CAPITAL IMPROVEMENT PROGRAM

2019 – 2028

Village of Wilmette
Ten Year Capital Improvements Program

IMPROVEMENT CATEGORY	2019	2020	2021	2022 & 2023	Five Year Total	Ten Year Total
Professional Services	-	190,190	15,190	73,190	**278,570**	412,570
Public Facilities	288,800	925,400	106,500	1,777,500	**3,098,200**	25,143,200
Equipment	381,400	20,000	-	20,000	**421,400**	841,400
Information Technology	72,000	14,000	101,000	42,000	**229,000**	334,000
Streets, Sidewalks & Alleys	4,640,140	6,857,640	15,232,985	8,953,135	**35,683,900**	62,193,880
Vehicles	891,250	1,430,350	1,102,250	1,287,500	**4,711,350**	10,999,600
Sewer Improvements	4,776,700	23,445,800	15,889,800	22,350,600	**66,462,900**	83,735,900
Water Improvements	7,347,800	5,545,900	3,490,000	9,214,500	**25,598,200**	52,488,200
Totals - All Categories	**18,398,090**	**38,429,280**	**35,937,725**	**43,718,425**	**136,483,520**	**236,148,750**

Total Critical Projects	12,006,200	7,776,900	5,650,700	11,744,400	**37,727,100**
Total Recommended Projects	6,282,890	27,273,190	18,998,835	29,395,835	**81,345,450**
Total Contingent Projects	109,000	3,379,190	11,288,190	2,578,190	**17,410,970**
Total	**18,398,090**	**38,429,280**	**35,937,725**	**43,718,425**	**136,483,520**

Ten Year Capital Improvement Program
Professional Services

	Page	This Project is:	2019	2020	2021	2022 & 2023	Five- Year Total	2024-2028	Ten-Year Total	Funding
Comprehensive Plan	1	Rec.	-	175,000	-	-	175,000	-	175,000	Operating
Historic Resources Survey	3	Contingent	-	15,190	15,190	73,190	103,570	134,000	237,570	Operating
Total			**-**	**190,190**	**15,190**	**73,190**	**278,570**	**134,000**	**412,570**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five- Year Total	2024-2028	Ten-Year Total
General Fund- Operations	-	190,190	15,190	15,190	220,570	-	220,570
General Fund- Debt Financing	-	-	-	-	-	-	-
Grant Financing	-	-	-	58,000	58,000	134,000	192,000
Total	**-**	**190,190**	**15,190**	**73,190**	**278,570**	**134,000**	**412,570**

Project Rating

Critical	-	-	-	-	-	-	175,000
Recommended	-	175,000	-	-	175,000	-	-
Contingent	-	15,190	15,190	73,190	103,570	134,000	237,570
Total	**-**	**190,190**	**15,190**	**73,190**	**278,570**	**134,000**	**412,570**

Comprehensive Plan 2020 $ 175,000 Operating
Professional Services – Community Development

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
This is a new request for 2020

Funding History
N/A

Project Description & Justification
The Village's Comprehensive Plan helps guide the growth and development of the community. The Plan was last rewritten in 1990 and updated in 2000 and further updated with the inclusion of the Village Center Master Plan in 2010.

Since the Village's current Plan was drafted, comprehensive plans have been broadened to include additional detail about sustainability, transportation and circulation, economic development, infrastructure, health and wellness, and culture. Given that Wilmette is a mostly built-out community, these other plan elements are very important when considering how Wilmette should guide growth and development in the next 20-30 years. In addition, all of the current Plan sections should be updated.

The comprehensive plan can be viewed online at:

Project Update
This is a new CIP for 2020

Project Alternative
As was done in 2000, staff can oversee an update to the existing Comprehensive Plan. An update completed by staff will not have the level of detail that a consultant backed plan rewrite would, thus limiting the plan's effectiveness in guiding growth, development and land use decisions for the next 20-30 years.

Operating Budget Impact

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

Historic Resources Survey	2020	$ 15,190	Operating/Grant
	2021	$ 15,190	
- Critical	2022	$ 15,190	
- Recommended	2023	$ 58,000	
x Contingent on Funding			

Original Purchase Date & Cost
This is a new request for 2019

Funding History
N/A

Project Description & Justification

Background
The Historic Preservation Commission (HPC) instituted the creation of three Historical and Architectural Surveys of Wilmette neighborhoods between 1991 and 1995. Dixon & Associates were retained to survey the areas of East Wilmette, Gross Point, and Indian Hill Estates and Environs. Each survey page contains a photograph, address, listing of style, date of construction, builder, and architect, and an evaluation of its potential for listing as a local landmark or as a structure on the National Register of Historic Places. The hard copies of the Surveys are available for public use at Wilmette Village Hall in the Department of Community Development and at the Wilmette Historic Museum at 609 Ridge Road.

The Surveys have proved to be an exceptionally valuable resource for the community. The Surveys provide literally a snap shot in time. Given the increase of teardowns, a permanent record provides historical data to help in policymaking decisions. The Surveys provide a professional rating of a structure, which is relied on heavily to make a determination for local landmark status and for determining the boundaries of a possible historic district. The data provided on the style and construction has helped homeowners research their home. This in turn leads to an appreciation for historic preservation and further investment in the community.

The Secretary of the Interior's standard threshold for consideration for landmark status is the structure be at least 50 years old. A large portion of the unsurveyed area of Wilmette was constructed after World War II. Therefore these homes are now reaching the point where their historical and architectural value is coming of age. It is the HPC's desire to begin gauging the value of these homes for future protection for the Village and its residents.

A summary of the previously completed surveys and Village map are attached for reference.

Proposal
Conduct a three phase study that would complete the Historical and Architectural Surveys of the Village of Wilmette. In Phase I a consultant would conduct a house by house study of the area west of Skokie Boulevard. Each Structure would be photographed and entered into a database. Each structure's building permits would also be researched and included in the database, and would then

be evaluated on historical and architectural significance with a consideration of its importance as it nears the 50 year age mark.

There are 1,519 structures in this part of the Village and the estimated cost per structure is $30. A bound version of the survey, similar to the existing surveys, would be provided along with multiple digital copies. Approximate cost is $45,570.

Phase II would extend this same process to the rest of the Village– that part that lies east of Skokie Boulevard. In addition to completing unsurveyed areas east of Skokie, this phase would update the existing 30 year old survey and cover approximately 5,736 structures. The expectation is that several years of grant funding would be required to complete this phase of survey. Grant funding is allocated annually and Village staff will apply annually for funding until all phases are complete. The scope and timing of the project will depend on available grant funding. Approximate cost is $172,000.

Phase III would be an intensive survey and report that would look at the subdivision history and look at potential historic district boundaries in both areas covered by phases I and II. Funding for Phase III will be requested upon the successful completion of Phase I and Phase II. Approximate cost is $20,000

This request is based on a consultant's cost estimate of $30 per house for phases I and II.

Grant Funding

Matching grants of federal funds made available by the National Park Service, through the Illinois State Historic Preservation Office are available to Certified Local Governments in Illinois, including the Village of Wilmette. CLG Grants are available to reimburse participating CLG communities for funding projects that focus on Survey, Public Education, Planning, and National Register of Historic Places Nominations. If awarded the CLG grant, the Village will be reimbursed 70 percent of the project cost.

Project Update

This is a new CIP for 2020

Project Alternative

Due to the scope of the project, staff does not have the time or resources to complete the survey. There is no alternative to completing the project.

Operating Budget Impact

Is this purchase _____ routine or ___X__ non-routine?

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 2019:

Improvement	Cost of Improvement	Funding Source	This Project is:
Carpeting Replacement	33,000	Operating	Recommended
Garage Ramp Replacement	19,800	Operating	Recommended
Village Hall Server Room HVAC	17,500	Operating	Recommended
Garage Floor Rehabilitation	101,000	Operating	Recommended
Server Room HVAC	11,000	Operating	Recommended
HVAC Compressor Replacement	18,500	Operating	Recommended
Parking Lot Restoration – VH	70,000	Operating	Contingent
Electric Vehicle Charging Station	18,000	Operating	Contingent
Total	**$288,800**		

Ten Year Capital Improvement Program
Public Facilities Summary

Facility Improvements	Page	This Project is:	2019	2020	2021	2022 & 2023	Five- Year Total	2024-2028	Ten-Year Total	Funding
VILLAGE WIDE										
Roofing	1	Rec.	-	548,900	-	-	548,900	-	548,900	Bond
Security Enhancements	3	Rec.	-	25,000	37,500	22,500	85,000	-	85,000	Operating
Electric Vehicle Charging Station	5	Contingent	18,000	-	-	-	18,000	-	18,000	Operating
VILLAGE HALL										
Garage Floor Coating	7	Rec.	-	60,000	39,000	80,000	179,000	-	179,000	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
Village Hall Server Room HVAC	12	Rec.	17,500	-	-	-	17,500	-	17,500	Operating
Parking Lot Restoration	14	Contingent	70,000	-	-	-	70,000	-	70,000	Operating
Interior Painting	15	Contingent	-	70,000	-	-	70,000	-	70,000	Operating
Village Hall Facility Improvements	16	Contingent	-	-	-	1,675,000	1,675,000	-	1,675,000	Bond
POLICE DEPARTMENT										
Window Replacement	17	Rec.	-	40,000	-	-	40,000	-	40,000	Operating
New Police Station	19	Rec.	-	-	-	-	-	22,000,000	22,000,000	Bond
FIRE DEPARTMENT										
Garage Floor Rehabilitation	21	Rec.	101,000	-	-	-	101,000	-	101,000	Operating
Fire Station #27 Boiler Replacement	23	Rec.	-	78,000	-	-	78,000	-	78,000	Operating
Fire Station #27 Window Replacement	24	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	25	Rec.	11,000	-	-	-	11,000	-	11,000	Operating
HVAC Compressor Replacement	27	Rec.	18,500	18,500	-	-	37,000	33,000	70,000	Operating
Total			**288,800**	**925,400**	**106,500**	**1,777,500**	**3,098,200**	**22,045,000**	**25,143,200**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five- Year Total	2024-2028	Ten-Year Total
General Fund- Operations	288,800	376,500	106,500	102,500	874,300	45,000	919,300
General Fund- Debt Financing	-	548,900	-	1,675,000	2,223,900	22,000,000	24,223,900
Grant Financing	-	-	-	-	-	-	-
Total	**288,800**	**925,400**	**106,500**	**1,777,500**	**3,098,200**	**22,045,000**	**25,143,200**

Project Rating

Critical	-	-	-	-	548,900	-	548,900
Recommended	200,800	805,400	106,500	102,500	666,300	-	666,300
Contingent	88,000	120,000	-	1,675,000	1,883,000	22,045,000	23,928,000
Total	**288,800**	**925,400**	**106,500**	**1,777,500**	**3,098,200**	**22,045,000**	**25,143,200**

Roofing (excludes C.P. Dubbs Water Plant and Water Pumping Facilities)
Public Facilities–Village-Wide

		2020	$548,900	Bond
X	Critical			
-	Recommended			
-	Contingent on Funding			

Original Purchase Date & Cost
N/A

Funding History

2018 - $169,675 -Roof Replacement at Historical Museum
2017 - $518,478 -Roof Replacement at Village Hall
2015 - $215,535 -Roof Replacement at Police Department

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 2020 - $548,900: Roof Replacement at the Public Works Facility truss garage ($388,100 -Roof Area 1) and flat portions ($160,800 –Roof Area 2) over the department storage areas. The truss garage roof is recommended for replacement in 2020 based on findings from a survey conducted by a roofing consultant in July 2016. While the truss garage was constructed in the 1950s, the existing roof is not original to the building (approx. 20-25 years of age). Roof Area 1 is comprised of a granule surfaced modified bitumen cap sheet installed over an existing smooth built-up roof system. Likewise, Roof Area 2 is comprised of an aggregate surfaced built-up roof. The existing roof area(s) 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.

No additional roof replacements are recommended over the upcoming 10-year period.

Project Update

The budget projection was updated from a roof survey conducted in July 2016 and reflects a 5% increase for labor and material costs (2.50% in 2017 and 2018). 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 at a projected savings of 50% as compared to the cost of a complete

tear-off and new installation. Rehabilitation provides 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 at greater cost (150-200%) than a conventional style roof. Temporary repairs are not recommended on the barrel truss roof at the Village Yard because of their respective ages. Temporary repairs are possible for the Historical Museum roof when active leaks develop.

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	2020	$25,000	Operating
Public Facilities–Village-Wide	2021	$37,500	
	2022	$22,500	

- Critical
X Recommended
- 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.

2020 – 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.

2021 – 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.

2022 – 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

Electric Vehicle Charging Station 2019 $18,000 Operating

Public Facilities–Village-Wide

- Critical
- Recommended

X Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

Example of a pedestal-mounted, two-port charging station, courtesy Carbon Day Automotive.

This request is to purchase and install an Electric Vehicle Charging Station in downtown Wilmette.

This charging station shall be weatherproof, commercial grade and can be wall- or pedestal-mounted with one or two charging ports. The station shall have retractable cables to prevent trip hazards, freezing to the ground, or damage from being run over by vehicles. Village staff would be able to remotely access the station for troubleshooting and diagnostics, and the station is able to remain functional if connection to the network is lost.

The charging station would be accessible to the public 24-hours a day, but may be subject to existing parking time restrictions. Global charging stations are compatible with all electric vehicle models. Depending on the type of battery, charging time can range anywhere from about 30 minutes to a full day. The Village would set the rate and determine if users would pay for the station per hour or per session. Users would be able to pay via multiple methods, potentially including credit card or smartphone. The Village would recover all revenue generated from the charging station, which would pay for ongoing annual costs.

Pedestal-mounted charging stations typically have a higher installation cost than wall-mounted units. Additionally, dual-port stations cost more than single-port stations. A data plan would be required, and would be an ongoing annual cost. Limited-time warranty costs are typically included with the purchase of a charging station; extended warranties can be added for an additional cost at the time of purchase. If approved, staff recommends issuing an RFP to ensure competitive pricing.

Currently, nearby electric vehicle charging stations are located on Central Street in Evanston, on Golf Road in Skokie, and on Willow Road in Northfield. Positioning an electric charging station in the Central Business District may have ancillary benefits, such as attracting customers to local businesses and restaurants while their car is charging.

Project Update

This is a new project request as part of the 2019 CIP Budget.

Project Alternative

This project can be deferred until later year(s).

Operating Budget Impact

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

NON-ROUTINE	
Maintenance Costs	$250 per year
Personnel Costs	None
Training Costs	None

Garage Floor Coating	2020	$60,000	Operating
	2021	$39,000	
	2022	$80,000	

Public Facilities

- \- Critical
- X Recommended
- \- Contingent on Funding

[Public Works Facility-Fleet Garage]
$60,000

[Public Works Facility-Wash Bay]
$39,000

[Village Hall Garage Floor]
$80,000

Original Purchase Date & Cost
N/A

Funding History
N/A

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 – Fleet Maintenance (2020), Wash Bay (2021) and the Village Hall (2022). The Fleet Maintenance garage floor was added to the 2019 CIP Budget after recent completion of the in-ground vehicle hoists project ($211,294, YR 2018). The existing concrete floor (approximately 11,000 sq. feet) is original to the garage and has been painted on several occasions but never coated with an epoxy floor product. Floor paint is short lived and less durable as compared to an epoxy floor coating which also provides a higher level of protection. Likewise, the floor at the Public Works Facility– Wash Bay (manual and automated sides) is original to its construction in 2009; however, the floor was never coated and has been exposed to premature aging and wear and tear from continual vehicle wash cycles and salt residue from each winter season. Lastly, 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

The Fleet Garage floor was newly added as part of the 2019 CIP Budget process whereas the Wash Bay Facility and Village Hall Garage floor have been deferred from 2019 and 2020 to 2021 and 2022 respectively.

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

Carpeting Replacement	2019	$33,000 (Village Hall- first floor, 50%)	Operating
Public Facilities - Village Hall	2020	$35,000 (Village Hall- first floor, 50%)	
	2021	$30,000 (Village Hall- second floor, 100%)	

- 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 8 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 ___X___ *routine* or ____ *non-routine?*

NON-ROUTINE	
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 was 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

Village Hall Server Room HVAC 2019 $ 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 project was deferred in 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

Parking Lot Restoration 2019 $70,000 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. Staff will be applying for a green infrastructure grant through MWRD to incorporate permeable pavement or pavers in conjunction with the parking lot rehabilitation.

Project Update

This project was deferred from 2018 to 2019 and includes a 3.00% increase (or $2,000).

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 $165,000. 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 2020 $70,000 Operating
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 to 2020.

Project Alternative

Deferring this project further will result in the deterioration of the walls and doors. As an alternative, interior painting could be phased in over 2-3 years instead of one large project. For example, the phasing could include: 1) front counter areas 2) hallways or common areas 3) individual offices 4) conference rooms. However, potential cost savings from a larger project (i.e. economies of scale) may be lost.

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 2022 $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

Project has been deferred to 2022.

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
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

New Police Station 2026 $22,000,000 Bond

CIP Category and Location

- \- Critical
- X Recommended
- \- Contingent on Funding

Original Purchase Date & Cost

1968	$400,000
1986 Addition	$600,000

Funding History

N/A

Project Description & Justification

The current police facility was opened 50 years ago, in 1968. The cost of construction was $400,000 and the building provided 16,632 square feet of space. There were 38 Police Officers and 6 civilians employees. In a published report at the time, the Village Manager said the new facility was built to meet the needs of the Wilmette Police for the next 25 years. His projection proved fairly accurate. In 1986 an addition was added to the south end of the facility, providing a female locker room, sally port for prisoner intake, additional offices, a fitness facility, and additional storage space for records and evidence. This addition cost $600,000 and provided an additional 3,500 square feet of space. At that time there were 43 Police Officers and 20 civilian employees.

Space need studies were conducted in 2002 and 2007 and approximately 50,000 square feet was recommended to meet the needs and service levels of the community. An increased need for space to improve function, workflow, circulation, and security were all acknowledged. Additionally, upgrades were identified to bring the facility into compliance with regulatory requirements and recommendations. Evidence in all major crimes must be stored indefinitely. Existing jail cells do not meet minimum standards. The existing facility is not ADA compliant. Workstations do not meet OSHA standards, and existing ventilation and filtering systems fail EPA regulations. State and local building codes requirements have also intensified.

In 2018, there are 44 sworn officers and 22 civilian employees. The department makeup is 23% female, including both sworn and civilian employees. In addition to employee demographic changes, service expectations and technological advances also drive the need for a new facility. Some of the deficiencies include:

- The public entrance is not clear or easy to find.
- Privacy space for citizens making reports.
- The Police Department is the Village's designated Emergency Operations Center. More space is required and should be specifically equipped for emergency management.
- Currently, clients must walk through the building and secure areas to meet with the social worker. This defeats the intent of having confidential meetings with residents.
- Inadequate parking on this site.

- The Communications Center is too small.
- The women's and men's locker rooms are too small.
- Nine supervisors share office space with other people. Only the chief and two deputy chiefs can meet privately with employees.
- There is no conference room for group meetings.
- Accessible space is needed for public meeting and training purposes. Presently, meeting attendees must travel through secured work area to reach the basement meeting room and the room is not easily accessible to persons with a disability.
- Space and layout for criminal and juvenile investigations are inadequate.
- Currently there is only one private interview room in the entire station.
- Evidence processing and storage space required.
- Indoor parking for Village vehicles
- Indoor firing range.

Project Update
A Land Use Study in 2023 and update Space Needs Study in 2024 will be required. However, costs are unknown at this time.

Project Alternative
Expanding existing structure. This presents significant issues as it will not adequately address space, parking, work flow, technological issues or security requirements.

Operating Budget Impact

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

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

Garage Floor Rehabilitation	2019	$39,000 (Station 27) $62,000 (Station 26)	Operating
Public Facilities–Fire Station			

- 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.

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 2020 $78,000 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

The budget amount was reduced from $118,000 to $78,000 after review of project estimates from area vendors. This project has been deferred since 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 2019 $ 11,000 Operating
Facilities- Public Works Facility

- Critical
x Recommended
- Contingent on Funding

Original Purchase Date & Cost
N/A

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 level).

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; more importantly, it has had numerous refrigerant leaks. The table denoted below includes a historical cost summary of repairs.

Year	2018	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 project was deferred from 2018.

Project Alternative

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

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

HVAC Compressor Replacement	2019	$18,500	Operating
Public Facilities	2020	$18,500	

- 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	$9,250
2	2008	2020	$9,250
3	2008	2019	$9,250
4	2007	2020	$9,250

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. The SCBA replacement is financed through the Capital Equipment Replacement Fund.

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 2019:

Equipment	Cost of Equipment	Funding Source	This Project is:
Protective Clothing Extractor	20,000	Operating	Critical
SCBA	234,000	CERF	Recommended
Fire Station Alerting Equipment	56,400	Operating	Recommended
Salt Brine Machine	71,000	Operating	Recommended
Total	**$381,400**		

Ten Year Capital Improvement Program
Equipment Summary

Equipment Summary	Page	This Project is:	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
POLICE DEPARTMENT										
Upgrade for Next Generation 9-1-1	1	Rec.	-	15,000	-	-	15,000	-	15,000	Operating
Server for In-Car Camera System	2	Rec.	-	-	-	20,000	20,000	20,000	40,000	Operating
Portable Radios	N/A	Rec.	-	-	-	-	-	400,000	400,000	Operating
FIRE DEPARTMENT										
Protective Clothing Extractor	4	Critical	20,000	20,000	-	-	40,000	-	40,000	Operating
Self Contained Breathing Apparatus	6	Rec.	234,000	-	-	-	234,000	-	234,000	CERF
Fire Station Alerting Equipment	8	Rec.	56,400	-	-	-	56,400	-	56,400	Operating
PUBLIC WORKS										
Salt Brine Machine	10	Rec.	71,000	-	-	-	71,000	-	71,000	Operating
Total			**381,400**	**20,000**	**-**	**20,000**	**421,400**	**420,000**	**841,400**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total
General Fund- Operations	147,400	20,000	-	20,000	187,400	420,000	607,400
Capital Equipment Replacement Fund (CERF)	234,000	-	-	-	234,000	-	234,000
General Fund- Debt Financing	-	-	-	-	-	-	-
Total	**381,400**	**20,000**	**-**	**20,000**	**421,400**	**420,000**	**841,400**

Project Rating

Critical	20,000	20,000	-	-	40,000	-	40,000
Recommended	361,400	-	-	20,000	325,000	420,000	745,000
Contingent	-	-	-	-	56,400	-	56,400
Total	**381,400**	**20,000**	**-**	**20,000**	**421,400**	**420,000**	**841,400**

Upgrade for Next Generation 9-1-1 2020 $ 15,000 Operating

Equipment - Police

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
2014 - $116,809

Funding History
In 2014, a fully IP (internet protocol) server based 9-1-1 telephone system was purchased to replace a twenty-three year old analog 9-1-1 system at the police department.

Project Description & Justification
The current national 9-1-1 network lacks the ability to accurately locate wireless and VoIP (Voice over Internet Protocol) calls, receive text messages, or images/video. A new nationwide NG 9-1-1 (Next Generation 9-1-1) network is in the process of being developed. The State of Illinois has hired a consultant to design and implement a statewide ESI (Emergency Services Information) network. An ESI network will provide secure, mission critical high speed connectivity needed to carry NG 9-1-1 voice calls and data.

Project Update

At such time that an ESI net has been deployed by the State of Illinois (2020 or beyond) there will be a software upgrade and configuration required in order for our current 9-1-1 telephone system to function on the NG 9-1-1 network. Some or all of these costs may be funded by the state 9-1-1 authority.

Project Alternative

Delay the upgrade and continue to use the current 9-1-1 telephone equipment without benefiting from NG 9-1-1 capabilities.

Operating Budget Impact

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

NON-ROUTINE	
Maintenance Costs	Maintenance is funded from account: 11434020-422300 Maintenance E-911 System
Personnel Costs	None
Training Costs	None

Server for In-Car Camera System 2023 $ 20,000 Operating
Equipment - Police

- 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 2018, the server and DVD robot burner were replaced and installed.

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 2023, 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

Protective Clothing Extractor- Washer & Dryer	2019	$ 20,000	Operating
Equipment - Fire	2020	$ 20,000	

X Critical
\- 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/ extractors that have capacity for one set of gear with washer/extractors with a capacity of 5 sets of gear. The department request to 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/ extractors are 17 and 19 years old. The washers/extractors are obsolete and with age are no longer efficient in being able to decontaminate personal protective equipment. If repairs are needed, some machines parts are no longer available or costly to obtain. The current gear extractors are only able to wash one set at a time. The department is looking to purchase 2, 5 set gear extractors. 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 which can take up to 24 hours as opposed to a gear dryer which will take only one hour. Following a recent house fire over 10 sets of gear were required to be washed and dried. With the current equipment, crews were forced to utilized limited spare and off duty personal protective gear while contaminated gear was washed. This process took 3 days and some of the gear was still damp after hang drying for that time. Due to any contaminates from exposure to fire and chemicals, firefighting personal protective gear cannot be washed in standard wash machines. Department policy states that any gear contaminated by exposure to fire/smoke conditions, hazardous materials, or biohazard must be taken out of service immediately.

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 which was denied. In 2018 the fire department applied for a grant through the Illinois Office of State Fire Marshall (OSFM) for 2 gear dryers. To date, the status of the grant is in process and undetermined. Due to the age of the equipment, the limited availability of spare gear and updated policies, the fire department has moved this request from recommended to critical. The cost includes moving the equipment from the living quarter's area to the apparatus floor thus limiting contamination of the living quarters. 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 CERF

Equipment – Fire

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
2008 - $166,120

Useful Life- 10 years
Current Life- 11 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), 2 squad/Rescue trucks (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. Without a doubt, self-contained breathing apparatus (SCBA) is the most important and widely used tool in the fire service today. Its use has greatly expanded the capacities of firefighters when performing fire attack and searches or hazmat and technical rescue operations while successfully reducing the number of firefighter fatalities and injuries related to inadequate respiratory protection. The current standard requires SCBA equipment to meet NFPA 2012 standards, and in 2018 it is anticipated that a revised standard will be adopted. Therefore, in 2019 we will be behind two NFPA standards (2012 and 2018), 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 low air alarm. Interoperability of rescue air connections across all manufactures will also be implemented. Currently, our bottles have the low air alarm sound 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. In order to be competitive in the Assistance to Firefighting Grant process (AFG) the SCBA need to be out of compliance by 2 cycles, (2012 and 2018). This will not happen until August of 2018. The next anticipated AFG grant process will be early 2019.

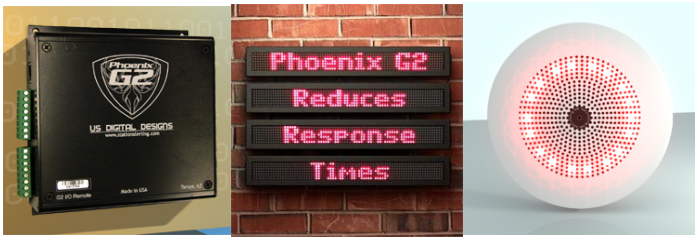
Is this purchase _____ *routine* or __X__ *non-routine?*

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.

Fire Station Alerting Equipment 2019 $ 56,400 Operating

Equipment - Fire

- Critical
x Recommended
- Contingent on Funding



Original Purchase Date & Cost
November 2007

Funding History
N/A

Project Description & Justification
This is a request for replacement of the existing station alerting receivers.

The fire department is one of 14 member agencies dispatched by the Regional Emergency Dispatch (RED) Center. Prior to starting service with RED Center, Zetron Model 6/26 transponders were installed at each fire station and were connected to RED Center via leased copper phone lines. The Zetron equipment provided an audio alerting interface into the public address (PA) system at each station. This is the primary means of emergency notification from dispatch to firehouse.

The current system is considered to be legacy equipment, with limited repair/replacement parts available. The system also requires a connection to the dispatch center using two copper phone lines provided by ATT. The monthly cost of these phone lines have increased from $200.00 per line in 2010 to $478.00 in 2018. This year, the projected annual cost for both lines will be $11,472.00. Based on the average increase from 2010 to present, the current annual cost is expected to increase to $14,960 in 2022. With the annual projected increases, it is estimated that this project will become cost neutral by 2022 with a $50,000 savings by 2025.

The repair of these copper lines can only be conducted by ATT personnel and have proven to be unreliable in servicing the aging lines. On May 27th of this year, the copper line from RED Center to Fire Station 27 went down not allowing the Zetron System to communicate and dispatch. This forced the fire department to utilize a backup radio notification system which also suffered periodic failure during the primary copper line outage. The Fire Department alongside Village Administrative services, Red Center, and a 3rd party radio vender, made repeated attempts to have ATT repair the phone circuit. ATT was not able or willing to restore service to Station 27 until June 5th and required 3 technicians at 3 different locations a full day to accomplish the repair once on site. A switched circuit at the Northbrook central station was determined to be the reason for the 10 day outage.

The proposed station alerting equipment will use current internet connections to the dispatch center. This equipment, in its basic configuration, will provide greater reliability and reduced

operating expenses as the former leased lines would no longer be necessary. In early 2017, an initiative to reduce overall response time was implemented. Emergency calls taken in at the Wilmette Police Department were transferred to RED Center per standard procedures. The police dispatcher would then send a pre-alert signal to both fire stations while call information was processed at RED Center. This new procedure has reduced overall response times significantly. Due to current equipment limitations, this pre-alert is only done between the hours of 7am and 10pm. With the proposed equipment, this computer generated pre-alert could be transmitted immediately by RED Center 24 hours a day to individual fire stations. This would allow us to decrease response times in the overnight hours as well.

The current dispatch provider, RED Center, is upgrading its alerting platform to the U.S. Digital Designs Phoenix G2 system.

Project Update
This is a new CIP item for 2019.

Project Alternative
Continue to use the existing Zetron Model 6/26 transponder and other analog components without a supply of contingent replacement or repair parts. Continue to incur the increasing expense of leased copper phone lines from the current phone vendor.

Operating Budget Impact

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

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

Salt Brine Machine (Automatic) 2019 $71,000 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 project includes purchase of a salt brine maker, auto truck fill system and small utility building, 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 $61,000 to $71,000 for inclusion of a small utility building (8' by 8' by 8') to protect electrical equipment and pump controls from elements. The utility building will be insulated (i.e. floor to ceiling) and include a small electric heater for use during winter months.

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 Administrative Services 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 2019 include:

Project	Cost of Improvement	Funding Source	This Project Is:
GIS Hardware and Software	41,000	GF/WS	Recommended
Document Management & Scanning	31,000	CERF	Recommended
Total	**$72,000**		

Ten Year Capital Improvement Program
Information Technology Summary

Information Technology	Page	This Project is:	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
GIS Hardware and Software	1	Rec.	41,000	14,000	21,000	42,000	118,000	105,000	223,000	GF & W/S
Document Management & Scanning	3	Rec.	31,000	-	-	-	31,000	-	31,000	CERF
Council Chambers AV Upgrade	5	Rec.	-	-	80,000	-	80,000	-	80,000	Operating
Total			**72,000**	**14,000**	**101,000**	**42,000**	**229,000**	**105,000**	**334,000**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total
General Fund- Operations	13,667	4,667	87,000	14,000	119,333	35,000	154,333
Capital Equipment Replacement Fund (CERF)	31,000	-	-	-	31,000	-	31,000
Water Fund	13,667	4,667	7,000	14,000	39,333	35,000	74,333
Sewer Fund	13,667	4,667	7,000	14,000	39,333	35,000	74,333
Total	**72,000**	**14,000**	**101,000**	**42,000**	**229,000**	**105,000**	**334,000**

Project Rating

Critical	-	-	-	-	-	-	-
Recommended	72,000	14,000	101,000	42,000	229,000	105,000	334,000
Contingent	-	-	-	-	-	-	-
Total	**72,000**	**14,000**	**101,000**	**42,000**	**229,000**	**105,000**	**334,000**

GIS Hardware and Software	2019	$ 41,000	GF and W/S Operating
IT – Engineering	2020	$ 14,000	
	2021	$ 21,000	
	2022	$ 21,000	
	2023	$ 21,000	

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
N/A

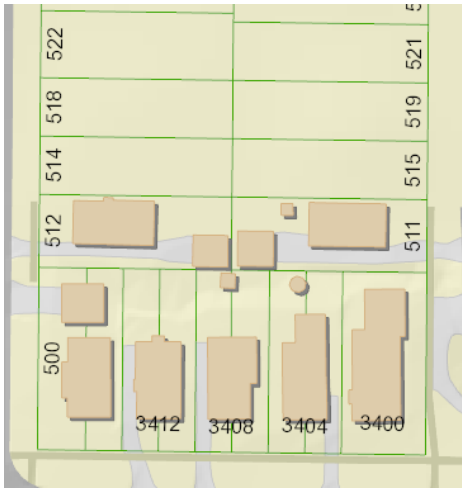
Funding History
2018 – $52,500

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 2019 and 2021 – 2023.

The digital aerial photography and planimetric mapping ($52,500) is scheduled to be completed in 2018. The requested funds for 2019 provide for contour mapping ($41,000). 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. 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 2021-2023 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 2019 $ 31,000 CERF

IT - Information Technology

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History
2018 - $34,350
2017 - $47,250

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 three 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. 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 was approved by the Village Board. Completion of the project is taking longer than anticipated and will continue into 2019. 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.

Council Chambers Audio/Visual Upgrade 2022 $ 80,000 Operating

IT - Information Technology

- \- Critical
- X Recommended
- \- Contingent on Funding

Original Purchase Date & Cost
2010 - $289,302

Funding History
N/A

Project Description & Justification
The Village has audio/visual equipment in the Council Chambers of the Village Hall that is used to broadcast live meetings on Wilmette Community Television Channel 6. Equipment includes cameras, microphones, server, audio and visual switchers and mixers, and other equipment. The equipment was originally purchased and installed in 2010.

In the last five years, the equipment has seen an increase in the amount of maintenance work needed to maintain the system. During this time, approximately $14,000 has been spent on repairs and new equipment.

Project Update

The equipment is reaching the end of its useful life of approximately 10 years.

Project Alternative
The alternative is to complete repairs as they are needed. However, should a critical piece of equipment breakdown, broadcasting of meetings may not be possible until a repair is completed.

Operating Budget Impact

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

NON-ROUTINE	
Maintenance Costs	None
Personnel Costs	No additional personnel are required for this program.
Training Costs	One-time training costs are included in the first year cost.

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 2019.

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 –Includes Locust Road, Central Ave., and Skokie/Lake Intersection	2,617,400	Operating/MFT /Grant	Critical
Alley Maintenance Program	552,100	Operating	Critical
Brick Street Renovation Project	627,200	Operating	Critical
Preventative Maintenance Program	149,100	Operating	Critical
Brick Street Repair	140,000	Operating	Critical
Sidewalk Replacement Program	74,200	Operating	Critical
Pavement Marking Program	53,000	Operating	Critical
Curb Replacement Program	43,400	Operating	Critical
Replacement of North Bridge Sidewalk	318,400	Bond	Recommended
Street Light Pole Painting	37,105	Operating	Recommended
Street Light Pole Purchase	28,235	Operating	Recommended
Total:	**$ 4,640,140**		

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

Streets, Sidewalks and Alleys	Page	This Project is:	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
Street Resurfacing Program	1	Critical	2,617,400	1,895,900	2,435,200	4,467,400	11,415,900	12,000,000	23,415,900	Operating/MFT
Locust Road Reconstruction	9	Critical	Cost included in Street Resurfacing			-	-	-	-	Grant
Central Avenue Reconstruction	11	Critical	Cost included in Street Resurfacing			-	-	-	-	Grant/Operating
Skokie/Lake Intersection Improvements	13	Critical	Cost included in Street Resurfacing			-	-	-	-	Grant
Alley Maintenance Program	15	Critical	552,100	508,300	551,400	1,136,000	2,747,800	3,183,300	5,931,100	Operating
Brick Street Renovation Project	17	Critical	627,200	507,200	359,700	1,331,500	2,825,600	2,966,880	5,792,480	Operating
Preventative Maintenance Program	19	Critical	149,100	153,200	157,500	327,900	787,700	524,900	1,312,600	Operating
Brick Street Repair	23	Critical	140,000	144,500	149,000	310,500	744,000	317,800	1,061,800	Operating
Sidewalk Replacement Program	27	Critical	74,200	76,300	78,400	163,100	392,000	434,000	826,000	Operating
Pavement Marking Program	29	Critical	53,000	54,500	56,000	116,500	280,000	310,000	590,000	Operating
Curb Replacement Program	31	Critical	43,400	44,700	45,900	95,400	229,400	254,000	483,400	Operating
Replacement of North Bridge Sidewalk	33	Rec.	318,400	-	-	-	318,400	-	318,400	Bond
Street Light Pole Painting	34	Rec.	37,105	38,105	39,250	82,065	196,525	220,000	416,525	Operating
Street Light Pole Purchase	36	Rec.	28,235	28,235	29,235	59,470	145,175	30,000	175,175	Operating
RRFB's at Plaza de Lago Pedestrian Crossing	38	Rec.	-	30,000	-	-	30,000	-	30,000	Operating/Grant
Stamped Concrete Paver Replacement	40	Rec.	-	15,500	15,900	33,300	64,700	99,100	163,800	Operating
Streetscape Furniture Purchase	n/a	Rec.	-	-	-	-	-	45,000	45,000	Operating
Decorative/Roadway Street Lights	42	Contingent	-	117,200	42,500	-	159,700	-	159,700	Operating
Skokie Valley Trail	44	Contingent	-	2,735,000	7,748,000	-	10,483,000	-	10,483,000	Grant
West Lake Avenue Ped./Bike Improvements	46	Contingent	-	300,000	1,800,000	-	2,100,000	-	2,100,000	Grant
Streetscape Improvements / Ridge Road	48	Contingent	-	200,000	1,700,000	-	1,900,000	-	1,900,000	Grant
Traffic Calming	49	Contingent	-	9,000	25,000	80,000	114,000	125,000	239,000	Operating
Village Downtown Streetscape	51	Contingent	-	-	-	750,000	750,000	6,000,000	6,750,000	Bond
Total			**4,640,140**	**6,857,640**	**15,232,985**	**8,953,135**	**35,683,900**	**26,509,980**	**62,193,880**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total
General Fund- Operations	3,621,740	4,731,170	3,654,985	4,953,135	16,961,030	17,259,980	34,221,010
General Fund- Debt Financing	318,400	-	-	750,000	1,068,400	6,000,000	7,068,400
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	-	1,476,470	10,928,000	-	12,404,470	-	12,404,470
Total	**4,640,140**	**6,857,640**	**15,232,985**	**8,953,135**	**35,683,900**	**26,509,980**	**62,193,880**

-

Project Rating

Critical	4,213,000	3,339,900	3,787,200	7,852,900	19,193,000	19,736,880	38,929,880
Recommended	427,140	273,740	172,785	270,235	1,143,900	648,100	1,792,000
Contingent	-	3,244,000	11,273,000	830,000	15,347,000	6,125,000	21,472,000
Total	**4,640,140**	**6,857,640**	**15,232,985**	**8,953,135**	**35,683,900**	**26,509,980**	**62,193,880**

Road Program	2019	$2,617,400	Dedicated/MFT
Streets, Sidewalks, and Alleys	2020	$1,895,900	
	2021	$2,435,200	
	2022	$2,208,800	
	2023	$2,258,600	

X Critical
\- Recommended
\- Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

2018	$1,460,993
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. In 2019, Prairie Avenue from Wilmette Avenue to Central Avenue will be reconstructed in brick.

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 be used to fulfill the local share of the Village's federal grant projects.

2019						
Name	**From**	**To**	**Surface**	**Length (ft)**	**Notes**	**Cost Estimate[1]**
Lake/Skokie Phase I	Intersection	Intersection	NA	NA	Grant	$60,000
Central Phase II /ITEP	Green Bay Rd	Sheridan Rd	APC		Grant	$182,920
Locust Rd Phase III Construction	Lake Ave	Wilmette Ave	AC	2,600	Grant	$1,598,260
Valley View Ct	Valley View	Cul-de-sac	AC	220		$30,346
Valley View Dr	Hartzell St	Glenview Rd	AC	777		$112,051
Laurel Ave	Sheridan Rd	West End	AC	689		$103,681
5th St	Gregory Ave	Maple Ave	AC	436		$54,674
5th St	Maple Ave	Greenleaf Ave	AC	1,371		$223,500
Wilmette Ave	Ridge Rd	Green Bay Rd	AC	NA	Area Rehab & Patching	$87,874
Green Bay Road	Isabella St	Lake Ave	AC	NA	Area Rehab & Patching	$87,874
					Total Village Expenditure	$2,541,180
					Adjusted for inflation	**$2,617,400**
2020						
Central Ave Phase III/ITEP Construction	Green Bay Rd	Sheridan Rd	APC	5,478	Grant	$1,788,530
					Total Village Expenditure	$1,788,530
					Adjusted for inflation	**$1,895,900**
2021						
Lake/Skokie Phase III Construction	Intersection	Intersection	NA	NA	Grant	$320,000
Prairie Ave	Central Ave	Washington Ave	ABR2	500		$393,250
Garrison Ave[3]	S. Village Limit	North End	APC	200		$55,176
Manor Dr	Lake Ave	Illinois Rd	AC	1,950		$305,663
Greenleaf Ave	Hibbard Rd	La Vergne Ave	AC	1,276		$200,013
Indian Wood Rd	Lake Ave	Hibbard Rd	AC	1,489		$233,400
Hawthorne Ln	Locust Rd	Cul de Sac	AC	554		$76,419
Cardinal Ln	Illinois Rd	Cul-de-sac	PCC	613		$67,430
Hill St	Hibbard Rd	East End	AC	604		$79,529

Washington	Sheridan Rd	Michigan Ave	AC	361		$49,796
Hunter Rd[4]	Elmwood Ave	Thornwood Ave	PCC	790		$90,376
Kenilworth Ave	21st St	Ridge Rd	PCC	866		$91,450
Greenleaf Ave	Cul de sac	Hibbard Rd	AC	417		$65,365
Pioneer Ln	Old Glenview Rd	Cul de Sac	AC	636		$87,729
Kilpatrick Ave	Hartzell St	Glenview Rd	AC	630		$118,503
				10,886		
					Total Village Expenditure	$2,234,099
					Adjusted for inflation	**$2,435,200**
2022						
Central Ave	Hibbard Rd	Lavergne Ave	AC	1,279		$200,484
Prairie Ave	Washington Ave	15th St	ABR2	350		$318,643
Seminole Rd	Iroquois Rd	End	APC	250		$31,350
Lake Ave	Wilmette Ave	260' E. of 5th St	AC	3,327		$823,981
Elmwood Ave	Hunter Rd	Dartmouth	APC	945		$142,204
4th St	Central Ave	Lake Ave	APC	810		$101,574
20TH St	Central Ave	Highland Ave	PCC	308		$32,525
Ridge Rd[5]	Isabella St	Wilmette Ave	AC	1,249		$281,925
Lilac Ln	Briar Ln	Millbrook Ln	AC	226		$29,757
				7,465		
					Total Village Expenditure	$1,962,442
					Adjusted for inflation	**$2,208,800**
2023						
Prairie Ave[6]	Isabella St	Catalpa Pl	ABR2	725		$658,474
Thornwood Ave	Hunter Rd	Ridge Rd	PCC	2,428		$256,397
Greenleaf Ave	10TH St	Poplar Dr	ABR2	1,144	resurfaced	$258,224
Elmwood Ave	Ridge Rd	Hunter Rd	PCC	2,601		$274,666
Old Glenview Rd	Skokie Blvd	Hibbard Rd	AC	1,407		$247,013
Wilmette Ave	Hibbard Rd	Lawler Ave	AC	1,617		$253,465
				9,922		
					Total Village Expenditure	$1,948,239
					Adjusted for inflation	**$2,258,600**

[1] Estimated costs are based on current 2018 construction pricing and include 10% allocation for 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 6th to 7th is under construction in 2018, 26 blocks remain and another 13 years are needed to complete the very poor ABR streets.
[3] Street improvement requires coordination with Evanston.
[4] Neighborhood Storage Project will move resurfacing to a later year.
[5] Water main replacement and redevelopment of 333 Ridge Road may move resurfacing to 2022.
[6] Traffic calming eligible.

Surface Description
ABR=Asphalt over brick
APC=Asphalt over concrete
AC=Asphalt Street
PCC=Concrete Street

Project Update

Funding amounts for 2019-2023 have been updated.

Project History

In 2018, the following funds were utilized for the Road Program:

MFT:	$700,000
Dedicated Revenues:	$733,418
Sewer Repair	$11,075
Kenilworth IGA	$16,500
Total:	**$1,460,993**

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

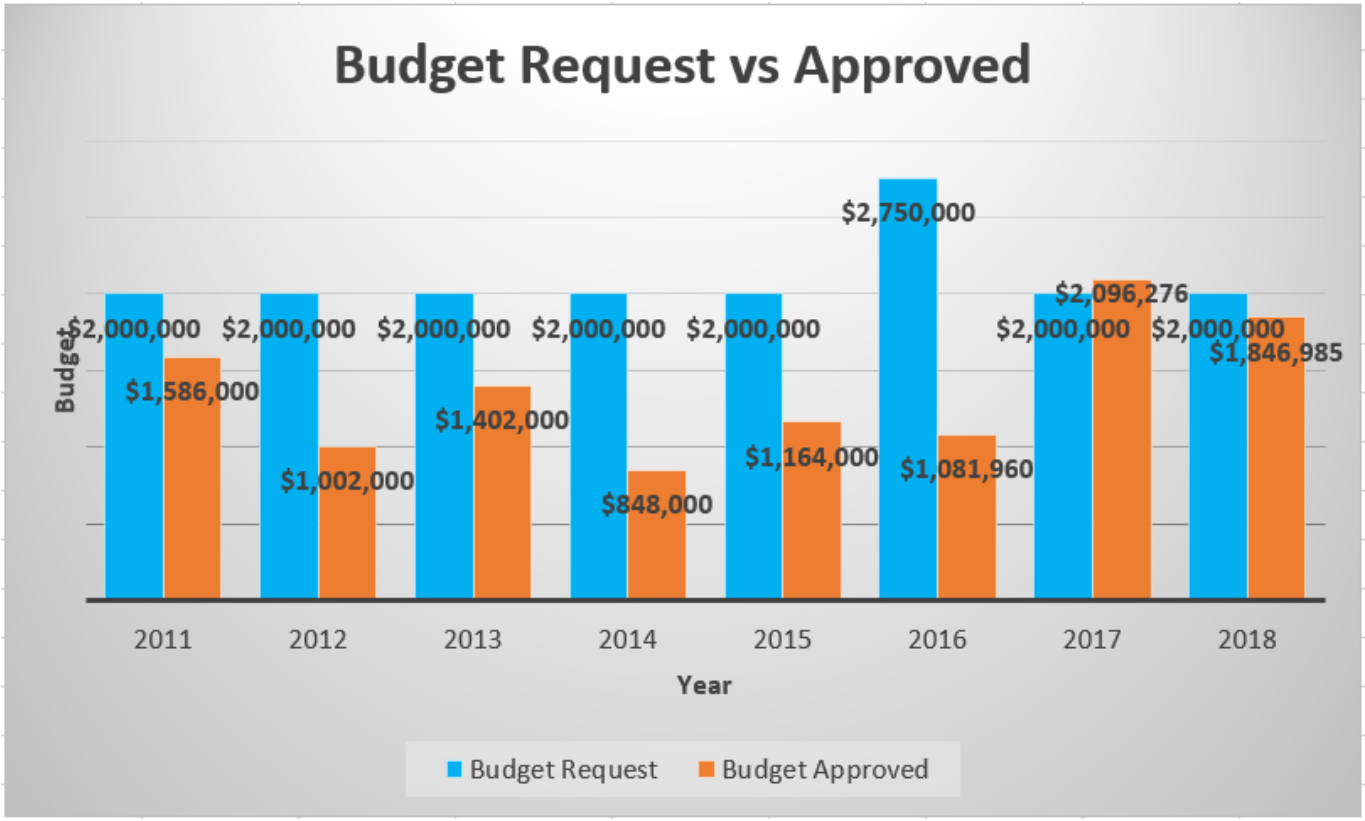
The alternative to pavement rehabilitation is patching on an emergency basis. While patching will slow down the progression of potholes, it creates joints in the pavement that will eventually result in further deterioration. The second alternative is not to perform any roadway maintenance, which will 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.

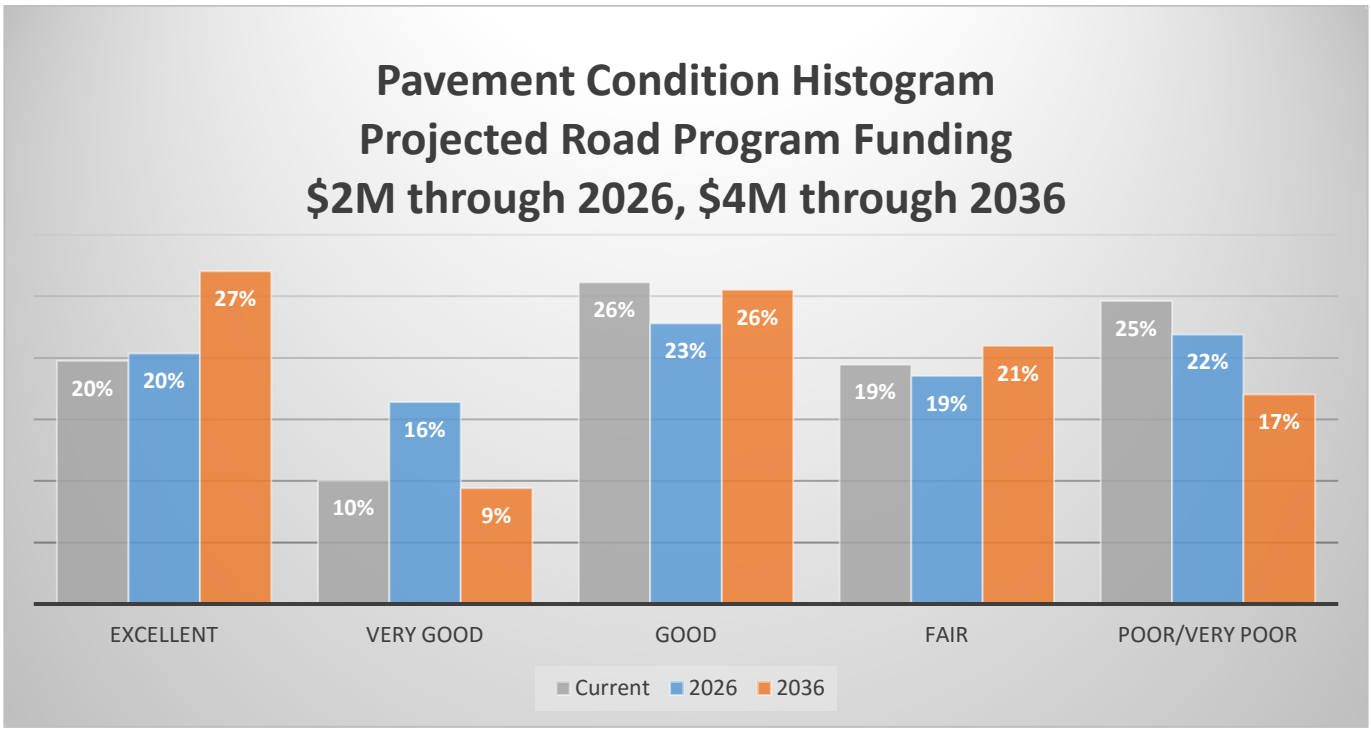
The Village Board approved a Special Service Areas (SSA) policy in 2016 which allows residents to petition for their street rehabilitation to be accelerated at a shared cost.

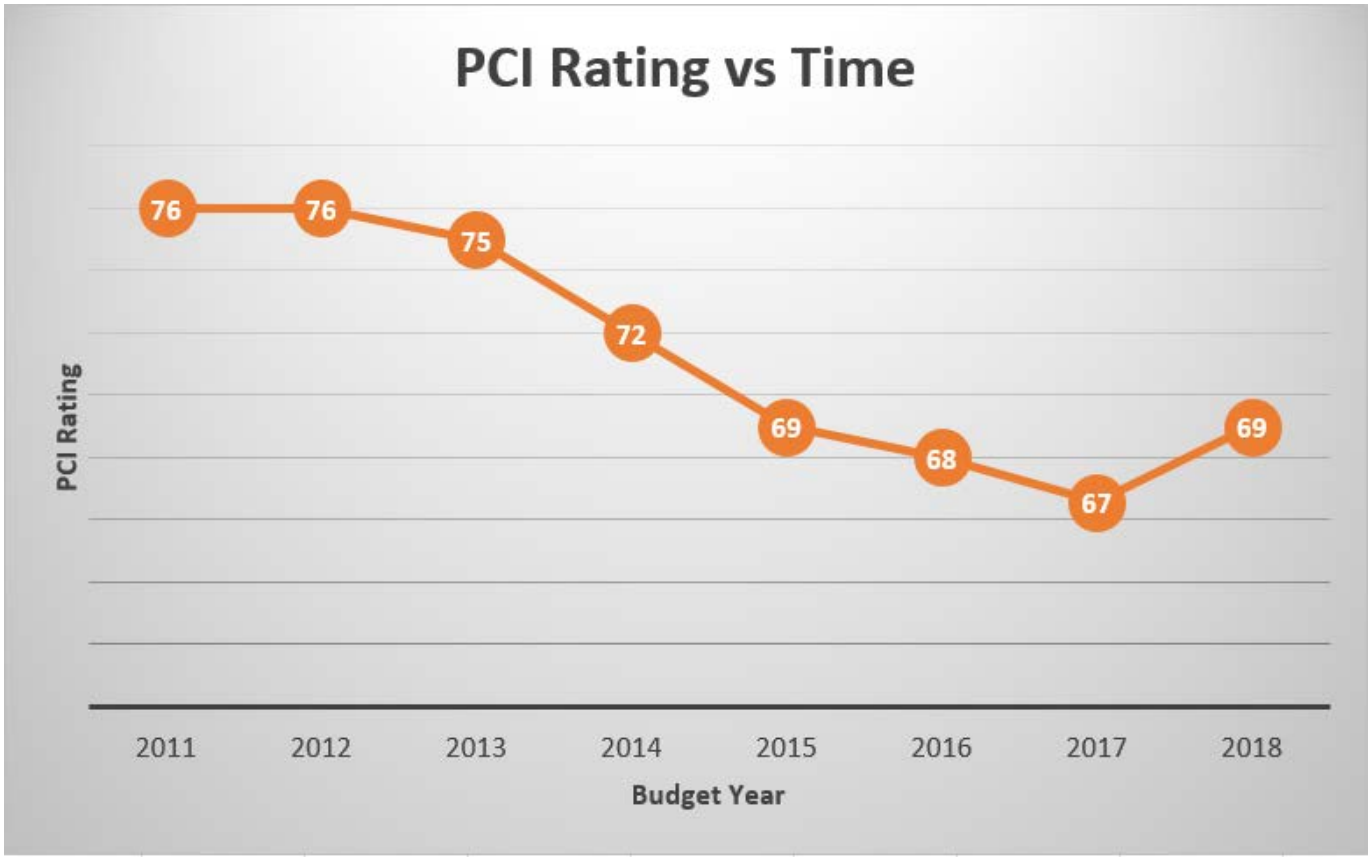
Operating Budget Impact

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
Budget
$2,000,000
$1,586,000
$2,000,000
$1,002,000
$2,000,000
$1,402,000
$2,000,000
$848,000
$2,000,000
$1,164,000
$2,750,000
$1,081,960
$2,000,000
$2,096,276
$2,000,000
$1,846,985
2011
2012
2013
2014
2015
2016
2017
2018
Year
Budget Request
Budget Approved


Pavement Condition Histogram
Projected Road Program Funding
$2M through 2026, $4M through 2036
20%
20%
27%
10%
16%
9%
26%
23%
26%
19%
19%
21%
25%
22%
17%
EXCELLENT
VERY GOOD
GOOD
FAIR
POOR/VERY POOR
Current
2026
2036


PCI Rating vs Time
PCI Rating
76
76
75
72
69
68
67
69
2011
2012
2013
2014
2015
2016
2017
2018
Budget Year

Locust Road Reconstruction	2019	$3,273,240	STP Grant / Operating (Construction & Constr. Eng)

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 are planned.

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. Below is a summary of costs:

Year	Description	Total	Federal Share	Village Share
2018	Phase II	$197,860	$138,500	$59,360
2019	Total Phase III (Const. + CE)	$3,273,240	$1,674,980[1]	$1,598,260 General fund

[1] The current maximum authorized federal share is $1,674,983.

$1,438,298 in Water Main replacement is also included as part of this project in the Water fund section of the CIP.

Project Update

Project costs for 2018-2019 have been updated.

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

Central Avenue Reconstruction & Downtown Streetscape
Streets, Sidewalks and Alleys

STP & ITEP Grant/Operating
2019 $ 609,730 (Phase II)
2020 $ 6,857,260 (Construction & CE)

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 limits of the Downtown Streetscape improvements are Wilmette Avenue from Green Bay Road to Lake Avenue. The scope of work includes sidewalk and curb repairs, landscaping and lighting improvements, pedestrian accommodation enhancements, and other streetscape beautification.

The Central Avenue reconstruction 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. The Downtown Streetscape improvement will be funded through a federal grant which includes 80-percent federal participation for phase III engineering and construction and 30-percent local share. Following is a summary of costs:

Year	Description	Total Cost	Federal Share	Village Share
2019	Phase II	$ 609,730[1]	$426,810	$182,920
2020	Total Phase III (Const. + CE)	$6,857,260	$5,068,730[2]	$1,788,530

[1] Amount the Village will have to pay for Phase II design engineering in 2019; reimbursement is then sought from IDOT for the Federal Share.
[2] The current maximum authorized federal share for total construction is $4,069,630 STP and $999,100 ITEP funds.

$2,077,400 in Water Main replacement is also included as part of this project in the Water fund section of the 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

Skokie/Lake Intersection Improvements — STP Grant/Operating

	2019	$ 60,000 (Phase I)
Streets, Sidewalks and Alleys	2020	$ 78,060 (Phase II)
Skokie-Lake Intersection Improvements	2021	$ 1,393,290 (Construction & CE)

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.

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).

Year	Description	Total Cost	Federal Share	State Share	Local (County) Share[1]	Village Share
2018	Phase I	$20,000	$0	$10,000	$10,000	$0
2019	Phase I Cont.	**$60,000**	$0	$30,000	$30,000	$0
2020	Phase II	**$78,060[2]**	$54,640	$11,710	$11,710	$0
2021	Total Phase III (Const. + CE)	$1,393,290	$751,310[3]	$160,990	$160,990	$320,000[4]

[1] Requires an intergovernmental agreement with Cook County (CCDOTH) and IDOT.
[2] Amount the Village will have to pay for Phase II design engineering in 2019; reimbursement is then sought from IDOT for the Federal & State Shares and the County for the Local Share
[3] The current maximum authorized federal share for construction is $751,310.
[4] 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 and schedule has been revised to show Phase I to be completed in 2019 and Phase II in 2020.

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

Alley Replacement Program

Streets, Sidewalks and Alleys

2019	$552,100	Operating
2020	$508,300	
2021	$551,400	
2022	$553,000	
2023	$583,000	

X Critical
\- Recommended
\- Contingent on Funding

Original Purchase Date & Cost
Unknown

Funding History

Year	Amount	Source	Area (SY)	$/SY
2018	$529,763	Operating	3,675	$144.15
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	Operating	1,685	$162.02
2013	$900,000	Bond	6,350	$141.73
2012	$355,000	Operating	3,010	$117.94
2011	$823,241	Bond	5,660	$145.45

[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.

The definition ratings are as follows:

Rating	Pavement	Drainage
A	Like New	Excellent

Rating	Pavement	Drainage
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 2017. Cost estimates are based upon 2018 alley pricing. As construction pricing continues to increase, the amount of alley reconstruction diminishes and either requires an increase in budget, a reduction in the alley reconstruction or a combination of both.

Alley #	Block	Between	Length	Pavement Rating	Drainage Rating	Cost Estimate[1]
2019						
535 [2]	600	Green Bay/Park	465	E	E	$184,200
417	200	15th/16th	420	E	D	$120,400
414	1200	Gregory/Maple	625	E	C	$247,500
		Total ft	1510		Total:	$552,100
2020						
425	1400	Isabella/Gregory	463	E	C	$188,900
604 [3]	1100	15th/16th	145	D	C	$36,200
512	1900	Birchwood/Schiller	350	D	D	$95,200
204	700	Washington/Lake	450	D	C	$188,000
		Total ft	1408			$508,300
Beyond 2021						
232	800	Linden/Greenleaf	450	D	C	$188,900
127	600	Lake/Forest	426	D	C	$178,900
130	900	Lake/Forest	450	D	C	$183,700
233	900	Linden/Greenleaf	450	D	C	$205,000
212	600	Central/Washington	450	D	C	$201,200
131	1000	Lake/Forest	340	D	C	$146,800
402	500	Linden/Alley 401	370	D	C	$159,700
533	800	Green Bay/Park	630	D	C	$279,500
331	200	Gregory/Crescent	315	C	D	$143,600
534	700	Green Bay/Park	500	D	C	$221,800
613	1600	Forest/Walnut	500	D	E	$172,500
214	700	10th/11 1th	495	D	C	$195,200

Alley #	Block	Between	Length	Pavement Rating	Drainage Rating	Cost Estimate[1]
421	1100	Isabella/Alley 422	192	D	C	$53,600
501	1500	Alley 503/Lake	500	D	C	$202,400
416	1400	Gregory/Maple	463	C	D	$210,900
						$2,743,700
307 [4]	800	Alley 320/Linden	450	B	C	$101,200

[1] Estimated costs are based on current 2018 construction pricing and include 10% allocation for engineering (soft) costs (such as pavement cores, topography, or material testing).
[2]Delayed due to construction 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. 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. At the current funding level, all failed alleys will be completed by 2020. Alleys currently rated as poor are estimated to be rehabilitated by 2025.

Green Alleys
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 2019 Alley Reconstruction Program as well all future programs.

Project Update

Funding amounts for 2019-2023 have been updated.

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

Brick Street Renovation Project

Streets, Sidewalks and Alleys

2019	$627,200	Operating
2020	$507,200	
2021	$359,700	
2022	$360,600	
2023	$970,900	

X Critical
\- Recommended
\- Contingent on Funding

Original Purchase Date & Cost
Unknown

Funding History

2018	$442,360	Operating
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 requested funding level will renovate approximately one to two blocks. The 2017 brick survey determined 13 blocks have been identified in "very poor" condition and 47 blocks are in "poor" condition. The estimated cost of reconstructing all 13 very poor blocks is $3.5 million.

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 plans on revaluating the brick streets in 2018 and will be re-surveyed every five years. Afterwards, the top 20 streets will be re-evaluated yearly. The following program is recommended for 2019-2023:

Year	Block	Street	Brick Area (SF)	Reno	Brick Purchase	Total

2019	200	Wood Court	18,175	$586,300	$40,900	$627,200
2020	300	Oak Circle	14,696	$474,100	$33,100	$507,200
2021	300	14th Street	10,420	$336,200	$23,500	$359,700
2022	800	Oakwood	10,437	$336,700	$23,900	$360,600
2023	1000	Michigan	28,132	$907,600	$63,300	$970,900
Total				**$2,640,900**	**$184,700**	**$2,825,600**

Project Update

Funding amounts have been updated for 2019-2023. 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

Preventative Maintenance Program
Streets, Sidewalks, and Alleys

2019	$149,100	Operating
2020	$153,200	
2021	$157,500	
2022	$161,800	
2023	$166,100	

X Critical
\- Recommended
\- Contingent on Funding

Project Description & Justification

This program is designed to extend the life of Village streets by applying one of three methods of preventative pavement maintenance to repair pavement deficiencies that occur over time. The Department will evaluate the streets for deficiencies each year and shall apply this program based on pavement needs.

The three preventative pavement maintenance services include:

Pavement Patching (non-utility)

This service patches localized areas of deterioration in the pavement. The Village currently has a street patching program that focuses only on street patching needed due to water main and sewer repairs performed by the Village, but has no program to address non-utility related patch locations. Many calls are received 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, it is only a temporary fix, and residents 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. The 2019 funding amount is anticipated to complete up to 2,900 SY of 2-inch 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 extending 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 $100,000 has been added for 2023 which includes an annual inflation factor of 3%.

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.

Crack Sealing

Original Purchase Date & Cost

N/A

Funding History

2018	$63,200*	Operating
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

* not constructed at time of budget preparation

Project Description & Justification

This program is designed to perform preventive maintenance on resurfaced asphalt streets within 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 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 $47,200 has been added for 2023 which includes an annual inflation factor of 3%.

Project Alternative

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

Pavement Surface Rejuvenation

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 and continued in 2018.

An annual inflation factor of 3% is included. The 2019 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 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.

Overall Program Budget

	Program Budget			
Year	Pavement Surface Rejuvenation	Pavement Patching	Crack Sealing	Budget Total
2019	$16,900	$89,800	$42,400	$149,100
2020	$17,400	$92,200	$43,600	$153,200
2021	$17,900	$94,800	$44,800	$157,500
2022	$18,400	$97,400	$46,000	$161,800
2023	$18,900	$100,000	$47,200	$166,100

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

Brick Street Repairs	2019	$140,000	Operating
Streets, Sidewalks and Alleys	2020	$144,500	
	2021	$149,000	
	2022	$153,000	
	2023	$157,500	

X Critical
\- Recommended
\- Contingent on Funding

Types of Maintenance

Depression

Rutting

Edge of Pavement Settlement

Original Purchase Date & Cost

Unknown

Funding History

2018	$136,000	Operating
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. It is estimated that over 52,000 SF of brick street repairs are needed throughout the

Village. The cost for brick street repairs averages $12-$14 per square foot for a total cost range of $630,000 - $735,000. The table below represents a fully funded brick street maintenance plan.

Year	Patching	Brick Purchase	Total
2019	$119,000	$21,000	$140,000
2020	$123,000	$21,500	$144,500
2021	$127,000	$22,000	$149,000
2022	$130,000	$23,000	$153,000
2023	$134,000	23,500	157,500
Total	**$633,000**	**$111,000**	**$744,000**

Project Update

The funding request for 2018 has been increased from $136,000 to $140,000 and, $157,500 has been added to 2023. Costs have been updated to reflect an annual 3% price index.

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

Sidewalk Repair Program	2019	$74,200
Streets, Sidewalks and Alleys	2020	$76,300
	2021	$78,400
	2022	$80,500
	2023	$82,600

X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost

Unknown

Funding History

2018	$72,100	Operating
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

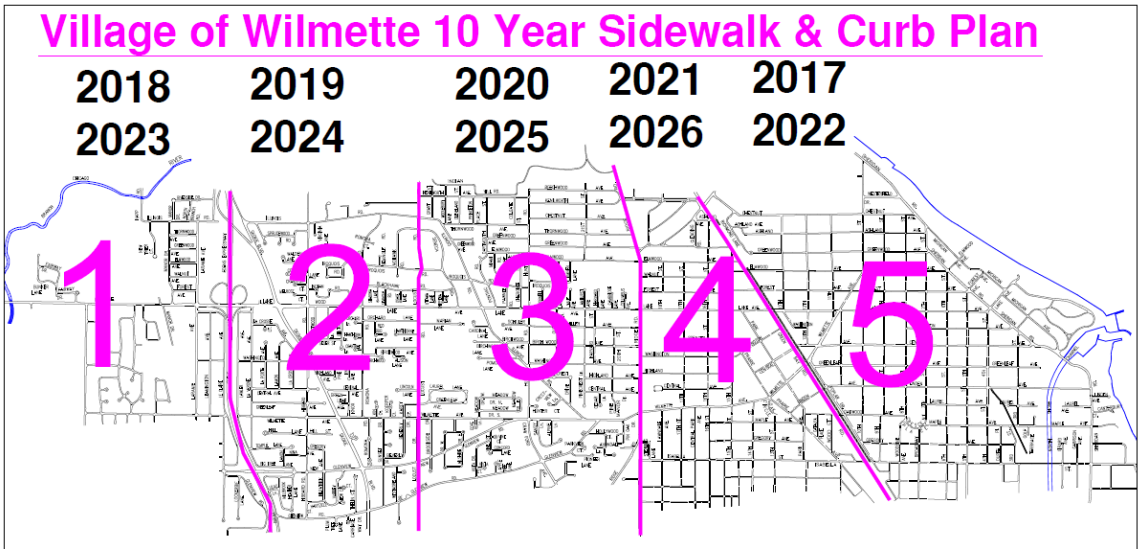
This project is for the replacement of public sidewalks in various parts of the Village that present a potential tripping hazard.

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 repairs all eligible 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. Trip hazards are first temporarily repaired with an asphalt patch and then permanently repaired 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.

Project Update

The funding amount of $82,600 has been added to 2023. 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

Pavement Marking Program
Streets, Sidewalks and Alleys

		2019	$53,000	Operating
		2020	$54,500	
		2021	$56,000	
		2022	$57,500	
X	Critical	2023	$59,000	
-	Recommended			
-	Contingent on Funding			

Original Purchase Date & Cost

Unknown

Funding History

2018	$51,500
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 $59,000 has been added to 2023.

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

Curb Replacement Program

Streets, Sidewalks and Alleys

2019	$43,400	Operating
2020	$44,700	
2021	$45,900	
2022	$47,100	
2023	$48,300	

\- Critical
X Recommended
\- Contingent on Funding

Original Purchase Date & Cost

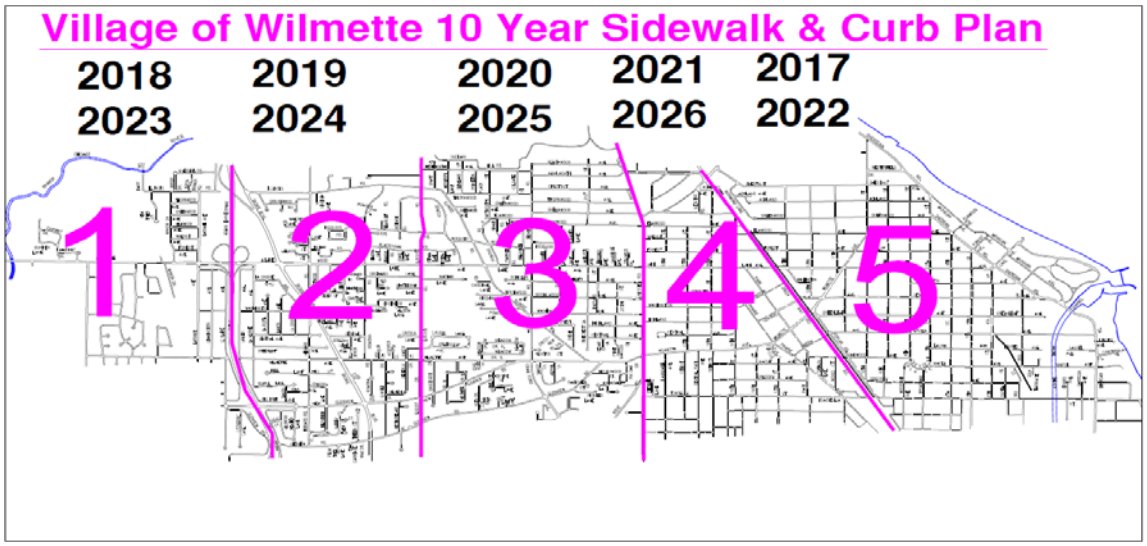
Unknown

Funding History

2018	$42,200	Operating
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.



Broken and missing curb with potential to damage vehicles

Project Update

The funding amount of $48,300 has been added to 2023. 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

Replacement of North Bridge Sidewalk 2019 $318,400 Bond

Streets, Sidewalks and Alleys

- Critical
X Recommended
- 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

Street Light Pole Painting	2019	$37,105	Operating
Streets, Sidewalks and Alleys	2020	$38,105	
	2021	$39,250	
	2022	$40,425	
	2023	$41,640	

- \- Critical
- X Recommended
- \- Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

2018	$37,105.00 (181 poles)
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 36.

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-feet 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 695 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 (190 poles)
- Old Glenview Road between Sunset and Crawford Ave (48 poles)
- Area between Green Bay Rd. and Sheridan Rd., north of Greenwood Ave (74 poles)
- Area delimited by Green Bay Rd., Michigan, Greenwood and Washington Avenues (181 poles)

Project Update

None

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	2019	$28,235	Operating
Streets, Sidewalks and Alleys	2020	$28,235	
	2021	$29,235	
	2022	$29,235	
	2023	$30,235	

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

2018 $28,235 (concrete poles, approx. 10 each)

Project Description & Justification

This request provides for the purchase of approximately 9-10 decorative green light poles (12-foot length) and luminaire heads, and provides for a 10-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-feet 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.

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.

The replacement program will extend over approximately seven years, commencing in 2019 and ending in 2025. 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 was a new project for 2018; however, funds ($28,235) were used to replace concrete poles in poor, hazardous condition and located along arterial streets.

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.

Operating Budget Impact

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

ROUTINE	
Department Budget	Engineering & Public Works / Street Lighting
Account Number Description	Supplies -Light Poles and Parts
Account Number	11333030-430124

RRFBs at Plaza de Lago Pedestrian Crossing 2020 $30,000 Operating/Grant

Streets, Sidewalks and Alleys

- Critical
X Recommended
- 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. Depending on the new Plaza owner's plans for the property, it may make sense to defer this project for an additional year.

Project Update

None.

Project Alternative

The alternative to funding this project is to maintain the existing signage and pavement marking or to seek financial participation from the owners of the shopping center.

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

Stamped Concrete Paver Replacement

Operating

Streets, Sidewalks and Alleys

2020	$15,500
2021	$15,900
2022	$16,400
2023	$16,900

- Critical
X Recommended
- Contingent on Funding

Funding History

2015 $29,985

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	

Decorative/Roadway Street Lights	2020	$117,200	Operating
Streets, Sidewalks and Alleys	2021	$ 42,500	

\- Critical
Recommended
X Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History
2018 $77,300 Operating

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.

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

Skokie Valley Trail
(Formerly Five-Village Bike Trail)

Streets, Sidewalks and Alleys

2020 $2,735,000 (Phase II/ROW) Grant
2021 $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. This project was deferred to 2020 as staff will work in 2019 to identify grant funding opportunities.

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?*

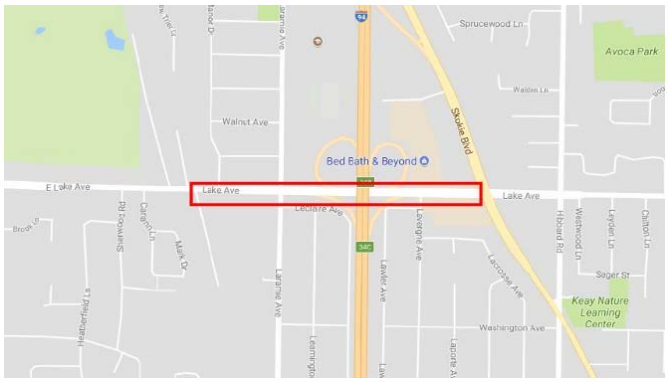
NON-ROUTINE	
Maintenance Costs:	$2,500 - $5,000 per mile per year for contractual landscaping. $10,000 per mile per year if grass cutting is included
Personnel Costs:	$950 - $1,400 in-house personnel cost (40-60 hours per year)
Training Costs:	None

West Lake Avenue Ped/Bike Improvements 2020 $300,000 Grant
Streets, Sidewalks and Alleys 2021 $1,800,000

- Critical
- Recommended
X Contingent on Funding

Original Purchase Date & Cost

N/A



Funding History

N/A

Project Description

This project will include a feasibility study to analyze 3 previously identified bridge alternatives along or near East Lake Avenue for crossing I-94 with a bike path. The design and construction of the preferred alternative will include bridge design and installation of the bridge and path with connection to adjacent sidewalk and trails, ADA access and detectable warnings at ramp and street crossings.

The new two-way multi-use path will safely connect the east and west sides of Interstate 94 with residential neighborhoods, businesses, restaurants, schools, parks and the Wilmette Park District. It will also extend the proposed Skokie Valley Trail path to the east side of I-94 as per the Village's Spring 2018 bicycle plan update.

$300,000 for engineering design has been programmed for 2020 and $1.8 million for construction has been programmed for 2021.

Project Update

This project was deferred to 2020 as staff will work in 2019 to identify additional grant opportunities (a grant application was submitted previously but was unsuccessful).

Project Alternative

The alternative to funding this project with grants is to fund it locally through a debt issuance.

Operating Budget Impact

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

NON-ROUTINE	
Maintenance Costs	None as this is State and County jurisdiction
Personnel Costs	None
Training Costs	None

Streetscape Improvements / Ridge Road 2020 $ 200,000 Grant
Streets, Sidewalks and Alleys 2021 $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 2020 is for project design and $1,700,000 in 2021 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

Traffic Calming		2020	$9,000	Operating
Streets, Sidewalks and Alleys		2021	$25,000	
		2022	$25,000	
		2023	$55,000	
-	Critical	2024	$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).

In 2016, the Village 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. It is recommended that the road diet be deferred until the Active Transportation Plan is completed.

The $25,000 in 2021, 2022, and 2024 is planned for use on the list of eligible traffic calming candidates which have remained unfunded since 2008.

Project Update

This has been deferred to 2020.

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	2022	$350,000	Bond
	2023	$400,000	
Streets, Sidewalks and Alleys	2024	$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.

2022	Preliminary Engineering	$ 350,000
2023	Design	$ 400,000
2024	Construction	$ 6,000,000

Project Update

There are 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

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 2019:

Department	Number of Vehicles to be Replaced in FY 2019	Cost of Vehicles to be Replaced in FY 2019	Total Number of Vehicles in Fleet*
Public Works	11	$ 735,250	**101**
Police	4	156,000	**27**
Fire	0	0	**18**
TOTAL	**15**	**$ 891,250**	**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 Capital Equipment Replacement Fund, General Obligation Bonds, Water Fund Operating, and Sewer Fund Operating.

Ten Year Capital Improvement Program
Vehicle Summary

Vehicle Replacement	2019	2020	2021	2022&2023	Five-Year Total	2024-2028	Ten-Year Total
Public Works	735,250	935,350	557,250	1,043,500	3,271,350	2,538,250	5,809,600
Police	156,000	180,000	40,000	244,000	620,000	640,000	1,260,000
Fire	-	315,000	505,000	-	820,000	3,110,000	3,930,000
Total	**891,250**	**1,430,350**	**1,102,250**	**1,287,500**	**4,711,350**	**6,288,250**	**10,999,600**

Proposed Financing	2019	2020	2021	2022&2023	Five-Year Total	2024-2028	Ten-Year Total
CERF	597,250	1,237,350	972,250	587,500	3,356,017	2,333,250	5,689,267
General Fund- Debt Financing	-	-	-	-	-	2,580,000	2,580,000
Sewer Fund Operating	110,000	79,000	115,000	350,000	673,167	687,500	1,360,667
Water Fund Operating	184,000	114,000	15,000	350,000	682,167	687,500	1,369,667
Total	**891,250**	**1,430,350**	**1,102,250**	**1,287,500**	**4,711,350**	**6,288,250**	**10,999,600**

Ten Year Capital Improvement Program
Public Works Vehicle Summary

Public Works Department	Year	Vehicle #	Page	This Project is:	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
Large Dump Truck	2002	T-10	1	Rec.	177,000	-	-	-	177,000	-	177,000	CERF
Heavy-Duty Front End Loader	2001	C-14	3	Rec.	195,000	-	-	-	195,000	-	195,000	CERF & W/S Fund
Pick-Up Truck	2005	T-43	5	Rec.	35,000	-	-	-	35,000	-	35,000	W/S Fund
Small Dump Truck	2007	T-35	7	Rec.	55,000	-	-	-	55,000	-	55,000	W/S Fund
Step Van - Sign Shop	2006	T-19	9	Rec.	65,000	-	-	-	65,000	-	65,000	CERF
Buildings & Grounds Utility Truck	2000	T-28	11	Rec.	38,000	-	-	-	38,000	-	38,000	CERF
Water Meter Shop Van	1998	T-46	13	Rec.	35,000	-	-	-	35,000	-	35,000	Water Fund
Pick-Up Truck	2003	T-7	15	Rec.	39,000	-	-	-	39,000	-	39,000	Water Fund
Pick-Up Truck	2005	T-29	17	Rec.	38,000	-	-	-	38,000	-	38,000	CERF
Jeep Wrangler	2004	P-19	19	Rec.	36,000	-	-	-	36,000	-	36,000	CERF
Electric Scissor Lift	N/A	New	21	Contingent	21,000	-	-	-	21,000	-	21,000	CERF
Large Dump Truck	2003	T-16	1	Rec.	-	181,100	-	-	181,100	-	181,100	CERF
Aerial Lift Truck	2005	T-24	23	Rec.	-	200,000	-	-	200,000	-	200,000	CERF
Sidewalk Snowplow	1999	C-2	24	Rec.	-	85,000	-	-	85,000	-	85,000	CERF
Brush Chipper	1999	C-9	26	Rec.	-	85,000	-	-	85,000	-	85,000	CERF
Floor Scrubber	2005	S-3	28	Rec.	-	56,000	-	-	56,000	-	56,000	CERF
Small Dump Truck	2008	T-38	29	Rec.	-	55,000	-	-	55,000	-	55,000	W/S Fund
Water Meter Shop Van	2004	T-25	31	Rec.	-	35,000	-	-	35,000	-	35,000	Water Fund
Pick-Up Truck	2006	T-44	32	Rec.	-	40,000	-	-	40,000	-	40,000	CERF
Utility Truck	2001	T-31	33	Rec.	-	66,000	-	-	66,000	-	66,000	CERF
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
Hydro-Excavator	N/A	New	36	Rec.	-	28,000	-	-	28,000	-	28,000	CERF
Large Dump Truck	2003	T-17	1	Rec.	-	-	185,000	-	185,000	-	185,000	CERF
Pick-Up Truck	2009	T-15	38	Rec.	-	-	44,000	-	44,000	-	44,000	CERF
Pick-Up Truck	2009	T-20	39	Rec.	-	-	40,000	-	40,000	-	40,000	CERF
Pick-Up Truck	2009	T-26	40	Rec.	-	-	44,000	-	44,000	-	44,000	CERF
Pick-Up Truck	2009	T-36	41	Rec.	-	-	40,000	-	40,000	-	40,000	CERF
Pick-Up Truck	2009	T-47	42	Rec.	-	-	43,000	-	43,000	-	43,000	CERF
Ford Escape Hybrid	2007	P-13	43	Rec.	-	-	30,000	-	30,000	-	30,000	CERF
Ford Escape Hybrid	2007	P-16	44	Rec.	-	-	30,000	-	30,000	-	30,000	W/S Fund
Sewer Televising Truck	2006	T-45	45	Rec.	-	-	100,000	-	100,000	-	100,000	Sewer Fund
Street Sweeper -Elgin Pelican	2012	S-1	47	Rec.	-	-	-	230,000	230,000	-	230,000	CERF & W/S Fund
Large Dump Truck	2003	T-33	49	Rec.	-	-	-	165,000	165,000	-	165,000	W/S Fund
Vac-All Truck	2005	T-34	50	Rec.	-	-	-	100,000	100,000	-	100,000	CERF
Small Dump Truck	2012	T-14	51	Rec.	-	-	-	55,000	55,000	-	55,000	W/S Fund
Brush Chipper	2004	C-7	52	Rec.	-	-	-	85,000	85,000	-	85,000	CERF
Light Pole Trailer	1994	C-26	54	Rec.	-	-	-	11,000	11,000	-	11,000	CERF
Stump Grinder	2001	C-6	55	Rec.	-	-	-	30,000	30,000	-	30,000	CERF
Large Dump Truck	2003	T-40	56	Rec.	-	-	-	165,000	165,000	-	165,000	W/S Fund
International Utility	2012	T-27	57	Rec.	-	-	-	200,000	200,000	-	200,000	W/S Fund
Squad Transfer	N/A	N/A	N/A	Rec.	1,250	1,250	1,250	2,500	6,250	6,250	12,500	CERF
All Vehicles (2023-2027)		V-30			-	-	-	-	-	2,532,000	2,532,000	All
41 Vehicles of Total (77 Vehicles)					**735,250**	**935,350**	**557,250**	**1,043,500**	**3,271,350**	**2,538,250**	**5,809,600**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total
Capital Equipment Replacement Fund (CERF)	441,250	742,350	427,250	343,500	**1,916,017**	1,163,250	**3,079,267**
General Fund- Debt	-	-	-	-	**-**	-	**-**
Water Fund	184,000	114,000	15,000	350,000.00	682,167	687,500	**1,369,667**
Sewer Fund	110,000	79,000	115,000	350,000.00	673,167	687,500	**1,360,667**
Total	**735,250**	**935,350**	**557,250**	**1,043,500**	**3,271,350**	**2,538,250**	**5,809,600**

Project Rating							
Critical	-	-	-	-	-	-	-
Recommended	714,250	935,350	557,250	1,043,500	3,250,350	2,538,250	5,788,600
Contingent	21,000	-	-	-	21,000	-	21,000
Total	**735,250**	**935,350**	**557,250**	**1,043,500**	**3,271,350**	**2,538,250**	**5,809,600**

Large Dump Truck		2019 (T-10)	$177,000	CERF
-	Critical	2020 (T-16)	$181,100	
X	Recommended	2021 (T-17)	$185,000	
-	Contingent on Funding			

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, three trucks are 2003 year models (or 14 years of age). The other seven 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	**2019**	**2020**	**2021**
Vehicle No.	T-10	T-16	T-17
Manufacturer	International 4400	International 4400	International 4700 (4WD)
Original Cost	$94,523	$95,923	$114,746
Model Year	2003	2003	2003
In-Service Year	2002	2003	2003
Useful Life (yrs.)	15	15	15
Current Life (yrs.)	17	16	16
Age at time of Replacement (yrs.)	17	17	18
No. of Breakdowns (2016-2017)*	30	N/A	N/A
Labor Hours	167.50	N/A	N/A
Labor Cost	$7,250.16	N/A	N/A
Parts Cost	$3,580.11	N/A	N/A
Total Cost	$10,830.27	N/A	N/A
Current Mileage	32,092	33,678	26,172

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

Project Description & Justification

In 2019, an estimated cost of $177,000 to replace a 2003 model International dump truck (T-10).

Project Update

As part of the 2019 CIP Budget process, the individual CIP pages for individual large dump trucks (i.e. T-10, T-16 and T-17) were consolidated into the table as shown on the first page. The projected budget of $177,000 (T-10) 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, three trucks are 2003 year models (or 16 years of age). The other seven trucks are 2009 year models or newer. Consequently, staff recommends phasing in replacement of the three trucks (2003 year models) over the course of the next 3-years (or 1 truck per year), reflecting a replacement cycle range of 17-18 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	1233030-480225-40590 /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

Heavy-Duty Front End Loader (C-14) 2019 $195,000 CERF and W/S Fund

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	New Holland
Model	LW 170
Year	2001
Cost	$102,415
Useful Life	17 years
Current Life	18 years

All divisions within the Engineering and Public Works Department utilize this machine on a daily basis for material loading. 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 wheel loader.

C-14	
Breakdown/Repairs 2016-2017	
Number of Breakdown/Repairs	19
Labor Hours	69.50
Labor Cost	$2,551.20
Parts Cost	$2,057.46
Total Cost	$4,608.66
Total Equipment Miles	N/A
Total Equipment Hours	5,807

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

Project Update

This unit is one of three front end wheel loaders (two large, one small size class) owned by the Village which are utilized on a year-round basis for material loading (e.g. sand, stone and topsoil), excavation spoils (approx. 2,000 cubic yards annually), bulk rock salt (approx. 2,100 tons annually), street sweepings (approx. 700-900 cubic yards annually). The wheel loaders also participates in snow hauling operations of business district areas and provides added snow plowing capability for blizzard events. 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 wheel loaders also play an

integral role in providing emergency response for storm clean-up operations by opening up and clearing roads of fallen trees or large branches. The Fleet Maintenance division also utilizes these loaders for lift/transport of 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 40807090-480275 41838090-480275	/C-14 (50%) /C-14 (25%) /C-14 (25%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030	
Personnel Costs	None	
Training Costs	None	

Pick-Up Truck (T-43) 2019 $35,000 W/S - Operating
Utility Technician

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-250, 9,600 GVWR
Year	2005
Cost	$33,348
Useful Life	*12 years*
Current Life	*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 2016-2017	
Number of Breakdown/Repairs	20
Labor Hours	92.0
Labor Cost	$3,695.76
Parts Cost	$2,676.26
Total Cost	$6,372.02
Total Equipment Miles	103,535
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

Small Dump Truck (T-35) 2019 $55,000 W/S Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-250, 16,000 GVWR
Year	2007
Cost	$42,672
Useful Life	10 years
Current Life	12 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 2016-2017	
Number of Breakdown/Repairs	13
Labor Hours	45.50
Labor Cost	$2,120.88
Parts Cost	$2,840.06
Total Cost	$4,960.94
Total Equipment Miles	61,335
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 from 2018 to 2019. 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

Street Sign Maintainer Van (T-19) 2019 $65,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	E-450 Step Van
Year	2007
Cost	$66,723
Useful Life	13 years
Current Life	13 years

Personnel in the Engineering and Public Works Department (i.e. Sign Shop) utilize 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 $65,000 to replace a 2007 Ford E-450 Step Van for sign maintenance. The primary work responsibilities associated with this vehicle include faded sign removal/installation (approx. 300-400 per year), traffic counter removal/installation (approx. 100-120 per year), sign consolidation project, collection maintenance at commuter lots (CTA and METRA), special events support (posting of no-parking signs and barricade staging for road closure) and off-hours emergency response (i.e. vehicle accidents, damage to property -signs).

T-19	
Breakdown/Repairs 2016-2017	
Number of Breakdown/Repairs	31
Labor Hours	113.0
Labor Cost	$5,764.48
Parts Cost	$2,980.30
Total Cost	$8,744.78
Total Equipment Miles	59,905
Total Equipment Hours	N/A

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

Project Update

The projected replacement cost has been reduced from $85,000 to $65,000 and affords purchase of a Ford Transit Van. The new truck will come equipped with a commercial grade air compressor to support pneumatic tools (i.e. sign post installation and removal), power inverter (5,000W) for electric power tools, shelving for sign materials, ladder rack, additional storage for barricades and

emergency lighting. 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

Utility Truck (T-28) 2019 $38,000 CERF
Facilities Maintenance

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	GMC
Model	Sierra, 8,600 GVWR
Year	2000
Cost	$34,934
Useful Life	16 years
Current Life	19 years

Employees in the Engineering and Public Works Department (Facilities Maintenance Division) utilize this utility service truck in their daily activities. The vehicle is equipped with a fiberglass service body, 110 volt power inverter 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.

T-28	
Breakdown/Repairs 2016-2017	
Number of Breakdown/Repairs	16
Labor Hours	35.25
Labor Cost	$1,515.00
Parts Cost	$1,181.05
Total Cost	$2,696.05
Total Equipment Miles	138,257
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 deferred from 2018 to 2019. There are two options for the replacement vehicle, both of which are less costly than the current vehicle's configuration. Option one is a pick-up truck (4x4) with a snow plow, tail gate lift, ladder rack, toolbox, emergency lighting and two-way radio. Option two is refurbish and repurpose existing fiberglass service body and transfer onto a new medium duty truck chassis with power inverter and lift gate. 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

Water Meter Shop Van (T-46) 2019 $35,000 Water Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	E-250, 8,600 GVWR
Year	1998
Cost	$23,000
Useful Life	17 years
Current Life	21 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 2016-2017	
Number of Breakdown/Repairs	12
Labor Hours	26.25
Labor Cost	$1,282.56
Parts Cost	$786.14
Total Cost	$2,068.70
Total Equipment Miles	62,390
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 deferred from 2018 to 2019. 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

Pick-Up Truck (T-7) 2019 $39,000 Water Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-250, 8,800 GVWR
Year	2003
Cost	$29,938
Useful Life	14 years
Current Life	16 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 2016-2017	
Number of Breakdown/Repairs	13
Labor Hours	47.25
Labor Cost	$2,193.00
Parts Cost	$1,090.39
Total Cost	$3,283.39
Total Equipment Miles	25,295
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 deferred from 2018 to 2019 after 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. There are no other updates for this request. 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

Pick-Up Truck (T-29) 2019 $38,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-250, 9,600 GVWR
Year	2005
Cost	$32,571
Useful Life	13 years
Current Life	14 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.

T-29	
Breakdown/Repairs 2016-2017	
Number of Breakdown/Repairs	22
Labor Hours	39.0
Labor Cost	$1,217.11
Parts Cost	$2,222.61
Total Cost	$3,439.72
Total Equipment Miles	30,735
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 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

Public Works Jeep (P-19) 2019 $36,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Jeep
Model	Wrangler
Year	2004
Cost	$23,258
Useful Life	13 years
Current Life	15 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. parking lots and atypical sidewalks, crossing guard locations) 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 $36,000 to replace a 2004 Jeep Wrangler and 6-foot snowplow.

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 was deferred from 2018 to 2019 and the total cost has increased $4,000 to offset increases in manufacturer and equipment costs. This vehicle's replacement is recommended

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

Electric Scissor Lift 2019 $ 21,000 CERF

Facilities Maintenance- Village-wide use

- 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 $ 1,691 for four rentals
- 2018 $ 140 for partial rental (through April, 2018)

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 duel 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

Aerial Lift Truck (T-24) 2020 $200,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	International
Model	4400, Terex 60 ft.
Year	2005
Cost	$116,651
Useful Life	13 years
Current Life	14 years

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

Sidewalk Snowplow (C-2) 2020 $85,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Holder
Model	C240
Year	1999
Cost	$65,140
Useful Life	18 years
Current Life	20 years

Personnel in the Engineering and Public Works Department utilize this articulating sidewalk machine 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, salt spreader, emergency lighting, and two-way radio.

Project Description & Justification

An estimated cost of $85,000 to replace a 1999 Holder sidewalk machine.

Project Update

Replacement of this unit has been deferred from 2019 to 2020 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. Two examples of less costly alternatives include: the Multione® machine ($55,000) and Multihog® machine ($80,000). By comparison, a new Holder or MT Trackless machine has a projected cost of $160,000, representing a potential savings of $80,000 to $105,000. 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

Brush Chipper (C-9)	2020	$85,000	CERF

- \- Critical
- X Recommended
- \- Contingent on Funding

Vehicle Description

Make	Morbark
Model	2400 Tandem
Year	1999
Cost	$31,940
Useful Life	17 years
Current Life	20 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 chipping branches up to 18" diameter size, which assists in eliminating the need for 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 resulting in continuation of service without disruptions. If approved, staff recommends a replacement unit that is similarly equipped to handle branch diameter size 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

Floor Sweeper/Scrubber (S-3) 2020 $56,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Tenant
Model	8410LP
Year	2005
Cost	$44,999
Useful Life	15 years
Current Life	14 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

Small Dump Truck (T-38)	2020	$55,000	W/S -Operating

- \- Critical
- X Recommended
- \- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-450 2WD chassis, 16,000 GVWR
Year	2008
Cost	$56,997
Useful Life	10 years
Current Life	11 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

This vehicle has been deferred from 2019 to 2020 based on review of maintenance records. 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

Water Meter Shop Van (T-25) 2020 $35,000 Water - Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Chevrolet
Model	Express Cargo
Year	2004
Cost	$25,854
Useful Life	14 years
Current Life	15 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 the cost has increased $3,000 to mirror configuration and option set on T-46. The replacement vehicle will be a Ford Transit Van or equivalent. 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

Pick-Up Truck (T-44) 2020 $40,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-250, 9,600 GVWR
Year	*2007
Cost	$34,687
Useful Life	12 years
Current Life	13 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

Utility Truck (T-31) 2020 $66,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Chevrolet
Model	3500, 12,000 GVWR
Year	2001
Cost	$48,406
Useful Life	16 years
Current Life	18 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

Water/Sewer Utility Vehicle (T-1) 2020 $55,000 W/S -Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-250, 8,600 GVWR
Year	2008
Cost	$50,025
Useful Life	12 years
Current Life	11 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

Shoring Supply Truck (T-42) 2020 $48,000 W/S Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F350, 12,000 GVWR
Year	2005
Cost	$34,981
Useful Life	16 years
Current Life	14 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?*

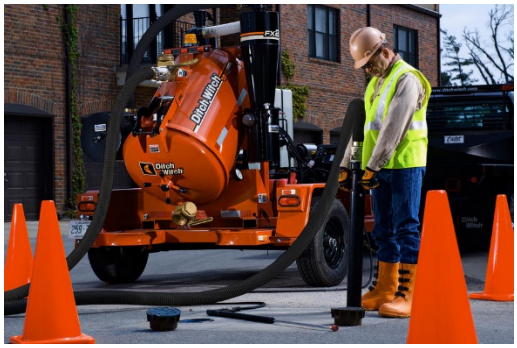
ROUTINE	
Account Number/Description	40807090-480200-40505 / T-42 (50%) 41838090-480200-40505 / T-42 (50%)
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Truck or Trailer Mounted Hydro-Excavator 2020 $28,000 CERF

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost

N/A



Funding History

N/A

Project Description & Justification

This request and 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 request was new for 2018 and has been deferred from 2018 to 2020 to allow further review and assessment. For the balance of 2018 and 2019, Public Works staff will continue to look at operating 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 Street Division borrows the Vac-Con sewer cleaner trucks, on an as needed basis, from the Water/Sewer Division.

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

Pick-Up Truck (T-15) 2021 $44,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

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

Pick-Up Truck (T-20) 2021 $40,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

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

Pick-Up Truck (T-26) 2021 $44,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

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

Pick-Up Truck (T-36) 2021 $40,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

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

Pick-Up Truck (T-47) 2021 $43,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

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

Hybrid SUV (P-13) 2021 $30,000 CERF
Village Engineers

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	Escape Hybrid
Year	2007
Cost	$25,650
Useful Life	13 years
Current Life	12 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

Hybrid SUV (P-16) 2021 $30,000 W/S -Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	Escape Hybrid
Year	2007
Cost	$25,650
Useful Life	13 years
Current Life	12 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

Sewer Televising Truck (T-45) 2021 $100,000 Sewer - Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Chevrolet/Cues
Model	CC5500, 19,500 GVWR
Year	2006
Cost	$189,000
Useful Life	12 years
Current Life	13 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 $100,000 to retrofit the existing unit at a projected 60-70% cost savings ($100,000 vs. $300,000) over a new truck chassis and traditional sewer televising equipment. As part of retrofit, the existing televising equipment (i.e. cameras and transporters) and computer hardware/software will be replaced with a streamlined system. Emphasis will be on its straightforward functionality, operation and maintenance (i.e. lower cost of ownership).

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. An additional software upgrade was performed in 2017 at a cost of $1,960. 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, or explore options to outsource televising services. However, with the outsourcing option, Village loses the capability, flexibility and conveniences of being able to perform this service (investigate problem sites, determine source whether public or private matter) on-demand 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

Street Sweeper (S-1) 2022 $230,000 CERF and W/S Operating (50/50)

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Elgin
Model	Pelican Sweeper
Year	2013
Cost	$181,041
Useful Life	10 years
Current Life	6 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

Large Dump Truck (T-33) 2022 $165,000 W/S Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	International
Model	4400, 36,200 GVWR
Year	2003
Cost	$83,493
Useful Life	17 years
Current Life	16 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

Vac-All Truck (T-34) 2022 $300,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Peterbilt and Vac-All
Model	LV13FBS Catch Basin Cleaner
Year	2005 (received in 2007)
Cost	$238,965
Useful Life	15 years
Current Life	12 years

Various personnel in the Engineering and Public Works Department (Street Division) utilze 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. Likewise, the Village can explore purchase of truck mounted vacuum unit(s) at lower cost ($100,000 vs. $300,000).

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

Small Dump Truck (T-14) 2022 $55,000 W/S Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	F-350, 15,000 GVWR
Year	2012
Cost	$36,683
Useful Life	10 years
Current Life	7 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

Brush Chipper (C-07)	2022	$85,000	CERF

- \- Critical
- X Recommended
- \- Contingent on Funding

Vehicle Description

Make	Morbark
Model	2400XL
Year	2004
Cost	$36,500
Useful Life	17 years
Current Life	15 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 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Sauber Mfg.
Model	4300S
Year	1994
Cost	$4,960
Useful Life	25 years
Current Life	25 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

Stump Grinder (C-6) 2022 $30,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Carlton
Model	7500
Year	2001
Cost	$21,350
Useful Life	15 years
Current Life	18 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 2021 to 2022 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

Large Dump Truck (T-40) 2023 $165,000 W/S Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	International
Model	4400, 36,200 GVWR
Year	2003
Cost	$83,493
Useful Life	17 years
Current Life	16 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-40 and T-33), 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

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	40807090-480225-40615 T-40, 50% 41838090-480225-40615 T-40, 50%
Maintenance Costs	All maintenance expenditures are included in various accounts in 11273030
Personnel Costs	None
Training Costs	None

Water/Sewer Utility Vehicle (T-27) 2023 $200,000 W/S -Operating

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	International, MTS Body
Model	7400, 31,000 GVWR
Year	2012 (*delivered in 2013)
Cost	$160,034
Useful Life	11 years
Current Life	6 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 (i.e. new water services, water service repairs, water valve repairs, fire hydrant installations/repairs, water main breaks, sewer repairs pipe/structures, etc.). This truck is equipped with a metal construction utility service body, stick crane (10,000 lbs. lift capacity), power inverter (5,000W), air compressor (125-185 cfm), generator (7,200W), emergency lighting, and two-way radio. This truck is a 2012 model truck chassis, outfitted with equipment and put into service in 2013.

Project Description & Justification

An estimated cost of $200,000 to replace a 2012 Navistar 7400 truck chassis with MTS service body and ancillary equipment option set (i.e. stick crane, power inverter, air compressor and generator).

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	40807090-480275-40420 /T-27 (50%) 41838090-480275-40420 /T-27 (50%)
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:	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
Marked Squad Car	2015	SQ-505	1	Recommended	39,000	-	-	41,000	80,000	40,000	120,000	CERF
Marked Squad Car	2015	SQ-508	1	Recommended	39,000	-	-	41,000	80,000	40,000	120,000	CERF
Marked Squad Car	2015	SQ-510	1	Recommended	39,000	-	-	41,000	80,000	40,000	120,000	CERF
Marked Squad Car	2015	SQ-512	1	Recommended	39,000	-	-	41,000	80,000	40,000	120,000	CERF
Marked Squad - Watch Commander	2016	SQ-504	1	Recommended	-	40,000	-	-	40,000	80,000	120,000	CERF
Marked Squad Car	2016	SQ-506	1	Recommended	-	40,000	-	-	40,000	80,000	120,000	CERF
Marked Squad Car	2016	SQ-507	1	Recommended	-	40,000	-	-	40,000	80,000	120,000	CERF
Marked Squad Car	2016	SQ-511	1	Recommended	-	40,000	-	-	40,000	80,000	120,000	CERF
Speed Trailer	2002	SQ-516	3	Recommended	-	20,000	-	-	20,000	-	20,000	CERF
Utility Vehicle	2007	SQ-515	4	Recommended	-	-	-	-	-	-	-	CERF
Unmarked Squad Car	2013	SQ-523	5	Recommended	-	-	40,000	-	40,000	-	40,000	CERF
Marked Squad Car	2018	SQ-501	1	Recommended	-	-	-	40,000	40,000	40,000	80,000	CERF
Marked Squad - Shift Supervisor	2018	SQ-503	1	Recommended	-	-	-	40,000	40,000	40,000	80,000	CERF
Unmarked Minivan/Detectives	2012	SQ-525	N/A	N/A	-	-	-	-	-	40,000	40,000	CERF
Unmarked Interceptor Car/Deputy Chief	2015	SQ-502	N/A	N/A	-	-	-	-	-	40,000	40,000	CERF
Unmarked Utility Interceptor/Deputy Chief	2017	SQ-514	N/A	N/A	-	-	-	-	-	-	-	CERF
Unmarked Utility Interceptor/Police Chief	2017	SQ-509	N/A	N/A	-	-	-	-	-	-	-	CERF
Utility Vehicle/Parking Enforcement	2016	SQ-521	N/A	N/A	-	-	-	-	-	-	-	CERF
Unmarked Utility Interceptor/Detectives	2017	SQ-513	N/A	N/A	-	-	-	-	-	-	-	CERF
Unmarked Utility Interceptor/Detectives	2017	SQ-500	N/A	N/A	-	-	-	-	-	-	-	CERF
Total (21 vehicles)					**156,000**	**180,000**	**40,000**	**244,000**	**620,000**	**640,000**	**1,260,000**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total
Capital Equipment Replacement Fund (CERF)	**156,000**	**180,000**	**40,000**	**244,000**	**620,000**	**640,000**	**1,260,000**
Grant Funding	-	-	-	-	-	-	-
Total	**156,000**	**180,000**	**40,000**	**244,000**	**620,000**	**640,000**	**1,260,000**

Project Rating

Critical	-	-	-	-	-	-	-
Recommended	156,000	180,000	40,000	244,000	620,000	640,000	1,260,000
Contingent	-	-	-	-	-	-	-
Total	**156,000**	**180,000**	**40,000**	**244,000**	**620,000**	**640,000**	**1,260,000**

Marked Squad Cars	2019	$156,000	(4)	CERF
	2020	$160,000	(4)	
	2022	$ 80,000	(2)	
	2023	$ 164,000	(4)	

- Critical
X Recommended
- Contingent on Funding

Police Interceptor 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-505	$ 39,000	2015	2019	26	$4,842	67,619	100,000
Patrol	SQ-508	$ 39,000	2015	2019	35	$4,286	63,887	100,000
Patrol	SQ-510	$ 39,000	2015	2019	30	$3,340	65,795	100,000
Patrol	SQ-512	$ 39,000	2015	2019	34	$4,553	55,989	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 2019, the estimated cost to replace four marked squad cars is $156,000.

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

Speed Trailer – SQ516 2020 $20,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Kustom Signals
Model	5705 Speed Trailer
Year	2002 (*purchased in 2004)
Cost	$9,999
Useful Life	18 years
Current Life	16 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. These mobile radar units cost 3,000-5,000 dollars each, and typically come with a 2 year warranty, yielding a savings of $10,000. These radar speed signs can be stationed at various locations around the Village based on need.

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

Utility Vehicle – SQ515 2019 $0 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Chevrolet
Model	Tahoe
Year	2007
Cost	$28,062
Useful Life	14 years
Current Life	11 years

This vehicle is primarily assigned to department personnel assigned to the Northern Illinois Police Alarm System tactical team. It contains a custom storage unit for associated weapons and equipment. It's also used for traffic control and enforcement during special events. 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 an existing Ford Utility Interceptor or like vehicle upon retirement from the fleet. This will yield $40,000 in savings. 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

Unmarked Squad Car – SQ523 2021 $40,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford
Model	Taurus Interceptor
Year	2013
Cost	$29,996
Useful Life	6 years
Current Life	5 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:	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
Ambulance	2009	FD-209	1	Recommended	-	270,000	-	-	270,000	-	270,000	CERF
Rescue Boat	1997	FD-214	3	Recommended	-	45,000	-	-	45,000	-	45,000	CERF
Marion Squad Rescue Truck	1999	FD-201	5	Recommended	-	-	425,000	-	425,000	-	425,000	CERF
Utility Vehicle	2000	FD-207	7	Recommended	-	-	80,000	-	80,000		80,000	CERF
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	CERF
Incident Command Van	2006	FD-213	N/A	Recommended	-	-	-	-	-	70,000	70,000	CERF
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
Ambulance	2015	FD-211	N/A	N/A		-	-	-	-	260,000	260,000	CERF
Department Pool Vehicle	2005	FD-216	N/A	N/A	-	-	-	-	-	-	-	CERF
Deputy Fire Chief's Vehicle	2015	FD-210	N/A	N/A	-	-	-	-	-	-	-	CERF
Fire Chief's Vehicle	2015	FD-208	N/A	N/A	-	-	-	-	-	-	-	CERF
Duty Chief Vehicle/Incident Command Vehicle	2016	FD-203	N/A	N/A	-	-	-	-	-	-	-	CERF
Ambulance	2016	FD-212	N/A	N/A	-	-	-			-	-	CERF
Emergency One Pumper	2019	FD-205	N/A	N/A	-	-	-	-	-	-	-	CERF
Total (16 vehicles)					**-**	**315,000**	**505,000**	**-**	**820,000**	**3,110,000**	**3,930,000**	

Proposed Financing	2019	2020	2021	2022 & 2023	Five-Year Total	2024-2028	Ten-Year Total
Capital Equipment Replacement Fund (CERF)	-	315,000	505,000	-	820,000	530,000	1,350,000
General Fund - Bond Proceeds	-	-	-	-	-	2,580,000	2,580,000
General Fund - Other/TBD	-	-	-	-	-	-	-
Total	**-**	**315,000**	**505,000**	**-**	**820,000**	**3,110,000**	3,930,000

Project Rating

Critical	-	-	-	-	-	260,000	-
Recommended	-	315,000	505,000	-	820,000	3,110,000	3,930,000
Contingent	-	-	-	-	-	-	-
Total	**-**	**315,000**	**505,000**	**-**	**820,000**	**3,370,000**	**3,930,000**

Ambulance – FD - 209 2020 $270,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Ford F-350
Model	Type I Ambulance
Year	2009
Cost	$154,000
Useful Life	8 years
Current Life	10 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	45,927	5,082	127,050

*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

Due to performance and current vehicle maintenance practices, the Fire Department is able to defer this project from 2019 to 2020.

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

FD-209	
Breakdown/Repairs 2016-2017	
Number of Breakdown/Repairs	66
Labor Hours	130.0
Labor Cost	$10,893.40
Parts Cost	$6,844.96
Total Equipment Miles	54,976
Total Equipment Hours	5088

Avon Rigid Hull Inflatable Boat-FD214 2020 $45,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	*Avon*
Model	*Inflatable Boat*
Year	1999
Cost	$25,000
Useful Life	15 years
Current Life	22 years
Mercury Outboard 25 HP	
Current Life	19 years
Useful Life	20 years

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

Marion Squad Rescue Truck FD-201 2021 $425,000 CERF

- Critical
X Recommended
- Contingent on Funding

Vehicle Description

Make	Marion
Model	Squad Truck
Year	1999
Cost	$285,481
Useful Life	15 years
Current Life	20 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	14551	1870	46,750

*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 has been deferred since 2016 and the fire department recommends further deferment until 2021 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

Utility Vehicle- FD- 207 2021 $80,000 CERF

Make	Ford
Model	F- 250 4WD Utility
Year	2000
Cost	$34,875
Useful Life	10 years front line + 2 years reserve
Current Life	19 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	46,225	3615	90,375

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 2028. 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 2019:

Project	Cost of Improvement	Funding Source	This Project Is:
Sewer Lining & Rehabilitation	1,970,000	IEPA	Critical
Sewer Main Repairs	327,500	Operating	Critical
Sewer Maintenance	266,700	Operating	Critical
5-Year Facility Plan for Sewer Lining	85,000	Operating	Critical
Neighborhood Storage	1,900,000	Bond	Recommended
Stormwater Utility Program	75,000	Operating	Recommended
Smoke Testing/Dyed Water Flooding	60,000	Operating	Recommended
Electrical Improvements	20,000	Operating	Recommended
RainReady Public /Private Cost share Program	72,500	Operating	Contingent
Total	**$ 4,776,700**		

Ten Year Capital Improvement Program
Sewer Summary

Facility Improvements	Page	This Project is:	2019	2020	2021	2022-2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
STORM WATER PUMPING STATION										
Clean Out Pumping Station Sump	1	Critical	-	-	-	40,000	40,000	45,000	85,000	Operating
Electrical Improvements	2	Rec.	20,000	1,200,000	-	-	1,220,000	-	1,220,000	Bond
Pump Renovations	4	Rec.	-	35,000	35,000	-	70,000	-	70,000	Operating
Roof Replacement	N/A	Rec.	-	-	-	-	-	75,000	75,000	Operating
SEWER COLLECTION SYSTEM										
Sewer Lining & Rehabilitation	5	Critical	1,970,000	820,000	1,150,000	2,410,000	6,350,000	6,100,000	12,450,000	IEPA Loan
Sewer Main Repairs	7	Critical	327,500	337,000	346,000	722,500	1,733,000	1,835,000	3,568,000	Operating
Sewer Maintenance	9	Critical	266,700	272,000	277,000	570,500	1,386,200	1,450,000	2,836,200	Operating
5-Year Facility Plan for Sewer Lining	11	Critical	85,000	-	-	-	85,000	-	85,000	Operating
Neighborhood Storage	13	Rec.	1,900,000	20,100,000	13,400,000	17,060,000	52,460,000	-	52,460,000	Bond
Smoke Testing/Dyed Water Flooding	15	Rec.	60,000	60,000	60,000	90,000	270,000	150,000	420,000	Operating
Sewer Lateral Rehabilitation Pilot Project	17	Rec.	-	549,300	549,300	1,098,600	2,197,200	2,750,000	4,947,200	Bond
Relief Sewer Improvement Program	19	Rec.	-	-	-	-	-	4,380,500	4,380,500	IEPA Loan
Stormwater Utility Program	21	Rec.	75,000	-	-	-	75,000	-	75,000	Operating
Combined Sewer GIS Layer	22	Contingent	-			150,000	150,000		150,000	Operating
RainReady Public/Private Cost share Program	23	Contingent	72,500	72,500	72,500	145,000	362,500	362,500	725,000	Operating
Permanent Sanitary Flow Meters	24	Contingent	-	-	-	64,000	64,000	125,000	189,000	Operating
Total			**4,776,700**	**23,445,800**	**15,889,800**	**22,350,600**	**66,462,900**	**17,273,000**	**83,735,900**	Operating

Proposed Financing	2017	2018	2019	2020 & 2021	Five-Year Total	2022-2026	Ten-Year Total
Sewer Fund- Operations	886,700	776,500	790,500	1,782,000	4,235,700	4,042,500	8,278,200
Sewer Fund- Debt/IEPA	3,890,000	22,669,300	15,099,300	20,568,600	62,227,200	13,230,500	75,457,700
Total	**4,776,700**	**23,445,800**	**15,889,800**	**22,350,600**	**66,462,900**	**17,273,000**	**83,735,900**

Project Rating

Critical	2,649,200	1,429,000	1,773,000	3,703,000	9,554,200	9,385,000	18,939,200
Recommended	2,127,500	22,016,800	14,116,800	18,647,600	56,908,700	7,888,000	64,796,700
Contingent	-	-	-	-	-	-	-
Total	**4,776,700**	**23,445,800**	**15,889,800**	**22,350,600**	**66,462,900**	**17,273,000**	**83,735,900**

Clean Out Pumping Station Sump	2023	$40,000	Operating
Sewer Fund-Sewer Improvements-SWPS	2028	$45,000	Operating

X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History
2018 $35,000
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 2018 at which accumulated debris were removed at the cost of $35,000.

In FY 2023, clean the sump areas at the Storm Water Pumping Station (SWPS) at an estimated cost of $40,000.

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

SWPS Electrical Improvements	2019	$20,000	Operation
Sewer Fund-Sewer Improvements-SWPS	2020	$1,200,000	Bond

- 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

2019 Perform a conceptual report on the electrical improvements to format the outlines of the design including scale, setup and cost estimate.

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 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 2019, it is proposed to perform a conceptual study on the electrical improvements to format the outlines of the design including scale, setup and updated cost estimate.

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

The conceptual study was added to FY2019 at an estimated cost of $20,000.

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

Pump Renovations	2020	$35,000	Operating
Sewer Fund-Sewer Improvements-SWPS	2021	$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 2020, perform preventative maintenance repairs to Storm Water Pumping Station Pump 3.
In FY 2021, 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 2020. 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

Sewer Lining and Rehabilitation	2019	$ 1,970,000	IEPA Loan
Sewer Fund-Sewer Improvements-Sewer	2020	$ 820,000	
Collection System	2021	$ 1,150,000	
	2022	$ 1,190,000	
	2023	$ 1,220,000	

X Critical
\- Recommended
\- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History

2018	$1,150,000	IEPA Loan
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.

By the end of 2018, approximately 45% of the separate sanitary sewer system will be lined. Approximately 26 miles of unlined sewers remain. In the combined sewer system, nearly 17% of the sewers will be lined by the end of 2018, with approximately 41 miles remaining. It is estimated that both the separate and combined sewer systems will be lined in approximately 29 years at the current funding level of $820,000 per year.

Project Update

It is anticipated that an additional $120,000 to $300,000 is 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. 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 200-500 connections or 100% of the lateral connections in a sewer lining program at an estimated cost of $600/connection. It is anticipated that 100% of the connections will require grout for vitrified clay pipe (VCP) sewers, which makeup the majority of sewers in Wilmette's sanitary and combined sewer systems.

The additional funding for grouting laterals will be added to the requested budget beginning in 2021 in anticipation of a new facility plan to allow the current plan, which has already been approved by the IEPA, to be completed under the currently proposed annual expenditure of $820,000. Funding for 2019 was added in the amount of $1,970,000 to allow 2 years of the current facility plan to be completed concurrently and the lining of Central Avenue ahead of its reconstruction. The current funding level of $820,000 was held through 2020 and will finish out the existing facility plan. Funding levels from 2021-2023 were added to include the grouting of service laterals and a 3% escalation factor per year.

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	2019	$ 327,500	Operating
Sewer Fund-Sewer Improvements-Sewer Collection System	2020	$ 337,000	
	2021	$ 346,000	
	2022	$ 355,500	
	2023	$ 367,000	

X Critical
- Recommended
- Contingent on Funding

Failed Sewer

Failed Sewer

Sewer in Good Condition

Original Purchase Date & Cost
N/A

Funding History

2018	$421,270	Operating
2017	$309,000	Operating
2016	$197,305	Operating
2015	$280,483	Operating
2014	$275,298	Operating
2013	$202,785	Operating
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.

Project Update

Funding projections for FY 2023 have been added.

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	2019	$266,700	Operating
Sewer Fund-Sewer Improvements-Sewer Collection System	2020	$272,000	
	2021	$277,000	
	2022	$282,500	
	2023	$288,000	

X Critical
\- Recommended
\- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History

2018	$261,500	Operating
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).

- $179,200 to cover the cost of televising/cleaning approximately 14 miles (9%) of main line sewers. The Village's sewer systems contain 53.5 miles of storm sewer mains, 47.8 miles of sanitary sewer mains, and 49.3 miles of combination sewer mains. In addition to the contractual sewer televising, the Village's in-house Water/Sewer crew cleans at least 2% of the total sewer system. The 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. However, based on the age of the Village's

sewers, the best management practices would be to clean the sewers once every 7 years or 14-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:

Year	Cost	Quantity (LF)	Cost/Quantity ($/LF)
2017	$174,000	72,658 LF	$2.39/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

Budget projections for FY 2023 were added.

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 $85,000 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 liming 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.

As part of the plan development, the consultant will also be tasked with developing a fiscal sustainability plan (FSP), which is similar to an asset management plan for the sewer system. This is an administrative requirement for all loan recipients who submit an application after October 1, 2014 due to an amendment to the Federal Water Pollution Control Act signed into law in June of 2014. At a minimum, the FSP must include the following four items:

1. Inventory of critical assets that are part of the treatment works;
2. Evaluation of the condition and performance of inventoried assets or asset groupings;
3. Certification that the recipient has evaluated and will be implementing water and energy conservation efforts as a part of the plan; and
4. A plan for maintaining, repairing, funding, and as necessary, replacing the treatment works.

Project Update

The total anticipated funding amount has been increased from $75,000 to $85,000 to include the fiscal sustainability plan. The plan development and approval through the IEPA is anticipated to be a 2-year process.

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 60-100+ 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

Neighborhood Storage Project	2019	$1.9 million	Bond
Sewer Fund-Sewer Improvements-Sewer Collection System	2020	$20.1 million	
	2021	$13.4 million	
	2022	$17.0 million	
	2023	$60,000	

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History
2018 $500,000
2017 $114,933 (Value Engineering Study)
2015 $0
2014 $327,000 (Storm study)

Project Description & Justification

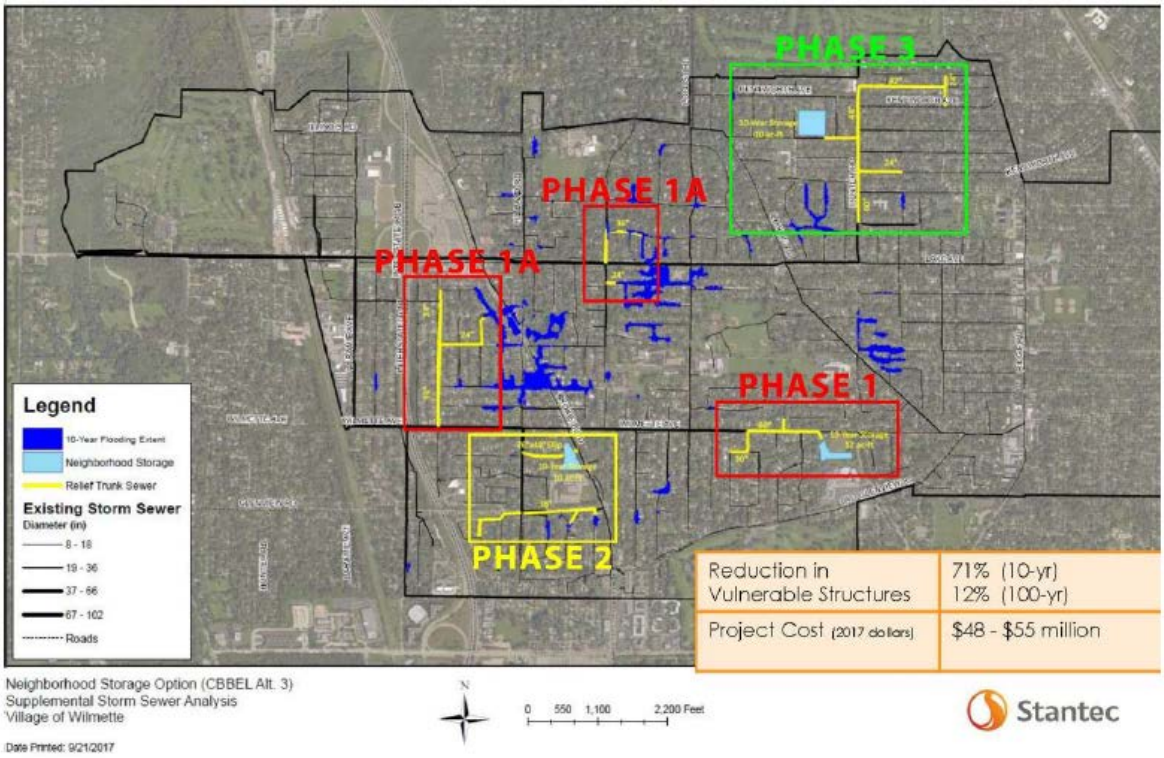
The Neighborhood Storage Project will improve the performance of the separate storm sewer system west of Ridge Road. The system can currently convey a 2 to 3-year rain event, but the three new storage areas and associated piping will improve the system by providing 10-yr protection for much of west Wilmette.

2018 and 2019 are dedicated toward preliminary engineering and design and bidding for Phase 1. The schedule and costs for the three construction phases is provided below.

Year	Project Phase	Estimated Budget [1]
2018/2019	Prelim Eng and Phase 1 Design	$2.4 million[2]
Late 2019/2020	Phase 1 Construction (Centennial/Community Playfield Storage and Relief Sewer Construction_	$19.4 million
2020	Phase 2 Design	$744,000
2021	Phase 2 Construction (Hibbard Park)	$12.4 million
2021	Phase 3 Design	$1.02 million
2022	Phase 3 Construction (Thornwood Park)	$17 million

[1] Costs are in 2017 dollars and include a 20% construction contingency. Cost do not include park district amenities that may be added during the preliminary engineering phase.

[2] It is estimated that $500,000 of the $2.4 million will be spent in 2018 and the balance of $1.9 million will be spent in 2019.



After the construction of the Neighborhood Storage project the Village Board directed staff to perform an evaluation of the effectiveness of the project. $60,000 has been added to 2023 to perform flow monitoring, a model update and report on the benefits and remaining vulnerabilities of the project including possible next steps to continue upgrading the system.

Project Update

This project was approved by the Village Board on April 17, 2018.

Project Alternative

The alternative to this project is green infrastructure improvements that would not be as effective in mitigating neighborhood 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 basin maintenance.
Personnel Costs	None
Training Costs	None as the Public Works employees already have the knowledge to maintain the new storm sewer amenities.

Smoke Testing / Dyed Water Flooding	2019	$60,000	Operating
Sewer Fund-Sewer Improvements-Sewer Collection System	2020	$60,000	
	2021	$60,000	
	2022	$60,000	
	2023	$30,000	

-	Critical
X	Recommended
	Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History

2018	$ 65,000
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

Since 2013, the Village has completed approximately 158,000 feet of smoke testing in the Princeton basin. 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

The annual budget for smoke testing and the I/I reduction program has been reduced from $130,000 to $60,000 for the next five years. Once the smoke testing is completed in 2019, the remainder of the work is correcting public sector defects.

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 Pilot Project	2020	$ 549,300	Bond
	2021	$ 549,300	
	2022	$ 549,300	
	2023	$ 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 pilot project is proposed to be scheduled over two years, however the CIP request assumes it will continue as an annual program through 2023.

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

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 (8th Street to 5th Street, 24-inch) 9th Street (Gregory Avenue to Oakwood Avenue, 24-inches)
2020[4]	Chestnut Avenue (Sheridan Road to 8th 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)
2022[5]	11th Street (Lake to Forest, 24-inch) Elmwood Avenue (Michigan to Sheridan Road, 24-inches) Forest Avenue (Michigan Avenue to 6th Street, 24-inches)
2023[6]	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

Stormwater Utility Program 2019 $75,000 Operating
Sewer Fund-Sewer Improvements-Sewer Collection System

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History
2018 - $72,093

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 had to fund $50,000 in 2018 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.

A contract was entered into for the feasibility phase in 2018. Work is expected to begin in the fall of 2018 and continue into 2019. Should the Village Board implement a stormwater utility to fund the Neighborhood Storage Improvements on page 13, this project will fund the implementation phase.

Project Update
This is a new project for 2019.

Project Alternative
The alternative is to use the existing sewer fee to fund the Neighborhood Storage Improvements.

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

Combined Sewer System GIS Layer 2022 $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

This project is to hire a consulting firm to gather necessary field data to develop a GIS layer of the combined sewer system. GIS layers of the separate sanitary and storm sewer systems have been previously developed by professional firms. It is recommended that the combined layer be professionally developed for the following reasons:

- GIS interns do not have the technical knowledge to accurately log system attributes;
- Existing staff has the technical capability but not the time. It is estimated that it would take several years to document the entire combined system;
- Hiring a firm will ensure the same quality as the storm and sanitary layers.

Project Update

This is a new project for 2019.

Project Alternative

The alternative to this project is to collect GIS data with in-house full-time or seasonal staff.

Operating Budget Impact

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

ROUTINE	
Department Budget	Sewer Capital
Account Number Description	Combined Sewer GIS
Account Number	40957090-470400-80703

RainReady Program	2019	$72,500	Operating
Sewer Fund-Sewer Improvements-Sewer Collection System	2020	$72,500	
	2021	$72,500	
	2022	$72,500	
- Critical	2023	$72,500	
- Recommended			
X Contingent on Funding			

Original Purchase Date & Cost
N/A

Funding History
N/A

Project Description & Justification

This project is to partner with Center for Neighborhood Technology (CNT) to administer a RainReady Green Infrastructure cost-share program . The goal of the program is to encourage resident to install green infrastructure on their property to reduce, slow and/or redirect stormwater from entering the public storm sewer system. The homeoner benefits by reducing ponding and enhancing the aesthetics of their property with environmentally beneficial landscaping and the Village benefits from less runoff from private property entering the public sewer system.

The $72,500 budget is broken into the following components:

Program administration: $40,000

Grants: 25 @ $1,300 = $32,500

Project Update

This is a new project for 2019.

Project Alternative

There is no alternative to this program.

Operating Budget Impact

Is this purchase *routine* _____ or __*X*__ *non-routine?* NON-ROUTINE	
Department Budget	Sewer Capital
Account Number Description	RainReady program
Account Number	40957090-470400-80703

Permanent Sanitary Flow Meters 2023 $64,000 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

This project includes installing one permanent flow meter in each of the two sanitary sewer basins (Harms and Princeton) serving west Wilmette.

The purpose of installing permanent flow meters in the sanitary sewer system is to record and measure wet weather flows to determine the impact of the Village's Inflow and Infiltration (I/I) removal program. Since 2012, the Village has performed various improvements to the sanitary sewer system that have resulted in reductions in groundwater inflow and infiltration. These projects include manhole rehabilitation, sewer lining and private property mitigation. The majority of the Princeton Basin has been smoke tested and several areas have been dyed water flooded. As the Village continues with additional enforcement of private sector defects and improvements to the public system, it would be beneficial to track progress on I/I reduction.

Project Update

This is a new project for 2023.

Project Alternative

There is no alternative to this project.

Operating Budget Impact

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

NON-ROUTINE	
Maintenance Costs	$25,000 annual cost to inspect, troubleshoot and maintain the meters and to write an annual report
Personnel Costs	None
Training Costs	None as this function will be performed by an outside consultant.

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 2028.

Water improvements are funded through the Village's water operating fund and general obligation bond issues.

The following improvements are proposed for 2019:

Improvement	Cost of Improvement	Funding Source	Nature of Project
Electrical Improvements Program Phase I	5,000,000	IEPA	Tier 5
Treament Process Improvements Program Phase I	40,000	Operating	Tier 4
Instrumentation Replacement	40,000	Operating	Tier 4
Electrical Improvements Program Phase II	220,000	Operating	Tier 4
Water Meter Replacement Program	88,000	Operating	Tier 4
Distribution System Valve Improvements	82,000	Operating	Critical
Repairs - Water Transmission Main	42,000	Operating	Critical
Water Main Program	1,818,300	Bond	Recommended
Water Main Surge Suppressors	17,500	Operating	Recommended
Total:	**$7,347,800**		

Ten Year Capital Improvement Program
Water Summary

Facility Improvements	Page	Risk Rating	2019	2020	2021	2022-2023	Five-Year Total	2024-2028	Ten-Year Total	Funding
WATER PLANT FACILITY										
Electrical Improvements Program Phase I	2	Tier 5	5,000,000	2,900,000	-	-	7,900,000	-	7,900,000	IEPA
Treament Process Improvements Program Phase I	6	Tier 4	40,000	230,000	200,000	498,000	968,000	-	968,000	Operating
Instrumentation Replacement	10	Tier 4	40,000	-	-	-	40,000	-	40,000	Operating
Electrical Improvements Program Phase II	13	Tier 4	220,000	-	620,000	-	840,000	-	840,000	Opr./Bond
Rebuild Wash-water Pumps	16	Tier 4	-	60,000	50,000	-	110,000	-	110,000	Operating
Roof Repairs	18	Tier 4	-	-	220,000	-	220,000	-	220,000	Bond
Treament Process Improvements Program Phase II	21	Tier 4	-	-	-	500,000	500,000	2,000,000	2,500,000	IEPA
Water Intakes Improvements	23	Tier 4	-	-	-	770,000	770,000	14,000,000	14,770,000	IEPA
Replace Low Lift Pump 23	25	Tier 3	-	-	-	360,000	360,000	-	360,000	Operating
Treament Process Improvements Program Phase III	27	Tier 3	-	-	-	-	-	1,360,000	1,360,000	Bond
1971 Low Lift Station Influent Valve Replacement	31	Tier 2	-	-	-	-	-	250,000	250,000	Operating
WATER PLANT SERVICES										
Water Intakes Inspection	33	Tier 2	-	-	20,000		20,000	22,000	42,000	Operating
Rebuild High Lift Pumps	35	Tier 2	-	40,000	-	-	40,000	-	40,000	Operating
Tank Maintenance Services	37	Tier 2	-	-	40,000	-	40,000	60,000	100,000	Operating
WATER DISTRIBUTION IMPROVEMENTS										
Water Meter Replacement Program	39	Tier 4	88,000	88,000	88,000	100,000	364,000	200,000	564,000	Operating
Automatic Meter Reading Program	42	Tier 4	-	-	-	2,500,000	2,500,000	2,500,000	5,000,000	Bond
Replace Standpipe Isolation Valve	44	Tier 3	-	-	60,000	-	60,000	-	60,000	Operating
ENGINEERING & PUBLIC WORKS IMPROVEMENTS										
Distribution System Valve Improvements	46	Critical	82,000	88,000	90,500	188,500	449,000	475,000	924,000	Operating
Repairs - Water Transmission Main	48	Critical	42,000	-	-	-	42,000	-	42,000	Operating
Unidirectional Water Main Flushing	49	Rec.	-	45,000	45,000	-	90,000	150,000	240,000	Bond/Ope.
Water Main Program	51	Rec.	1,818,300	2,077,400	2,039,000	4,263,000	10,197,700	5,873,000	16,070,700	Operating
Water Main Surge Suppressors	53	Rec.	17,500	17,500	17,500	35,000	87,500	-	87,500	Operating
Total			**7,347,800**	**5,545,900**	**3,490,000**	**9,214,500**	**25,598,200**	**26,890,000**	**52,488,200**	

Proposed Financing	2019	2020	2021	2022-2023	Five-Year Total	2024-2028	Ten-Year Total
Water Fund- Operations	529,500	568,500	2,650,000	5,444,500	13,088,200	7,030,000	21,478,200
Water Fund- Debt Financing	6,818,300	4,977,400	840,000	3,770,000	12,510,000	19,860,000	31,010,000
Total	**7,347,800**	**5,545,900**	**3,490,000**	**9,214,500**	**25,598,200**	**26,890,000**	**52,488,200**

Project Rating	2018	2019	2020	2021-2022	Five-Year Total	2023-2027	Ten-Year Total
Tier 5	5,000,000	2,900,000	-	-	7,900,000	-	7,900,000
Tier 4	388,000	378,000	1,178,000	4,368,000	6,312,000	18,700,000	25,012,000
Tier 3	-	-	60,000	360,000	420,000	1,360,000	1,780,000
Tier 2	-	40,000	60,000	-	100,000	332,000	432,000
Critical	124,000	88,000	90,500	188,500	491,000	475,000	966,000
Recommended	1,835,800	2,139,900	2,101,500	4,298,000	10,375,200	6,023,000	16,398,200
Contingent	-	-	-	-	-	-	-
Total	**7,347,800**	**5,545,900**	**3,490,000**	**9,214,500**	**25,598,200**	**26,890,000**	**52,488,200**

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 2019 $5,000,000 IEPA Loan
Phase I 2020 $2,900,000
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

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
Start construction on the generators building	2018	$500,000

Project Description & Justification

2019 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
2020 Completion of the construction and installation of the electrical improvements at a projected cost of $2,900,000

The phase I of the electrical improvements program consists of the following projects:

<u>Replacement of the main switchgear and Motor Control Centers (MCCs):</u>
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):

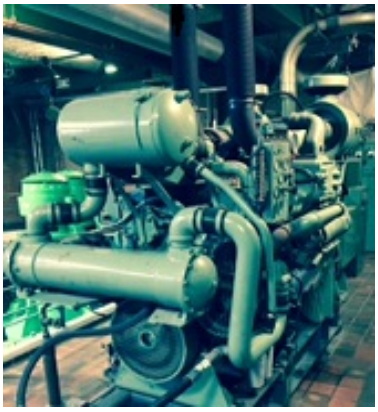
This project consists of replacing MCC-B and MCC-C located in the 1956 building. These MCCs provide power to significant amount of equipment at the plant such wash water pumps, chemical metering pumps, recycling pumps…etc. The MCCs have exceeded their useful life and have been determined to be in poor 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. These two additions will have green roofs by installing vegetated roofs that would assist in blending the new structures with their surroundings and extend the life of the roofs.

The total estimated cost of this project is detailed below:

Cost Type	Estimated Amount	Comments
Construction Contract	$7,343,511	Contract Awarded on 4/10/2017
Engineering Construction Services	$628,692	Contract Awarded on 1/9/2018
Contingencies	$427,797	Budgeting 5% in contingencies
Total	$8,400,000	

Project Update

IEPA low interest loan was secured for this project in May 2018. The loan is a 20-year term with an interest rate of 1.76%.

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

Treatment Process Improvements Program – Phase I	2019	$40,000	Operating
	2020	$230,000	
	2021	$200,000	
	2022	$498,000	

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

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

2019 Replace the low lift flow meters located in the 1933 and 1971 lines at a projected cost of $40,000
2020 Replace the coagulant and fluoride chemicals bulk storage tanks at a projected cost of $230,000
2021 Replace the hypochlorite (disinfectant) bulk storage tanks at a projected cost of $200,000
2022 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 2019 CIP

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 $40,000.

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.

The projected cost to replace the chemical storage tanks mentioned above is $230,000.

Projects Proposed in FY 2021

Replacement of the Water Treatment Chemicals Bulk Storage Tanks

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 hypo bulk storage tanks mentioned above is $200,000.

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 project in FY 2019 is reduced from $190,000 to $80,000 due to savings realized from in-house installation and change of meters type.

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 2019 $40,000 Operating

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

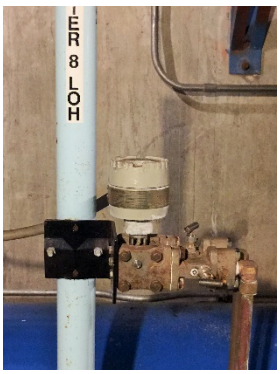
Turbidimeters and chlorine analyzers	2015	$40,000	Operating
Replacement of differential pressure transmitters	2018	$50,000	Operating

Project Description & Justification

2019 Replace 14 differential pressure transmitters and the level transmitters at an estimated cost of $40,000.

<u>Differential Pressure Transmitters</u>

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

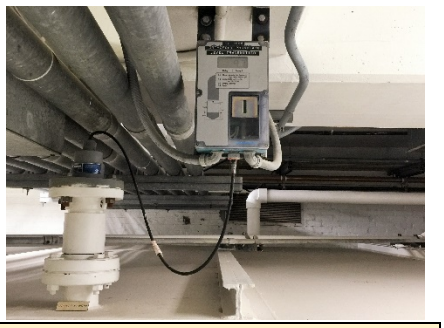
Transmitters can have a useful life between 20 to 30 years. Many of these transmitters have either reached or exceeded the useful life. Failure to these transmitters will have a moderate severity (such as filtration malfunction, disruption in pumping and chemical feeding…etc.) impact to the pumping and treatment operations.

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 10 ultrasonic level transmitters and additional 14 differential pressure transmitters at a projected cost of $40,000.

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

There are no changes in this CIP.

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	2019	$220,000	Operating
Phase II	2021	$620,000	Bond

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

Roundhouse MCC 1971 - part of 1971 expansion

Funding History

N/A

Project Description & Justification

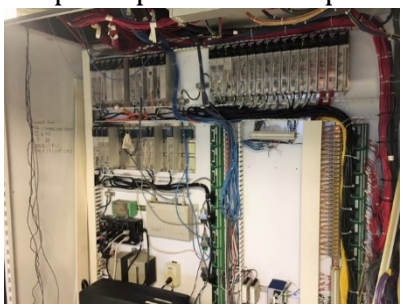
2019 Replacement of the Programmable Logic Circuits (PLCs) and SCADA integration of the new electrical equipment from the electrical upgrade project at a projected cost of $220,000

2021 Replace the low lift station roundhouse Motor Control Center (MCC) at a projected cost of $120,000

2021 Replace the Variable Frequency Drives (VFDs) for Low Lift (LL) pumps #22&27 at a projected cost of $500,000

<u>Replacement of the Programmable Logic Controllers (PLCs) "A" and "B" Project</u>

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. It is very beneficial to perform this work in coordination with the electrical improvements to minimize the impact on operation and reduce cost by eliminating installation of signals twice.

The projected cost of replacement including programming is $220,000.

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

Projects Proposed For FY 2021

Replacement of the Low Lift Station VFDs

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

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 Electrical Improvement Projects II & III were combined for the FY2021. The Electrical Improvements Project III was eliminated.

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

	2020	$60,000	Operating
Water Fund– Water Plant Facility	2021	$50,000	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

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

2020 rebuild wash-water pump #24 at a projected cost of $60,000
2021 rebuild wash-water pump #15 at a projected cost of $50,000

For FY 2020: **<u>Rebuild Wash-water Pump #24</u>**

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 2021: **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 2019 & 2020 are postponed to FY 2020 & 2021 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 2020 $220,000 Bond

Water Fund–Plant Facility Improvements

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

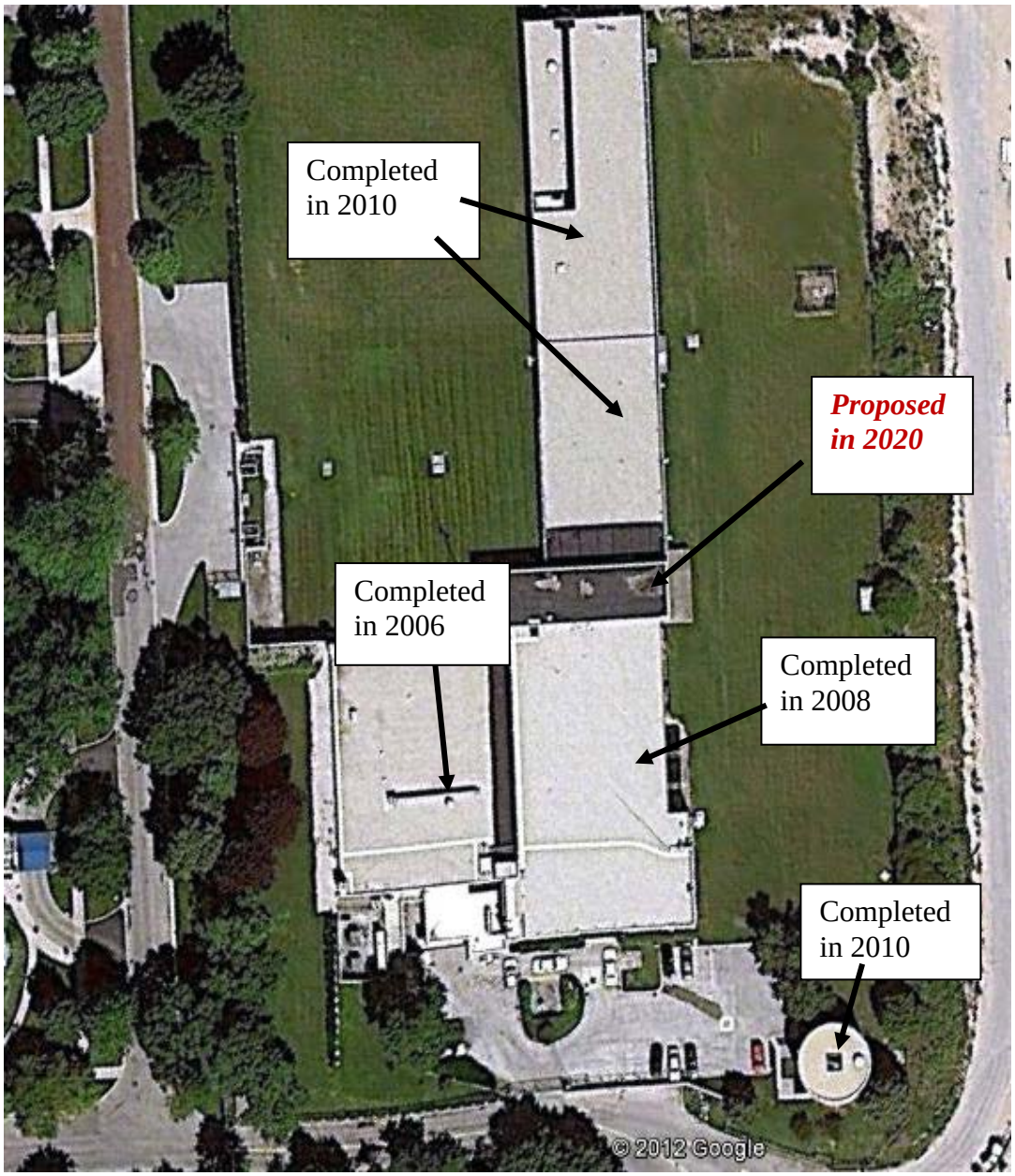


Figure 1: The various roof areas at the water plant facility shown with the last rebuild date or proposed date.

Treatment Process Improvements Program – Phase II	2022	$50,000	IEPA Loan
	2023	$450,000	IEPA Loan
Water Fund–Water Plant Facility	2024	$2,000,000	IEPA Loan

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 Conceptual study to decide on best option for the type of the underdrain system for the filters as well as the sizing of the media selected. Additionally, submittal for an IEPA SRF loan

2023 Detailed Engineering design of the replacement of the 1933 filters underdrain system at a projected cost of $450,000

2024 Construction and installation of the 1933 filters underdrain system at a projected cost of $2,000,000


FILTERS 1-4 MEDIA&UNDERDRAIN SYSTEM

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.

For FY2022, it is proposed to conduct a conceptual study to allow for design decisions on the type of the underdrain and media sizing of the 1933 filters. Additionally, the conceptual study would allow us to submit for an IEPA loan with enough details to be placed on the loans list. The estimated cost of the study is $50,000.

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

A conceptual study was added for FY 2022 at an estimated cost of $50,000.

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

Water Fund–Plant Facility Improvements

2022	$70,000	IEPA Loan
2023	$700,000	
2024-2026	$14,000,000	

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

2022	Conceptual study and loan application
2023	Detailed engineering design of the intake improvements and permitting at a projected cost of $700,000
2024-2026	Execution of the bidding process and start of construction at a projected cost of $14,000,000

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 2023 $360,000 Operating

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

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	Bond
Program – Phase III	2025	$140,000	
Water Fund–Water Plant Facility	2026	$470,000	

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 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

<u>Filter Valves Replacement</u>

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

<u>High Lift Flow Meter Vault "A" Replacement</u>

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 beatings 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

2025 $250,000 Operating

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

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

2021	$20,000	Operating
2024	$22,000	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

2015	$9,500
2018	$18,000

Project Description & Justification

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.

2024 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 $22,000.

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 2018.

In FY 2021, 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 $20,000.

In FY 2024, it is proposed to perform the same services at a projected cost of $22,000.

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

FY2024 was added to the CIP at an estimated cost of $22,000.

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 2020 $40,000 Operating

Water Fund–Water Plant Services

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 2020, 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	15,121
--	HL #2	2015	2,655

--	HL #3	2017	1,520
--	HL #4	2014	6,646
--	HL #5	2010	2,656
2020	HL #9	New 1988	10,830
--	HL #12 VFD	2013	32,811
--	HL #20	2017	81

*at least 30k hours; unable to verify actual hours.

Since this program began in 2001, seven out of the eight 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

The project has been postponed from FY2019 to FY2020 due to lower hours of service.

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 2021 $40,000 Operating

Water Fund- Water Plant Services

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 2021, 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

The project has been postponed from FY2019 to FY2021 due to lower sedimentation in the tanks upon inspection in 2018.

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

Water Meter Replacement Program

Water Fund–Water Distribution Improvements

2019	$88,000	Operating
2020	$88,000	
2021	$88,000	
2022	$50,000	
2023	$50,000	

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

N/A

Funding History

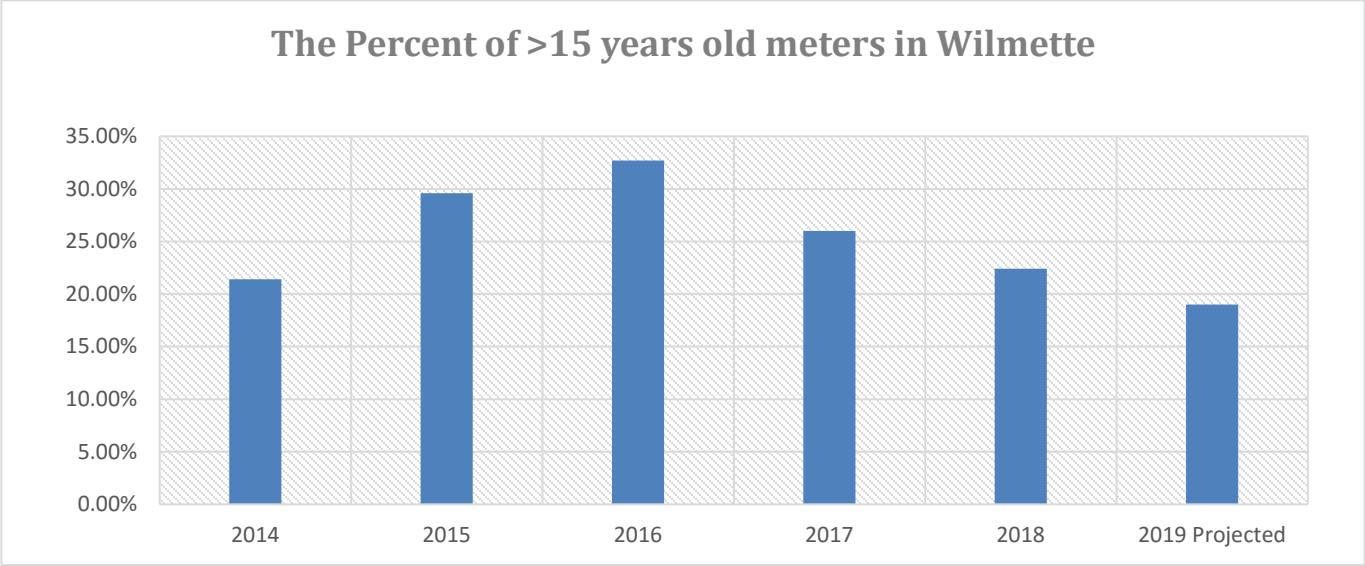
2018	$88,000
2017	$88,000
2016	$88,000
2015	$33,000
2014	$33,000
2013	$33,000

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 2018:

Age	Number of meters	Percent
< 5 years	3,157	34.9%
5-10 years	1,551	17.4%
10 – 15 years	2,293	25.3%
>15 years	2,028	22.4%

In FY 2019-21, 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 2020 $2,500,000 Bond/IEPA

Water Fund–Water Distribution Improvements

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

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 2020, 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 2020, 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 existing AMRs with cellular based AMRs. A replacement of this size will require hiring an outside Contractor to achieve it. 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

The project has been moved to FY2020 from FY2022.

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 2021 $60,000 Operating

Water Fund–Water Distribution Improvements

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	2019	$ 82,000	Operating
Water Fund- Distribution Improvements	2020	$ 88,000	
	2021	$ 90,500	
	2022	$ 93,000	
	2023	$ 95,500	

X Critical
\- Recommended
\- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History

2018	$ 67,600	Operating
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 Public Works Department, however, only three valves were installed in 2016 due to both pricing increase and larger valve sizes, and only 3 valves were installed in 2017 due to pricing increases. Additionally, approximately 30 inoperable valves were identified by the valve exercise program in 2017, which is nearly 60% complete. It is anticipated a total of 60 inoperable valves will need to be addressed as the valve exercise program continues. Staff recommends replacing 4-5 valves annually.

Project Update

The 2019-2022 budgets have been changed to reflect a 4-5 valve annual replacement program. Budget projections for FY 2023 have been added.

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

Repairs -Water Transmission Main 2019 $42,000 Operating
Water Fund- Distribution Improvements

X Critical
- Recommended
- Contingent on Funding

Original Purchase Date & Cost

N/A

Funding History

N/A

Project Description & Justification

For 2019, this project entails contractual repair of two corporation valves (i.e. stops or taps) on the transmission main, which have deteriorated beyond repair (see locations below).

- 24-inch transmission main –west of 10th, in the alley between Forest and Elmwood Aves
- 36-inch transmission main – on Elmwood Ave, just west of Ridge Rd

This is specialty repair requiring removal of old and custom fabrication, welding of compatible saddle section to facilitate install of new corporation valves.

For 2020, project includes repair of approximately 32 air relief vents located at several different locations on the water transmission mains. The transmission mains are gravity fed and air pockets develop as the water main navigates at different subsurface elevations while traversing across the Village. The changes in elevation creates turbulence, promoting formation of air pockets on the top portion of the pipe. Air slows down gravity flow and restricts movement of water. Therefore, the air relief vents assist by releasing air build-up.

Project Update

This is a new project request as part of the 2019 CIP Budget.

Project Alternative

Delay the project and reschedule the work during later years, although, not recommended as the continued state of disrepair can worsen and become more destructive.

Operating Budget Impact

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

ROUTINE	
Account Number/Description	41838090-421000-
Maintenance Costs	None
Personnel Costs	None
Training Costs	None

Unidirectional Water Main Flushing	2020	$45,000	Operating
Water Fund- Distribution Improvements	2021	$45,000	
	2024	$50,000	
	2025	$50,000	
	2028	$50,000	
	2029	$50,000	

- \- Critical
- X Recommended
- \- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History

2018	$30,393 (Year 2) Valve Assessment Study, 650 valves
2017	$27,715 (Year 1) Valve Assessment Study, 600 valves
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 flushing of municipal water distribution systems 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. UDF provides direct flow to the hydrant from one direction, creating a sufficient velocity during the flushing operation to clean out the water main. According to the AWWA, while UDF is more time consuming than conventional hydrant flushing, 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. This operation was completed in 2006/2007 and most recently in 2010/2011, with half the system completed each year.

Project Update

This program (UDF) was deferred from 2017-18 to 2020-21 to allow for a valve assessment study (VAS) 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 be made aware in advance of all locations in disrepair. Therefore, the contractor designing and performing the UDF program will not have to deal with the unknown and 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 results in lower costs by reducing redundancies and providing more accurate valve information upfront, translating to a more efficient UDF design and implementation. Having this information is also critical for coordinating a routine, annual valve-exercising program (1/4 of system per year). The anticipated

cost for future UDF programs will also drop from $120,000 (or $60,000 per year) to $90,000 (or $45,000 per year), or possibly even lower, by having a VAS and spatially accurate GIS attribute layer (i.e. water valves) completed upfront.

On October 24, 2017, the Village Board approved a contract in the amount of $53,368 with Associated Technical Services (ATS), Villa Park, IL for water main valve assessment and operation with work scheduled over two years (2017-18). The project entails assessment of all valves in the water distribution system (or 1,250 total). In late 2017, the contractor completed assessment of 600 valves and 650 valves remain for 2018; includes all valves servicing the 24" and 36" transmission mains. All valve attributes and GPS coordinates have been uploaded to the GIS master file. Thus far, for Year 1, there are 68 valves (i.e. 44 distribution, 24 services) reported in disrepair and/or inoperable. Staff projects similar totals for Year 2. Repairs will be scheduled for the balance of 2018 and 2019, in preparation for UDF in 2020-21. Large-scale repairs and valve replacements will be scheduled through the valve replacement program (i.e. CIP Budget –Contractual Services) whereas in-house crews will address minor repairs. UDF operations will be able to work around known valves in disrepair.

If approved, the UDF program would be directed through a Request for Bid (RFB) 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

2019 $1,818,300 Bond
2020 $2,077,400 Bond
2021 $2,039,000 Operating
2022 $2,100,000 Operating
2023 $2,163,000 Operating

- \- Critical
- X Recommended
- \- Contingent on Funding

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-$100,000. 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 $2.1 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, scheduled for 2019 and 2020, respectively. 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 paid by the Village. The estimated costs for the Locust Road and Central Avenue water main replacements are $1,438,298 and $2,077,329. The water main on Lake Avenue between Skokie Blvd. and Hibbard Rd. is included for 2019 since it has been experiencing failures at a high rate and in need of immediate replacement.

2019					
Street	**From**	**To**	**Length**	**Construction Cost Estimate**	**Engineering[1]**
Lake Avenue	Skokie Blvd.	Hibbard Rd.	950	$ 380,000	$ -
Locust Road	Wilmette Ave.	Lake Ave.	2,600	$1,438,300	$ -
2020					
Central Avenue	Green Bay Rd.	Sheridan Rd.	5,600	$2,077,400	$ -
2021					

TBD	NA	NA	5,490	$ 2,039,000	$ 245,000
2022					
TBD	NA	NA	5,490	$ 2,100,000	$ 252,000
2023					
TBD	NA	NA	5,490	$ 2,163,000	$ 260,000

[1]Amounts included on Design & Construction Services CIP page

The water main replacement program will also require engineering and construction services estimated at 12% ($252,000/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. Costs have been updated to reflect regional water main construction rate trends. Lake Ave has been scheduled for replacement in 2019 and Central Avenue has been moved from 2019 to 2020.

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?*

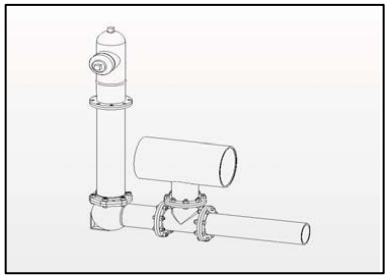
ROUTINE	
Account Number/Description	41838090- Water Main Replacement
Maintenance Costs	None
Personnel Costs	$195,000 for engineering services
Training Costs	None

Water Main -Surge Suppressors	2019	$17,500	Operating
Water Fund- Distribution Improvements	2020	$17,500	
	2021	$17,500	
	2022	$17,500	
	2023	$17,500	

- Critical
X Recommended
- Contingent on Funding

Original Purchase Date & Cost
N/A

Funding History
N/A



Project Description & Justification

This project entails purchase of five-each surge suppressors for the Village's water distribution system, with 25 units in total scheduled over a 5-year period. The suppressors act as a safeguard against harmful water hammer effect and proactively protect the water distribution system. Currently, there are no surge suppressors attached to the system. In-house crews will install the new units, which attach to fire hydrant feed stems. When possible, the work will coincide with routine fire hydrant replacements, approximately 10-each year.

Water hammer or pressure surge is a common occurrence in water distribution systems and triggers whenever water is forced to stop or change direction suddenly, such as, when a valve closes or a fire hydrant opens abruptly. Other system actions precipitating water hammering include: fast startup or shutdown of pumps, power interruptions, check valves slamming shut on reverse flow and water column separation. While the water hammer effect occurs on year-round basis, it is most prevalent during summer months when water demand is at its peak and hydrant flushing is commonplace.

When combined with other factors, such as weakened pipes, water hammer can result in water main breaks. Average repair cost of a water main break is $5,000-$6,000 per occurrence. The surge suppressors provide benefit in absorbing the pressure hit as compared to snapping or cracking water pipe. If approved, the new installs will be strategically located in problematic areas or those prone to water main breaks. Staff also recommends inclusion of these devices with water main improvement projects and areas where it ties into old water distribution system.

Project Update

This is a new project request as part of the 2019 CIP Budget.

Project Alternative

Delay the project and reschedule the work during later years.

Operating Budget Impact

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

ROUTINE	
Account Number/Description	41838090-421000-
Maintenance Costs	None
Personnel Costs	None
Training Costs	None