has approximately 9,000 water meters installed throughout the distribution system that are read on a quarterly basis. The meter shop replaces old meters based on age and usage which approximately translates into every 13-20 years. As water meters age, they tend to slow down and under register water use.

Between 2007 and 2014, the water meter replacement program suffered a reduction in replacement due to the acceleration of the AMR installations, retirements and reduction in staffing at the meter shop during the great recession. This has led to backlog of meters in need of replacement. By the beginning of 2016, the percent of meters that are older than 15 years has increased to almost 33% of all meters in Wilmette or almost 3,000 meters, see the chart below.

For FY 2016, the Village Board approved an increase in meters replacement program in order to clear the backlog and maintain a 15 year replacement rate. As a result, we saw an improvement in the percent of meters that are older than 15 years in the Village in 2017, see the chart below.



In order to maintain a 15-year replacement rate, the theoretical percent of >15 year old meters in the Village should be about 6%.

The following table is a summary of the meters age and corresponding number as of April 2017:

Age	Number of meters	Percent
< 5 years	2,713	30.2%
5-10 years	1,719	19.1%
10 – 15 years	2,211	24.6%
>15 years	2,337	26.0%

In FY 2018-21, it is proposed to replace approximately 1000 old meters each year with new meters.

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	5	The meters have less <10% of anticipated useful life
Criticality Rating	3	Old meters tend to decrease in accuracy resulting in lower revenue

Project Update

There are no changes in this CIP project.

Project Alternative

An alternative is to delay or not replace old meters. However, this could result in under registering of water use.

Operating Budget Impact






Is this purchase X routine or non-routine?

ROUTINE	
Department Budget	Water Fund
Account Number Description	Meters Replacement Program
Account Number	41828090-430920

Automatic Meter Reading (AMR) Program
Water Fund–Water Distribution Improvements

2022 \$2,500,000

Bond

Condition Rating	Criticality Rating								
	1	2	3	4	5				
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3	Tier 1		Very Low Risk	Include in the CIP > 10 years
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4	Tier 2		Low Risk	Include in the CIP 7-10 years
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5	Tier 3		Medium risk	Include in the CIP 5-7 Years
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5	Tier 4		High Risk	Include in the CIP 2-5 Years
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5	Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost

N/A

Funding History

2007	\$66,671	Bond	2008	\$91,299	Bond
2009	\$98,000	Bond	2010	\$98,000	Bond
2011	\$52,000	Operating	2012	\$185,000	Operating
2017	\$20,000	Operating			

Project Description & Justification

In FY 2022, it is proposed to replace all the AMRs in the Village with new model that would support a fixed system reading at a projected cost of \$2,500,000.

The AMR program began in 2000 and was completed in 2012. As a result, all 8,950 outside registers and inside generators with an Automatic Meter Reading (AMR) system were replaced.

In FY 2022, it is proposed that the Village replace all the AMRs and install a fixed network infrastructure to allow for automated reading of meters wirelessly. This consists of replacing the AMRs and installing fixed antennas throughout the Village. The mass replacement program would provide instantaneous water meter readings, better customer service and allow for monthly billing of all accounts. Due to the staged installation of the AMRs, many AMRs are currently out of warranty and have exceeded their life expectancy as the table below shows:

Installation Year	Number of AMRs	Warranty/Battery Life Expectancy
2004	410	10
2005	892	10
2006	849	20
2007	904	20
2008	1,106	20

2009	822	20
2010	1,109	20
2011	624	20
2012	1,483	20

Summary of the risk assessment of this project is below:

Risk Score	Tier 4	Justification
Condition Rating	4	15% of the AMRs have exceeded their life expectancy and an additional 21% would have less than 25% left by year 2022
Criticality Rating	3	Failure in this equipment will have moderate severity on customer service

Project Update

There are no changes in this CIP.

Project Alternative

An alternative is to replace the AMRs in stages similar to the previous program. However, this would create two different technologies that the Village has to maintain as well as the possibility of changing technologies by the provider in the middle of the program.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Department Budget	Water Fund
Account Number Description	Automatic Meter Reading
Account Number	41828090-430930

Replace Standpipe Isolation Valve
Water Fund-Water Distribution Improvements

2021 \$60,000 Operating

Condition Rating	Criticality Rating				
	1	2	3	4	5
1	Tier 1	Tier 1	Tier 2	Tier 3	Tier 3
2	Tier 1	Tier 1	Tier 3	Tier 3	Tier 4
3	Tier 2	Tier 2	Tier 4	Tier 4	Tier 5
4	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5
5	Tier 2	Tier 3	Tier 4	Tier 5	Tier 5

Tier 1		Very Low Risk	Include in the CIP > 10 years
Tier 2		Low Risk	Include in the CIP 7-10 years
Tier 3		Medium risk	Include in the CIP 5-7 Years
Tier 4		High Risk	Include in the CIP 2-5 Years
Tier 5		Very High Risk	Include in the CIP 1-3 Years

Original Purchase Date & Cost
1956

Funding History
N/A

Project Description & Justification

The 4.0 MG standpipe is periodically required to be serviced for maintenance or inspection. This requires the complete isolation of the standpipe from the distribution system which is accomplished by a 16 inch valve located near the standpipe. This valve was installed when the standpipe was erected in 1956. During the rehabilitation of the standpipe in 2011, the staff observed difficulty in operating the valve and some minor leakage. Failure in the isolation valve to operate properly would prevent the Village's ability to easily isolate the standpipe for maintenance or emergency.



For FY 2021, it is proposed to replace the 16 inch isolation valve with a new valve at an estimated cost of \$60,000. This estimate includes the cost of a new valve and installation by an outside contractor.

Summary of the risk assessment of this project is below:

Risk Score	Tier 3	Justification
Condition Rating	3	The valve is in fair condition but functional with less <50% of anticipated useful
Criticality Rating	2	Failure will have a low impact as this valve is not used in day-to-day operations. There are other ways to isolate the standpipe but not as convenient

Project Update

There are no changes in this CIP.

Project Alternative

The alternative is to postpone the replacement of the valve and repair/replace it on an emergency basis. However, this could jeopardize the ability to isolate the standpipe when maintenance is required or in case of an emergency which could lead to flooding or water pressure issues.

Operating Budget Impact

Is this purchase _____ *routine* or X *non-routine*?

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Distribution System Valve Improvements	2018	\$ 67,594	Operating
Water Fund- Distribution Improvements	2019	\$ 69,562	
	2020	\$ 71,531	
	2021	\$ 73,500	
	2022	\$ 75,469	
X	Critical		
-	Recommended		
-	Contingent on Funding		

Original Purchase Date & Cost

N/A

Funding History

2017	\$62,500	Operating
2016	\$62,500	Operating
2015	\$62,500	
2014	\$123,000	
2013	\$122,000	
2012	\$71,000	
2011	\$61,800	
2010	\$60,000	

Project Description & Justification

This project is for the installation of new gate valves and the replacement of broken existing valves on the water distribution system as selected by Public Works. The new valves are installed to comply with Village Code (18-1.1).

The Village had been installing approximately four or five new valves each year at locations determined by the Engineering & Public Works Department, however, only three valves were installed in 2016 due to both pricing increase and larger valve sizes, and it is anticipated that only 2 valves will be installed in 2017 at the current funding level. Several valves are added to the list for replacement each year as the Water and Sewer crews exercise valves and discover inoperable valves, and there is already a backlog of 3 additional valves (Maple, Hibbard, and Elmwood) for which plans are already completed.

While this program is designed by in-house staff, there are soft costs required each year to facilitate the design of the Distribution System Valve Improvements Project. These outsourced services include hiring a geotechnical engineering firm to obtain soil borings and pavement cores and provide environmental evaluations if contaminated soils are determined to be present.

In the past, these soft cost services were not separately budgeted but were taken out of the annual project which decreased its overall budget effectiveness by approximately 5%. The annual budget request for the Distribution System Valve Improvements Project reflects 5% of the project construction costs for outsourced services.

Project Years	Project Budget	5% Outsourced Services	Total Budget
2018	\$64,375	\$3,219	\$67,594
2019	\$66,250	\$3,312	\$69,562
2020	68,125	\$3,406	\$71,531
2021	70,000	\$3,500	\$73,500
2022	71,875	\$3,594	75,469

Project Update

The funding amounts for 2018-2022 reflect an annual inflation factor of 3%.

Project Alternative

If new valves are not installed, water main breaks will require larger shut downs than allowed by Village Ordinance. In addition, not upgrading broken valves will make the valve exercising program more difficult to administer.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Account Number/Description	41838090-470550-80900 Valve Installations
Maintenance Costs	Public Works/ Water Fund
Personnel Costs	Valve Installations
Training Costs	41838090-470550

Unidirectional Water Main Flushing	2018	\$50,000	Operating
Water Fund- Distribution Improvements	2019	\$45,000	
	2020	\$45,000	
	2023	\$45,000	
	2024	\$45,000	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost
N/A

Funding History

2017	\$60,000
2011	\$36,750
2010	\$36,750
2007	\$24,704
2006	\$43,209



Project Description & Justification

This project consists of isolating half of the water distribution system and flushing sections of pipe by closing appropriate valves and exercising the hydrants in an organized sequential manner. The American Water Works Association (AWWA) recommends that a water system be flushed approximately every two to four years using the unidirectional flushing (UDF) method. This method isolates a particular section of pipe or loop by closing appropriate valves, exercising the hydrants in an organized sequential manner. This provides a direct flow to the hydrant from one direction, creating a sufficient velocity during the flushing operation to clean out the water main.

The AWWA reports that a comparison between conventional flushing and UDF indicates that planning is more time consuming, but the cleansing of the pipe interior is superior, with longer lasting results and less degradation of water quality due to stirring up of sediments or loosening of bacteriological growth. The AWWA recommends that a water system is flushed approximately every two to four years using this method.

Unidirectional flushing of approximately half of the distribution system was first accomplished in 2006/2007 and again in 2010/2011, with half the system completed each year. Staff recommends deferring the unidirectional flushing until 2019/2020 to accommodate a system-wide valve inventory and assessment in 2017/2018.

Project Update

This program has been deferred from 2017/2018 to 2019/2020 in order to allow for a valve assessment study and inventory of the entire water distribution system. In order to properly implement and conduct UDF, the Village needs to ensure all valves are operating properly and allow

sufficient time to make necessary repairs. Thus, the contractor designing and performing the UDF program will not have to back track and re-route around broken valves.

As part of the assessment, an inventory of all valves (and attributes) will be denoted and uploaded into the Village's GIS master file. This strategy and approach will result in lower costs by reducing redundancies and providing more accurate valve information upfront which results in a more efficient UDF design and implementation. The anticipated cost for future UDF programs will drop from \$120,000 (or \$60,000 per year) to \$90,000 (or \$45,000 per year) or possibly even lower.

Staff recommends completing the valve inventory and assessment in 2017 and 2018 and executing the UDF program in 2019/2020 and again in 2023/2024. If approved, the valve inventory/assessment and UDF programs would be directed through a Request for Proposal (RFP) process.

Project Alternative

Delay the project and reschedule the work during later years.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* ?

ROUTINE	
Account Number/Description	41838090-421000-20110 Unidirectional Water Main Flushing
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Water Main Program

(Replacement & Improvement)

Water Fund- Distribution Improvements

- Critical

X Recommended

- Contingent on Funding

2019 \$1,317,600 Operating

2020 \$1,300,000

2021 \$1,339,000

2022 \$1,378,000

2023 \$1,417,000

2024 \$1,456,000

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

The Village of Wilmette has over 104 miles of water main. The majority of the water main is between 50 and 80 years old. On average, there are 47 water main breaks per year, resulting in an annual average cost of approximately \$50,000. It has been proven that as water mains become old and reach the end of their useful lives, performance deteriorates resulting in high maintenance costs, loss of hydraulic capacity, reduced water quality, and an increase in customer complaints. The AWWA recommends replacing 1% of the distribution system every year. In order to achieve this rate of replacement, an average of \$1.3 million annually is needed to replace water mains.



The Village has two projects funded through the North Shore Council of Mayors Surface Transportation Program (STP); Locust Road Reconstruction and Central Avenue Reconstruction, both which are scheduled for 2019. Both of these projects require new water mains, which are at the end of their useful service life. Water main is a non-participating STP (federal) cost which must be paid by the Village. The estimated costs for the Locust Road and Central Avenue water main replacements are \$549,000 and \$768,600, respectively.

The water main replacement program will also require engineering and construction services estimated at 15% (\$195,000/year). Staff will be evaluating whether an additional full-time engineer is a more cost effective approach compared to outsourcing these engineering services.

Project Update

This project has been deferred a number of years with the goal to initiate an annual program when new wholesale water revenues are realized beginning in 2020. An annual inflation factor of 3% is included beginning in year 2021.

Project Alternative

Continue to repair water main breaks on an emergency basis. This alternative will be costlier over time, resulting in customer reliability problems and overextending Village manpower.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	41838090- Water Main Replacement
Maintenance Costs	None
Personnel Costs	\$195,000 for engineering services
Training Costs	None

Design & Construction Services	2019	\$ 104,000	Operating
Water Fund- Distribution Improvements	2020	\$ 104,000	
	2021	\$ 195,000	
	2022	\$ 195,000	

- Critical
 - X Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

Unknown

Funding History

N/A

Project Description & Justification

The design and construction services (soft costs) are annually required each year to facilitate the following project:

- Water Main Replacement & Improvement

The design services include topography survey, soils borings and pavement cores, environmental (soils) services, engineering plans, specifications and estimates. The construction services include materials testing and inspection services.

PROJECTS	2018	2019	2020	2021	2022	TOTAL
Design Services	\$104,000	\$104,000	\$104,000	\$107,100	\$110,200	\$529,300
Construction Services	\$0	\$0	\$91,000	\$93,700	\$96,500	\$281,200
TOTAL	\$104,000	\$104,000	\$195,000	\$200,800	\$206,700	\$810,500

These total soft cost services reflects 15% of the water main replacement and improvement project construction costs. Engineering staff recommends initiated the water main design two years before construction to ensure project readiness and provide updated cost estimates for construction budgeting. An annual inflation factor of 3% is included beginning in year 2021.

Project Update

This is a new project for 2019-2022.

Project Alternative

The alternative is to hire a full-time staff engineer to perform this work in-house.

Operating Budget Impact

Is this purchase *routine* X or *non-routine*?

ROUTINE	
Account Number/Description	41838090- Water Main Replacement
Maintenance Costs	None
Personnel Costs	None
Training Costs	None