

# CAPITAL IMPROVEMENT PLAN



FY 2020 - 2024



## ***Village of River Forest***

### ***Five Year Capital Improvement Program***

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

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

The CIP is divided into the following sections:

#### **Buildings and Improvements**

**3**

Village facilities include Village Hall which houses Administration, Finance, Building, Police, and Fire operations, the Public Works Garage and the Water Pumping Station, which are located in separate facilities.

#### **Vehicles**

**48 vehicles in the fleet**

The Vehicle section includes an inventory of all the Village vehicles and is subdivided by police, fire and public works vehicles. The detail page for each vehicle to be replaced in 2020 provides a photo of the vehicle, historical cost and repair information, a description of how the vehicle is used, and its life expectancy.

#### **Equipment**

The Equipment section lists the capital equipment items that need to be repaired, replaced or acquired new over the next five years. This section includes equipment for the Police, Fire, and Public Works operations.

#### **Information Technology**

**94 computers/tablets, 1 physical server & several virtual servers**

The Information Technology (IT) section includes hardware, software, equipment, licenses and consulting costs associated with supporting the robust computer network that supports the Village's day-to-day operations.

#### **Streets, Sidewalks, Alleys**

**31.6 miles**

The Streets program includes annual street resurfacing, alley maintenance, sidewalk and curb maintenance as well as general street patching and maintenance. The annual Street Improvement Program is funded through Motor Fuel Tax (MFT) revenues. The CIP also includes implementation of recommendations from the Safe Routes to School Study (SRTS).

## **Water and Sewer Improvements**

**76.5 miles of sewer and water mains**

The Village annually budgets for the maintenance and repair of the sewer system, including sewer lining, rehab and main repairs. The Village's water system serves a population of more than 11,000. Maintenance of the pumping station and distribution system is essential to the water utility's operation. Annual funding is recommended for water main replacement and rehabilitation. Water main replacement is recommended when a history of line failure or a lack of adequate fire flow exists. Fire flow is the quantity of water available for fire-suppression purposes in excess of that which is required for other purposes. When possible, water main replacement is scheduled to coincide with street improvements to limit the impact of construction activity to a particular area.

Equipment improvements at the Water Pumping Station can be found in this section.

## ***Village of River Forest***

### ***Financing the Five Year Capital Improvement Program***

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The Five Year Capital Improvement Program (CIP) is financed through the following Village funds or particular revenue sources. The individual project sheet will indicate when the project is intended to be financed by a particular revenues source, such as a grant, within the fund. The proposed FY 2020 funding levels for each fund or source can be found below.

**General Fund** **\$ 317,244**

The General Fund is the major operating fund in the Village's budget and provides for all activities not accounted for in other funds.

**Motor Fuel Tax (MFT)** **\$ 300,000**

The State of Illinois has imposed a gas tax on the privilege of operating motor vehicles on public highways in Illinois. MFT dollars are collected by the State of Illinois and remitted to the municipality on a per capita basis.

**Water & Sewer Fund** **\$ 1,068,780**

The Water and Sewer Fund includes the following revenue sources which assist in funding capital improvements: water and sewer charges and interest income.

**Capital Equipment Replacement Fund (CERF)** **\$ 349,942**

The Capital Equipment Replacement Fund (CERF) is a capital projects fund where Administration, Police, Fire and Public Works Departments set aside funds each year for the eventual replacement of existing equipment and vehicles, and to avoid significant fluctuations in the operating budget from one year to the next. Revenues are provided by transfers from the General and Water and Sewer Funds.

**Water & Sewer - CERF Fund** **\$ -**

The Water & Sewer - CERF Fund is part of the above mentioned CERF, only this portion is funded from Water & Sewer revenues and provides for the eventual replacement of Public Works vehicles utilized for sewer and water functions.

**Capital Improvements Fund** **\$ 1,184,310**

The Capital Improvements Fund is used to account for improvements to buildings, parking lots, municipal lighting systems, alleys, streets and information technology. Revenue sources include red light camera revenue, parking lot fees, grants as well as transfers from other funds.

**Infrastructure Improvement Bond Fund** **\$ 318,311**

The Infrastructure Improvement Bond Fund is a new fund that utilizes the proceeds from the 2018 General Obligation Bond issued using the Village's available debt service extension base. These funds will be used to finance the Street Improvement Project.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Fiscal Year 2020 Budget**

CATEGORY	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Buildings and Improvements	117,260	55,060	55,000	42,000	40,000	309,320
Vehicles	156,182	411,237	935,591	479,919	433,336	2,416,265
Equipment	399,784	346,324	-	99,714	484,634	1,330,456
Information Technology	392,170	333,000	273,000	113,000	125,000	1,236,170
Streets, Sidewalks & Alleys	1,568,811	780,000	875,000	940,000	790,000	4,953,811
Water and Sewer Improvements	904,380	665,500	717,000	612,000	618,000	3,516,880
<b>Total</b>	<b>3,538,587</b>	<b>2,591,121</b>	<b>2,855,591</b>	<b>2,286,633</b>	<b>2,490,970</b>	<b>13,762,902</b>

PROPOSED FUNDING SOURCE	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
General Fund (GF)	317,244	185,000	195,000	195,000	195,000	1,087,244
Motor Fuel Tax Fund (MFT)	300,000	300,000	300,000	300,000	300,000	1,500,000
Water and Sewer Fund (WS)	1,068,780	756,400	787,000	682,000	688,000	3,982,180
Capital Equipment Replacement Fund (CERF)	349,942	723,181	935,591	534,633	696,970	3,240,317
CERF/WS	-	-	-	45,000	221,000	266,000
Capital Improvements Fund (CIF)	1,109,310	626,540	638,000	530,000	390,000	3,293,850
Capital Improvements Fund/Parking Reserve (CIF/PR)	75,000	-	-	-	-	75,000
Infrastructure Improvements Bond Fund (IIBF)	318,311	-	-	-	-	318,311
<b>Totals</b>	<b>3,538,587</b>	<b>2,591,121</b>	<b>2,855,591</b>	<b>2,286,633</b>	<b>2,490,970</b>	<b>13,762,902</b>

## ***Buildings and Improvements – Five Year Capital Improvement Program***

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The Buildings and Improvements section of the Capital Improvement Program (CIP) identifies proposed improvements to the Village Hall, including the Police and Fire Department areas, as well as the Public Works Garage. Proposed improvements may include repair, replacement or the rehabilitation of Village buildings. Building improvements at the Water Pumping Station are also included.

As with other sections of the CIP, these improvements are targeted for specific years and are financed through various methods such as the General Fund, Water and Sewer Fund, Capital Equipment Replacement Fund and the Capital Improvement Fund (CIF).

Improvements planned for FY 2020 include:

<b>Improvement</b>	<b>Cost of Improvement</b>	<b>Funding Source</b>	<b>Nature of Project</b>
Village Hall Improvements	\$ 12,260	CIF	Recommended
Garage Improvements	\$ 50,000	CIF	Critical
Pumping Station Improvements	\$ 55,000	WS	Critical
<b>Total</b>	<b>\$ 117,260</b>		

**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.

Critical projects are highlighted in yellow.

**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.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Buildings and Improvements**  
**Fiscal Year 2020 Budget**

	This Project is:	Fiscal Year					Five Year Total	Funding Source
		2020	2021	2022	2023	2024		
<b>Village Hall</b>							-	
Village Hall Improvements	Recommended	12,260	14,160	55,000	32,000	40,000	153,420	CIF
<b>Public Works</b>							-	
Garage Improvements	Critical	50,000	20,000	-	10,000	-	80,000	CIF
Pumping Station Improvements	Critical	55,000	20,900	-	-	-	75,900	WS
<b>Total</b>		<b>117,260</b>	<b>55,060</b>	<b>55,000</b>	<b>42,000</b>	<b>40,000</b>	<b>309,320</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Water and Sewer Fund (WS)	55,000	20,900	-	-	-	75,900
Capital Improvement Fund (CIF)	62,260	34,160	55,000	42,000	40,000	233,420
<b>Totals</b>	<b>117,260</b>	<b>55,060</b>	<b>55,000</b>	<b>42,000</b>	<b>40,000</b>	<b>309,320</b>



## ***Buildings and Improvements***

<b>Village Hall Improvements</b>	<b>FY 2020</b>	<b>\$12,260</b>	<b>CIF</b>
	<b>FY 2021</b>	<b>\$14,160</b>	<b>CIF</b>
	<b>FY 2022</b>	<b>\$55,000</b>	<b>CIF</b>
	<b>FY 2023</b>	<b>\$32,000</b>	<b>CIF</b>
	<b>FY 2024</b>	<b>\$40,000</b>	<b>CIF</b>

Critical

Recommended

Contingent on Funding

### **Spending History**

FY 2019	\$2,870 (Repaired gutters and downspouts)
FY 2019	\$2,300 (Rewired controls to WSCDC HVAC unit)
FY 2018	\$7,303 (Repair to WSCDC HVAC unit)
FY 2017	\$169,861 (Roof replacement)
FY 2015	\$12,000 (Repair foundation and eliminate seepage: basement level adjacent to Fire Dept.)

### **Project Description & Justification**

The Village Hall, located at 400 Park Avenue, was constructed in 1999 and houses the Village's administrative Staff, both the Police and Fire Departments, and the West Suburban Consolidated Dispatch Center (WSCDC). The majority of janitorial and maintenance tasks and operations are performed and coordinated by the Village's Custodian. Those tasks and operations that cannot be performed by in-house Staff are outsourced.

In 2013, DTZ (a UGL Company) was contracted to conduct a Facility Condition Assessment (FCA) of the Village Hall (referred to in DTZ's report as the Administration Building). The purpose of the assessment was to evaluate the overall condition of the buildings and sites, and provide information regarding the condition and life expectancy of the major components. A follow up to this assessment was conducted in 2016 by the Garland company to provide thermal scans of the current condition of the roof. Their report recommended roof replacement for this facility in FY 2017, as well as other building envelope improvements in the next five years. An evaluation of the energy efficiency of the building was performed by ComEd in FY 2019 to assess if there are any improvements to electrical systems/fixtures that would increase efficiency and be eligible for their incentive program. The working condition of all Village Hall HVAC units is also monitored, the HVAC contractor helps in determining if replacement is needed in the next five years as well.

The following facility improvements are recommended within the next five years:

	<b><u>Repair/Improvement</u></b>	<b><u>Estimated Cost</u></b>	<b><u>Year</u></b>
1.	Energy efficient lighting improvements (exterior)	\$12,260	FY 2020
2.	Energy efficient lighting improvements (interior)	\$14,160	FY 2021

3. Replace roof above 2nd floor (WSCDC area)	\$55,000	FY 2022
4. Replace HVAC rooftop unit	\$32,000	FY 2023
5. Tuck-pointing improvements	\$40,000	FY 2024
Total	\$153,420	

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

## Buildings and Improvements - Public Works

### Public Works Garage Improvements



FY 2020	\$50,000	CIF
FY 2021	\$20,000	CIF
FY 2022	\$0	CIF
FY 2023	\$10,000	CIF
FY 2024	\$0	CIF

Critical

Recommended

Contingent on Funding

### Spending History

FY 2019	\$111,529 (West Wall Repair and Replacement of Windows and Front Door)
FY 2018	\$265,189 (East, North, and South Wall Repair, Replacement of 38 Windows)
FY 2017	\$432,095 (Roof Replacement and West Parapet Wall Replacement)
FY 2016	\$10,000 (Structural Engineering Analysis)

### Project Description & Justification

The Public Works Garage, located at 45 Forest Avenue, is the facility that houses all vehicles, equipment, fuel (unleaded and diesel), road salt, and other materials (stone, asphalt, topsoil, etc.) and supplies necessary for Public Works Operations and Water/Sewer Divisions. The majority of janitorial and minor maintenance tasks and operations are performed and coordinated by Public Works personnel. Tasks and operations that cannot be performed in-house are outsourced.

The property on which the Public Works Garage stands was previously considered for redevelopment. As a result, the Village delayed needed improvements based on the possibility of site redevelopment.

Based on a structural engineering analysis and facility site assessment, the following critical and recommended facility improvements should be completed in FY 2020:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
1. Replace salt storage shed	\$ 50,000	FY 2020

The following prioritized facility improvements are recommended in the **next two to five years**:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
1. Replace two overhead garage doors	\$ 20,000	FY 2021
2. Installation of Solar Panels	\$ 50,000	FY 2021
2. Replace one overhead garage door	\$ 10,000	FY 2023

Total

\$ 80,000

**2020 Recommended Projects**

The following is a summary of the improvements that are proposed for FY 2020:

1. Replace the salt storage shed: The current storage shed building is deteriorating and the roof has collapsed. A replacement shed needs to be built in order to maximize the amount of salt stored on-site to reduce the reliance on deliveries during the winter.

**Project Alternative**

The alternatives to the projects listed would be just to delay the work, which will result in further structural damage to the salt storage shed and repairs to the overhead door systems.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

## ***Buildings and Improvements - Public Works***

### **Pumping Station Improvements**

Water & Sewer



<b>FY 2020</b>	<b>\$55,000</b>	<b>WS</b>
<b>FY 2021</b>	<b>\$20,900</b>	<b>WS</b>
<b>FY 2022</b>	<b>\$0</b>	<b>WS</b>
<b>FY 2023</b>	<b>\$0</b>	<b>WS</b>
<b>FY 2024</b>	<b>\$0</b>	<b>WS</b>

Critical

Recommended

Contingent on Funding

### **Spending History**

FY 2019	\$0 Relocate ComEd owned transformers (carried over due to cost overrun)
FY 2018	\$98,500 Replace lower roof, 2nd floor windows and boiler with combination HVAC system
FY 2017	\$4,995 (Replace/add exterior lighting fixtures)
FY 2016	\$22,600 (Replace front door)

### **Project Description & Justification**

The Pumping Station, located at 7525 Berkshire Street, is the facility that houses all pumps, piping, valves, and auxiliary equipment (including the SCADA controls) that are all central and critical to the operation of the Village's water distribution system. The majority of janitorial and minor maintenance tasks and operations are performed and coordinated by Water Division personnel. Tasks and operations that cannot be performed in-house are outsourced.

In 2013, the Village retained the services of DTZ (a UGL Company) to conduct a Facility Condition Assessment of the Pumping Station. The purpose of the assessment was to evaluate the overall condition of the buildings and sites, and provide information regarding the condition and life expectancy of the major components. The report summarizes the recommended projects involving improvements and maintenance to this facility.

The following critical and recommended facility improvement should be completed in FY 2020:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
1. Relocate ComEd owned transformers	\$55,000	FY 2020

The following prioritized facility improvement is recommended in the **next two to five years**:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
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1. Install Variable Speed Controls to water pump	\$20,900	FY 2021
Total	\$20,900	

**2020 Recommended Projects**

The following is a summary of the improvement that is proposed for FY 2020:

1. Remove ComEd owned transformers from inside facility: The building currently houses three large high voltage transformers owned by ComEd and used to provide power to the building and equipment. The transformers are separated from the common areas of the building, however, they share a common wall that contains all of the power and electrical switching equipment for the facility and pump operations. Failure of one or more of the transformers could result in: 1) Damage to electrical switching equipment; 2) A fire in the facility (The room does not contain a fire suppression system); 3) Contamination of the facility from cooling oil that is used inside the transformers. Each of these scenarios could interrupt pump operations, resulting in the loss of water to the community. Staff received a preliminary estimate from ComEd for \$20,000 to remove the transformers and mount them on a utility pole outside the facility. Actual costs came in at \$25,000 for the ComEd portion of the work and another \$25,000 to run a new electrical service drop to the exterior of the building.

**Project Alternative**

There are essentially no alternatives to these improvements and maintenance projects as the Pumping Station is a critically important facility that houses the operations center for the Village's water distribution system. Deferring these projects would result in emergency repairs that could increase project costs (compared to soliciting bids/proposals).

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

## ***Vehicles – Five Year Capital Improvement Program***

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The Village of River Forest recognizes the importance of maintaining, replacing and purchasing new vehicles to guarantee public safety and the efficient delivery of services. The following is a breakdown of current vehicular levels for all vehicles owned by the Village and the replacement schedule for FY 2020:

<b>Department</b>	<b>Number of Vehicles to be Replaced in FY 2020</b>	<b>Cost of Vehicles to be Replaced in FY 2020</b>	<b>Total Number of Vehicles in Fleet</b>
Building	-	\$ -	1
Police	2	\$ 85,682	17
Fire	-	\$ -	9
Public Works	1	\$ 70,500	21
<b>Total</b>	<b>3</b>	<b>\$ 156,182</b>	<b>48</b>

### **Financing**

Projects in this section are financed through the Capital Equipment Replacement Fund (CERF).

### **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.

These projects are highlighted in yellow.

**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.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Vehicles**  
**Fiscal Year 2020 Budget**

Vehicles	Fiscal Year					Five Year Total	Funding Source
	2020	2021	2022	2023	2024		
Building	-	-	-	-	16,293	16,293	CERF
Police	85,682	127,737	80,591	140,919	178,043	612,972	CERF
Fire	-	70,000	700,000	230,000	-	1,000,000	CERF
Public Works	70,500	213,500	155,000	109,000	239,000	787,000	CERF & CERF/WS
<b>Total</b>	<b>156,182</b>	<b>411,237</b>	<b>935,591</b>	<b>479,919</b>	<b>433,336</b>	<b>2,416,265</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Capital Equipment Replacement Fund (CERF)	156,182	411,237	935,591	434,919	234,336	2,172,265
CERF- Water and Sewer (CERF/WS)	-	-	-	45,000	199,000	244,000
<b>Totals</b>	<b>156,182</b>	<b>411,237</b>	<b>935,591</b>	<b>479,919</b>	<b>433,336</b>	<b>2,416,265</b>



**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Vehicles-Building**  
**Fiscal Year 2020 Budget**

Building Department	Year	Vehicle #	This Project is:	Fiscal Year					Five Year Total	Funding Source
				2020	2021	2022	2023	2024		
Ford Focus	2014	1	Recommended	-	-	-	-	16,293	16,293	CERF
<b>Total</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16,293</b>	<b>16,293</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Capital Equipment Replacement Fund (CERF)	0	0	0	0	16,293	16,293
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16,293</b>	<b>16,293</b>

## Vehicles - Building

### Administrative Vehicle - C200

FY 2024

\$16,293

CERF

Critical

Recommended

Contingent on Funding

Make Ford  
 Model Focus  
 Year 2014  
 Cost \$14,483  
 Useful Life 9 years  
 Current Life 5 years



### Vehicle Description

This vehicle is utilized by the Building Official and Code Enforcement Officer for travel to/from various properties primarily for inspections.

Vehicle	Year	Date	Road Mileage
Ford Focus	2014	12/2018	3,379

Maintenance Costs	
Routine Maintenance as of December, 2018	\$100
Cost of Repairs	\$0
Total Spent on Maintenance and Repairs	\$100

### Project Alternative

- Utilize a car that is being taken out of the police, fire or public works fleet (if available) as a pool car instead of purchasing a new vehicle.
- Purchase a new vehicle and move this fully depreciated vehicle into rotation as a "pool car" for use by Building, Finance and Administrative staff.
- Examine possible leasing strategies in lieu of purchasing a new vehicle.
- Purchase a Hybrid, Electric or Natural Gas vehicle for fuel efficiency. This will require the installation of a refueling/recharging system or identification of a system nearby.
- Defer vehicle replacement to 2024 given its low mileage and lack of necessary maintenance.

### Operational Impact

This unit is the primary vehicle for the Building Department. The Department has, in the past, relied on fully depreciated vehicles, including a For Taurus and Crown Victoria, as "pool cars" that were shared with the Public Works Department. However, the age and condition of those vehicles has declined and they should be removed from the fleet. The Ford Focus has had little to no maintenance or performance issues and replacement can be deferred, however, any breakdowns will leave the Administration, Finance and Building staff without a vehicle. Staff recommends that another fully depreciated vehicle be added as a "pool car" and that replacement of the Ford Focus be deferred to FY 2024.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$50	Oil changes as needed plus cost of fuel.

### Carryover History

This vehicle was scheduled for replacement in FY 2020, however, due to its low mileage, condition and low maintenance costs, replacement has been deferred to FY 2024.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Vehicles-Police**  
**Fiscal Year 2020 Budget**

Police Department	Year	Vehicle #	This Project is:	Fiscal Year					Five Year Total	Funding Source
				2020	2021	2022	2023	2024		
Marked Squad Car	2018	1	Recommended	-	45,779	-	-	49,298	95,077	CERF
Marked Squad Car	2019	2	Recommended	-	-	-	48,649	-	48,649	CERF
Marked Squad Car	2016	3	Recommended	45,490	-	-	48,988	-	94,478	CERF
Marked Squad Car	2019	4	Recommended	-	-	45,132	-	-	45,132	CERF
Marked Squad Car	2016	5	Recommended	40,192	-	-	43,282	-	83,474	CERF
Marked Squad Car	2017	6	Recommended	-	45,780	-	-	49,299	95,079	CERF
Community Service Vehicle	2016	10	Recommended	-	-	-	-	35,190	35,190	CERF
Detectives Vehicle	2017	12	Recommended	-	-	35,459	-	-	35,459	CERF
Unmarked Tactical	2018	13	Recommended	-	-	-	-	44,256	44,256	CERF
Chief's Vehicle	2015	17	Recommended	-	36,178	-	-	-	36,178	CERF
Marked Patrol	2009	7	N/A	These vehicles are replaced with used police vehicles.					-	
Unmarked Traffic/Patrol	2013	8	N/A						-	
Crime Prevention- Taurus	2013	9	N/A						-	
Deputy Chief's Vehicle	2007	11	N/A						-	
Admin Pool Vehicle	2000	14	N/A						-	
Covert Detective Ford Fusion	2015	15	N/A						-	
Patrol Commander-Taurus	2013	16	N/A						-	
<b>Total</b>									<b>85,682</b>	<b>127,737</b>

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Capital Equipment Replacement Fund (CERF)	85,682	127,737	80,591	140,919	178,043	612,972
<b>Totals</b>	<b>85,682</b>	<b>127,737</b>	<b>80,591</b>	<b>140,919</b>	<b>178,043</b>	<b>612,972</b>

## Vehicles - Police

Marked Squad Car		FY 2021	\$45,779	CERF
Squad 1		FY 2024	\$49,298	CERF
	<input type="radio"/> Critical	<input checked="" type="radio"/> Recommended	<input type="radio"/> Contingent on Funding	
Make	Ford			
Model	Explorer PUV			
Year	2018			
Cost	\$42,510			
Useful Life	3 yrs			
Current Life	Less than 1 yr			

### Project Description & Justification

The estimated cost to replace Squad #1 in FY 2021 is \$45,779. The estimated cost of the vehicle incorporates \$11,000/car for equipment and installation, which includes exterior police markings, light emitting diode (LED) light bar, and miscellaneous items needed to facilitate the installation of major components. The in-service date for this unit was May 4, 2018. The current mileage is 7,236 as of 10/31/18). The average monthly miles driven is 1,448. Estimated mileage at time of replacement: 80,000.

### Vehicle Description

This vehicle is a marked squad car used for daily patrol activities. The unit is equipped with laptop computers, moving radar units and forward facing video cameras. As the vehicles are rotated out of the fleet, the laptops, radars, and video equipment will be removed and reinstalled in the new cars. This vehicle also houses mission critical equipment for response to active shooter and other life-threatening events.

Maintenance Costs FY 2018-2021	
Routine Maintenance as of November, 2018	\$59 (6 @ 9.83)
Cost of Repairs While Under Warranty (3-yr/36,000)	\$0
Total Spent on Maintenance and Repairs	\$59

### Project Alternative

Due to the nature of the use, deferral beyond three years is not recommended for patrol vehicles. The reliability decreases as age increases, and maintenance and repair costs often increase.

### Operational Impact

These cars are used extensively for patrol activities, so breakdowns have a direct impact on the department's ability to respond to requests from residents, provide traffic control, respond to complaints of criminal activity, and perform routine investigations.

### Project Impact

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Approximately \$2,735	Routine maintenance and periodic repairs

**Carryover History**

None

**Vehicles - Police**

<b>Marked Squad Car</b>	<b>FY 2023</b>	<b>\$48,649</b>	<b>CERF</b>
<b>Squad 2</b>	<b>FY 2027</b>	<b>\$52,298</b>	<b>CERF</b>
<input type="radio"/> Critical	<input checked="" type="radio"/> Recommended	<input type="radio"/> Contingent on Funding	
Make	Chevy		
Model	Tahoe PPV		
Year	2019		
Cost	\$44,073		
Useful Life	4 yrs		
Current Life	0 yrs-on order		

**Project Description & Justification**

The estimated cost to replace Squad #2 is \$48,649. The estimated cost of the vehicle incorporates \$11,000/car for equipment and installation, which includes exterior police markings, light emitting diode (LED) light bar, and miscellaneous items needed to facilitate the installation of major components. The in-service date is estimated as being January 15, 2019. The current mileage is 0. The average monthly miles driven is 0. Estimated mileage at time of replacement: 80,000.

**Vehicle Description**

This vehicle is a marked squad car used for daily patrol activities. The unit is equipped with laptop computers, moving radar units and forward facing video cameras. The vehicle carries a number of entry tools and protective equipment that is ready for immediate deployment by officers. As the vehicles are rotated out of the fleet, the laptops, radars, and video equipment will be removed and reinstalled in the new cars.

<b>Maintenance Costs FY 2019-2023</b>	
Routine Maintenance as of November, 2018	\$0 (0 @ 0)
Cost of Repairs While Under Warranty	\$0
<b>Total Spent on Maintenance and Repairs</b>	<b>\$0 *</b>

\*Estimated in-service date is January 15, 2019

**Project Alternative**

Due to the nature of the use, deferral beyond three to four years is not recommended for patrol vehicles. The reliability decreases as age increases, and maintenance and repair costs often increase.

**Operational Impact**

These cars are used extensively for patrol activities, so breakdowns have a direct impact on the department's ability to respond to requests from residents, provide traffic control, respond to complaints of criminal activity, and perform routine investigations.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Approximately \$2,735	Routine maintenance and periodic repairs

**Carryover History**

None, but with re-introduction of Chevy Tahoe to the Department fleet it is anticipated that these models can be placed into a four-year rotation instead of a three-year rotation.

**Vehicles - Police**

<b>Marked Squad Car</b>	<b>FY 2020</b>	<b>\$45,490</b>	<b>CERF</b>
<b>Squad 3</b>	<b>FY 2023</b>	<b>\$48,988</b>	<b>CERF</b>
<input type="radio"/> Critical	<input checked="" type="radio"/> Recommended	<input type="radio"/> Contingent on Funding	
Make	Ford		
Model	Explorer PUV		
Year	2016		
Cost	\$42,242		
Useful Life	3 yrs		
Current Life	2 yrs		

**Project Description & Justification**

The estimated cost to replace Squad #3 is \$45,490. The estimated cost of the vehicle incorporates \$11,000/car for equipment and installation, which includes exterior Police markings, light emitting diode (LED) light bar, and miscellaneous items needed to facilitate the installation of major components. Current mileage is 46,511 (as of 10/31/18). The updated in-service date was June 1, 2016. A new replacement vehicle had to be put in-service on June 1, 2016 due to the original vehicle being totaled out in an accident, which occurred on March 16, 2016. The average monthly miles driven is 1,661. Estimated mileage at time of replacement: 80,000. Once the new unit is purchased, this car will then replace an older model Ford Crown Victoria in the fleet. This squad was deferred from FY 2019 to FY 2020.

**Vehicle Description**

This vehicle is a marked squad car used for daily patrol activities. The unit is equipped with laptop computers, moving radar units and forward facing video cameras. As the vehicles are rotated out of the fleet, the laptops, radars, and video equipment will be removed and reinstalled in the new cars.

<b>Maintenance Costs FY 2016-2019</b>	
Routine Maintenance as of November, 2018	\$2,616 (20 @ \$130.82)
Cost of Repairs While Under Warranty	\$0
<b>Total Spent on Maintenance and Repairs</b>	<b>\$2,616</b>

**Project Alternative**

Due to the nature of the use, deferral beyond three years is not recommended for patrol vehicles. The reliability decreases as age increases, and maintenance and repair costs often increase. Due to this car being replaced in June 2016, a one year deferral was recommended but with the Department's secondary vehicles beginning to have high mileage and increased maintenance costs, this non-primary use of this car will help reduce overall maintenance costs and reduce unit down time.

**Operational Impact**

These cars are used extensively for patrol activities, so breakdowns have a direct impact on the department's ability to respond to requests from residents, provide traffic control, respond to complaints of criminal activity, and perform routine investigations.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Approximately \$2,735	Routine maintenance and periodic repairs

**Carryover History**

This vehicle was scheduled for replacement in FY 2019 but has been deferred to FY 2020.

## Vehicles - Police

Marked Squad Car	FY 2022	\$45,132	CERF
Squad 4	FY 2025	\$48,517	CERF

Critical

Recommended

Contingent on Funding

Make	Dodge
Model	Charger
Year	2019
Cost	\$41,910
Useful Life	3 yrs
Current Life	0 yrs

### Project Description & Justification

The estimated cost to replace Squad #4 is \$45,132 in FY 2022. The estimated cost of the vehicle incorporates \$11,000/car for equipment and installation, which includes exterior Police markings, light emitting diode (LED) light bar, and miscellaneous items needed to facilitate the installation of major components. The in-service date was November 1, 2015 for the previous squad 4. The new Squad 4 was approved during last year's CIP process and is expected to be ordered in January, 2019. Estimated mileage at time of replacement: 80,000. Once a new Squad 4 is purchased, the car will then replace an older model in the fleet, be offered to another internal Village department or will be disposed of at auction.

### Vehicle Description

This vehicle is a marked squad car used for daily patrol activities. The unit is equipped with laptop computers, moving radar units and forward facing video cameras. As the vehicles are rotated out of the fleet, the laptops, radars, and video equipment will be removed and reinstalled in the new cars.

### Maintenance Costs FY 2016-2019

Routine Maintenance as of November, 2018	\$0 (0 @ \$0.00)
Cost of Repairs While Under Warranty	\$0
Total Spent on Maintenance and Repairs	\$0

### Project Alternative

Due to the nature of the use, deferral beyond three years is not recommended for patrol vehicles. The reliability decreases as age increases, and maintenance and repair costs often increase.

### Operational Impact

These cars are used extensively for patrol activities, so breakdowns have a direct impact on the department's ability to respond to requests from residents, provide traffic control, respond to complaints of criminal activity, and perform routine investigations.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Approximately \$2,735	Routine maintenance and periodic repairs



**Carryover History**

None

## Vehicles - Police

Marked Squad Car		FY 2020	\$40,192	CERF
Squad 5		FY 2023	\$43,282	CERF
	<input type="radio"/> Critical	<input checked="" type="radio"/> Recommended	<input type="radio"/> Contingent on Funding	
Make	Dodge			
Model	Charger AWD			
Year	2016			
Cost	\$36,412			
Useful Life	3 yrs			
Current Life	3 yrs			

### Project Description & Justification

The estimated cost to replace Squad #5 is \$40,192 in FY 2020. The estimated cost of the vehicle incorporates \$11,000/car for equipment and installation, which includes exterior police markings, light emitting diode (LED) light bar, and miscellaneous items needed to facilitate the installation of major components. The in-service date was February 1, 2016. The current mileage is 42,541 (as of 10/31/18). The average monthly miles driven is 1,330. Estimated mileage at time of replacement: 80,000. This vehicle will be kept in the fleet as a secondary line vehicle to be used for crime prevention or back-up patrol vehicle. Due to the low mileage, it was recommended this squad be deferred to FY 2020 instead of being replaced in FY 2019.

### Vehicle Description

This vehicle is a marked squad car used for daily patrol activities. The unit is equipped with laptop computers, moving radar units and forward facing video cameras. As the vehicles are rotated out of the fleet, the laptops, radars, and video equipment will be removed and reinstalled in the new cars.

Maintenance Costs FY 2016-2019	
Routine Maintenance as of November, 2018	\$5,850 (26 @ \$225.00)
Cost of Repairs While Under Warranty	\$0
Total Spent on Maintenance and Repairs	\$5,850

### Project Alternative

Due to the nature of the use, deferral beyond three years is not recommended for patrol vehicles. The reliability decreases as age increases, and maintenance and repair costs often increase.

### Operational Impact

These cars are used extensively for patrol activities, so breakdowns have a direct impact on the department's ability to respond to requests from residents, provide traffic control, respond to complaints of criminal activity, and perform routine investigations.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Approximately \$2,735	Routine maintenance and periodic repairs

**Carryover History**

This vehicle was scheduled for replacement in FY 2019 but was deferred to FY 2020.

## Vehicles - Police

Marked Squad Car		FY 2021	\$45,780	CERF
Squad 6		FY 2024	\$49,299	CERF
	<input type="radio"/> Critical	<input checked="" type="radio"/> Recommended	<input type="radio"/> Contingent on Funding	
Make	Ford			
Model	Explorer			
Year	2017			
Cost	\$41,474			
Useful Life	3 yrs			
Current Life	2 yrs			

### Project Description & Justification

The estimated cost to replace Squad #6 is \$45,780. The estimated cost of the vehicle incorporates \$11,000/car for equipment and installation, which includes exterior police markings, light emitting diode (LED) light bar, automatic license plate reader, and miscellaneous items needed to facilitate the installation of major components. The in-service date was December 29, 2016. The current mileage is 45,985 (as of 11/21/18). The average monthly miles driven is 1,728. Estimated mileage at time of replacement: 77,000. The condition of this vehicle will be analyzed when it is removed from service to determine if it is suitable to be rotated to another department for administrative use, or if it should be disposed of at auction.

### Vehicle Description

The recommended replacement model is a Ford Explorer or Chevy Tahoe. This vehicle would serve as a multi-purpose utility vehicle for deploying the speed trailer and rapid deployment equipment. It will also house the Automatic License Plate Reader System, which is used for both traffic and parking operations. This vehicle will be a marked squad car used for daily patrol activities. The unit is equipped with laptop computers, moving radar units and forward facing video cameras. As the vehicles are rotated out of the fleet, reusable laptops, radars, video equipment will be removed and reinstalled in the new cars.

Maintenance Costs FY 2017-2020	
Routine Maintenance as of November, 2018	\$3,675 (15 @ \$245)
Cost of Repairs While Under Warranty	\$0
Total Spent on Maintenance and Repairs	\$3,675

### Project Alternative

Due to the nature of the use, deferral beyond three years is not recommended for patrol vehicles. The reliability decreases as age increases, and maintenance and repair costs often increase.

### Operational Impact

These cars are used extensively for patrol activities, so breakdowns have a direct impact on the department's ability to respond to requests from residents, provide traffic control, respond to complaints of criminal activity, and perform routine investigations. Police staff recommend that this purchase be deferred from FY 2020 to FY 2021 due to low mileage.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Approximately \$2,735	Routine maintenance and periodic repairs

**Carryover History**

Police staff recommend that this purchase be deferred from FY 2020 to FY 2021.

**Vehicles - Police**

<b>Community Service Vehicle</b>	<b>FY 2024</b>	<b>\$35,190</b>	<b>CERF</b>
<b>Squad 10</b>	<b>FY 2031</b>	<b>\$41,830</b>	<b>CERF</b>
<input type="radio"/> Critical	<input checked="" type="radio"/> Recommended	<input type="radio"/> Contingent on Funding	
Make	Ford		
Model	Transit Connect		
Year	2016		
Cost	\$29,604		
Useful Life	7 yrs		
Current Life	2.5 yr		

**Project Description & Justification**

The estimated cost to replace unit #10 is \$35,190. The estimated cost of the vehicle incorporates \$11,000/car for equipment and installation, which includes exterior police markings, light emitting diode (LED) light bar, and miscellaneous items needed to facilitate the installation of major components. The in-service date was September 1, 2016. The current mileage is 25,529 (as of 11/29/18). The average monthly miles driven is 945. Estimated mileage at time of replacement: 95,000. Depending on the condition of the vehicle at replacement time, this vehicle could be offered to another department or disposed of at auction.

**Vehicle Description**

This vehicle is a marked utility van used for daily Community Service activities. The unit is equipped with a laptop computer and Zebra printer. The Community Service Vehicle is used for daily parking violations, stray animals, evidence transport, traffic control, large equipment transport and deploying the Speed Trailer.

<b>Maintenance Costs FY 2017-2024</b>	
Routine Maintenance as of November, 2018	\$160 ( 27 @ 5.92)
Cost of Repairs (Under Warranty)	\$0
<b>Total Spent on Maintenance and Repairs</b>	<b>\$160</b>

**Project Alternative**

Due to the nature of the use, deferral beyond its estimated seven year useful life is not recommended for a CSO vehicle. The reliability decreases as age increases, and maintenance and repair costs often increase.

**Operational Impact**

Breakdowns have a direct impact on the department’s ability to respond to requests from residents, provide traffic control, respond to parking complaints, transport evidence, and perform other routine activities.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
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Approximately \$2,735	Routine maintenance and periodic repairs
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**Carryover History**

None

**Vehicles - Police**

<b>Dodge Durango Primary Detectives Vehicle</b>	<b>FY 2022</b>	<b>\$35,459</b>	<b>CERF</b>
<b>Squad 12</b>	<b>FY 2027</b>	<b>\$40,119</b>	<b>CERF</b>
<input type="radio"/> Critical	<input checked="" type="radio"/> Recommended	<input type="radio"/> Contingent on Funding	
Make	Dodge		
Model	Durango		
Year	2017		
Cost	\$31,341		
Useful Life	5 yrs		
Current Life	2 yrs		

**Project Description & Justification**

The estimated cost to replace unit #12 is \$35,459. The estimated cost of the vehicle incorporates an all-wheel drive SUV, \$9,000 for covert equipment and installation, including hidden light emitting diode (LED) emergency lights, radio antennae, and miscellaneous items needed to facilitate the installation of major components. The in-service date was October 1, 2016. The current mileage is 5,750 (as of 11/21/18). The average monthly miles driven is 268. Estimated mileage at time of replacement: 40,380. Depending on the condition of the vehicle at replacement time, this vehicle will be deferred or can be rotated as the secondary Detective Unit, a tactical vehicle, or school vehicle.

**Vehicle Description**

This is an unmarked detective unit used daily for criminal investigations, tactical patrol, and covert surveillance. The unit is equipped with hidden emergency lights, a laptop computer, and car radios. The vehicle is set up to store protective gear and additional weapons systems.

<b>Maintenance Costs FY 2017-2022</b>	
Routine Maintenance as of November, 2018	\$138 (1 @ \$138)
Cost of Repairs While Under Warranty	\$0
<b>Total Spent on Maintenance and Repairs</b>	<b>\$138 *</b>

\*Car has been in-service for only two years

**Project Alternative**

Due to the nature of the use, deferral beyond its estimated life is not recommended for a tactical vehicle. The reliability decreases as age increases, and maintenance and repair costs often increase. In addition, tactical or detective plain clothes units are eventually identified by the local criminal element and become somewhat ineffective for investigative purposes.

**Operational Impact**

Breakdowns have a direct impact on the department’s ability to respond to and investigate criminal activity. In addition, the Department depends on unmarked/covert units to perform a myriad of surveillance, tactical, investigative and, and arrest functions for the community.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Approximately \$2,735	Routine maintenance and periodic repairs

**Carryover History**

None



## Vehicles - Police

<b>Dodge Charger Unmarked Tactical Squad 13</b>	<b>FY 2024</b>	<b>\$44,256</b>	<b>CERF</b>
	<b>FY 2030</b>	<b>\$51,323</b>	<b>CERF</b>

Critical

Recommended

Contingent on Funding

Make	Dodge
Model	Charger
Year	2018
Cost	\$38,162
Useful Life	6 yrs
Current Life	1 yr

### Project Description & Justification

The estimated cost to replace unit #13 is \$44,256 in FY 2024. The estimated cost of the vehicle incorporates an all-wheel drive (AWD) vehicle, \$11,000 for covert equipment and installation, including hidden light emitting diode (LED) emergency lights, radio antenna, and miscellaneous items needed to facilitate the installation of major components. The 2018 Dodge Charger in-service date 01/01/18. The current mileage is 9,000 (as of 11/29/18). The average monthly miles driven is 820. Estimated mileage at time of replacement: 88,000.

### Vehicle Description

This is an unmarked police unit used daily for tactical patrol and covert surveillance. The unit is equipped with hidden emergency lights, a laptop computer, a printer, and car radios. The unit is set up to store additional protective gear and weapons systems.

Maintenance Costs FY 2012-2018	
Routine Maintenance as of November, 2018	\$306 (11 @ \$27.81)
Cost of Repairs While Under Warranty	\$0
<b>Total Spent on Maintenance and Repairs</b>	<b>\$306</b>

### Project Alternative

Due to the nature of the use, deferral beyond its estimated life is not recommended for a tactical vehicle. The reliability decreases as age increases, and maintenance and repair costs often increase.

### Operational Impact

Breakdowns have a direct impact on the department's ability to respond to and investigate criminal activity. The effectiveness of an unmarked/undercover vehicle can be diminished over time due to local criminal offenders having identified it as a police car.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Approximately \$2,735	Routine maintenance and periodic repairs

### Carryover History

None

**Vehicles - Police**

<b>Chief's Vehicle</b>	<b>FY 2021</b>	<b>\$36,178</b>	<b>CERF</b>
<b>Squad 17</b>	<b>FY 2027</b>	<b>\$41,955</b>	<b>CERF</b>

Critical
  Recommended
  Contingent on Funding

Make	Ford
Model	Explorer
Year	2015
Cost	\$31,196
Useful Life	6 yrs
Current Life	3 yrs

**Project Description & Justification**

The cost to replace the Chief’s vehicle is estimated at \$36,178 for a 2021 Ford Explorer. The estimated cost of the vehicle incorporates \$7,000 for equipment and installation. The in-service date was January 2015. The Chief will pass down the 2015 Ford Explorer to the Deputy Chief, Patrol Commander, or another internal division upon replacement. The current mileage is 44,200 as of 11/15/18. The average monthly miles driven is 1,225. The estimated mileage at replacement is 88,000.

**Vehicle Description**

The Ford Explorer is slightly less expensive than the base price of the Ford Taurus PPV (the replacement for the Ford Crown Victoria). The AWD Ford Explorer has a similar MPG (16/28 MPG) to the Ford Taurus (19/29). The vehicle is used daily, and is equipped with radios, hidden emergency lights, and storage for protective equipment and weapon systems.

<b>Maintenance Costs FY 2015-2021</b>	
Routine Maintenance as of November, 2018	\$431 (9 @ 47.94)
Cost of Repairs While Under Warranty	\$0
<b>Total Spent on Maintenance and Repairs</b>	<b>\$431</b>

**Project Alternative**

As the vehicle ages the repair costs will increase, which is not desirable with a fixed maintenance budget. This vehicle will maintain the six year replacement schedule.

**Operational Impact**

Although this vehicle is not used as extensively as the front line squad cars, it is used to respond to emergencies, and should be in good operational condition and meet industry standards.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Approximately \$2,735	Routine maintenance and periodic repairs

**Carryover History**

This vehicle was deferred from FY 2012 to FY 2016 due to low mileage and other budget considerations. These considerations will be evaluated again for FY 2021.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Vehicles-Fire**  
**Fiscal Year 2020 Budget**

Fire Department	Year	Vehicle #	This Project is:	Fiscal Year					Five Year Total	Funding Source
				2020	2021	2022	2023	2024		
Administrative Vehicle	2011	201	Recommended	-	32,000	-	-	-	32,000	CERF
Ambulance	2015	215	Recommended	-	-	-	230,000	-	230,000	CERF
Utility Pick-up Truck	2006	218	Contingent	-	38,000	-	-	-	38,000	CERF
Pumper	2001	222	Recommended	-	-	700,000	-	-	700,000	CERF
Ambulance	2006	214	-	This vehicle is a reserve and replaced with frontline upon purchase					-	
Fire Prevention Bureau Vehicle	2009	299	Contingent	This vehicle is replaced with used police vehicles					-	
<b>Total</b>				<b>0</b>	<b>70,000</b>	<b>700,000</b>	<b>230,000</b>	<b>0</b>	<b>1,000,000</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Capital Equipment Replacement Fund (CERF)	0	70,000	700,000	230,000	0	1,000,000
<b>Totals</b>	<b>0</b>	<b>70,000</b>	<b>700,000</b>	<b>230,000</b>	<b>0</b>	<b>1,000,000</b>

## Vehicles - Fire

### Administrative Vehicle - C201

FY 2021

\$32,000

CERF

Critical

Recommended

Contingent on Funding

Make Ford  
 Model Escape  
 Year 2011  
 Cost \$19,058  
 Useful Life 10 years (6 frontline)  
 Current Life 7 years



### Vehicle Description

C201 is the administrative vehicle that will be assigned to the Fire Marshal when C200 arrives. This vehicle is purchased through the State of Illinois Central Management Service (CMS) program or at a local dealer that will match the cost in the State Purchasing program. This vehicle is equipped with emergency lights and siren for emergency response and administrative function and can serve as an incident command vehicle at emergency scenes in the absence of the Chief.

Vehicle	Year	Date	Road Mileage
C-201	2011	11/2018	96,457

Maintenance Costs for Past 2.5 Years	
Routine Maintenance as of November, 2018	\$95 (3 items)
Cost of Repairs	\$1,301 (2 items)
Total Spent on Maintenance and Repairs	\$1,396

### Project Alternative

- Purchase an all-wheel drive SUV to place in service for severe weather conditions. This provides better traction ability during response in extreme weather conditions (four wheel vs. two wheel drive).
- Maintain current vehicle for another year and re-evaluate next budget.

### Operational Impact

This vehicle was originally scheduled for a six year useful life. The requested vehicle will replace the 2011 Ford Escape, that then will be used for fire prevention, travel, and provide an auxiliary vehicle in the Village fleet for other departments.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Normal reduction in maintenance costs; \$500 Preventative maintenance	Reduce maintenance on fleet by providing new, warranty driven apparatus, replacing older, costlier vehicle

### Carryover History

Purchase is being deferred to FY 2021

## Vehicles - Fire

### Ambulance - A215

FY 2023

\$230,000

CERF

Critical

Recommended

Contingent on Funding

Make Ford  
 Model F-450 Wheeled Coach  
 Year 2015  
 Cost \$172,906  
 Useful Life 8 years  
 4 years fleet (shared reserve)  
 Current Life 4 years



### Vehicle Description

A-215 is a Type III (van style front chassis) and serves as an Advance Life Support (ALS) transport vehicle. Staffed with two firefighter/paramedics, Ambulance 215 responds to an average of 1,100 EMS calls per year. This vehicle operates to treat and transport accident victims and patients of illness to local hospitals. An innovative lifting system (Stryker Power System) is included in the cost of the new vehicle as an additional resource to minimize firefighter injuries due to bariatric (heavy) patients.

Vehicle	Year	Date	Road Mileage
A-215	2014	11/2018	27,787
A-214	2006	11/2018	54,317

### Maintenance Costs for Past 2.5 Years

<i>Routine Maintenance</i>	
215	\$70 (3 items)
214 (Shared reserve unit)	\$0
<i>Cost of Repairs</i>	
215	\$0
214 (Shared reserve unit)	\$0
<i>Total Spent on Maintenance and Repairs</i>	
215	\$70
214 (Shared reserve unit)	\$0

### Repair Description

Ambulance 215 is in its fourth year of service.

Ambulance 214 (Reserve) has experienced several mechanical issues that are resolved. This vehicle had its engine replaced in FY 2016.

### Project Alternative

- Eliminate the Stryker Power Lift system for a savings of \$40,000.

### Operational Impact



This vehicle is in the fourth year of a planned eight year useful life expectancy. The reserve ambulance is shared with the Village of Forest Park and an evaluation will be made to determine its disposition as to keeping it as a reserved/shared vehicle.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$1,000	Preventative maintenance

**Carryover History**

None

## Vehicles - Fire

### Administrative Vehicle – C218

FY 2021

\$38,000

CERF

Critical

Recommended

Contingent on Funding

Make Ford  
 Model F-250  
 Year 2006  
 Cost \$35,000  
 Useful Life 8 years  
 Current Life 12 years



### Vehicle Description

C218 is the utility vehicle assigned to Haz-Mat & Technical Rescue. This vehicle is purchased through the State of Illinois Central Management Service (CMS) program or at a local dealer that will match the cost in the State Purchasing program. This vehicle is four-wheel drive for extreme weather conditions, and is equipped with emergency lights and siren for emergency response. It has the ability to tow safety trailers, along with the CCC trailer. Additionally, this vehicle serves as the Incident Command vehicle in situations of disaster. This vehicle will be sold or will become a pool car after its useful life.

Vehicle	Year	Date	Road Mileage
C-218	2006	11/2017	12,567

Maintenance Costs for Past 2.5 Years	
Routine Maintenance as of November, 2018	\$0
Cost of Repairs	\$0
Total Spent on Maintenance and Repairs	\$0

### Project Alternative

- Purchase an all-wheel drive SUV to place in service for severe weather conditions. This provides better traction ability during response in extreme weather conditions (four wheel vs. two wheel drive).
- Maintain current vehicle for another year and re-evaluate next budget.

### Operational Impact

This vehicle was originally scheduled for an eight year useful life. The vehicle will replace the current vehicle used by Haz-Mat & Technical Rescue. The replaced vehicle can be utilized for school, training, travel, and auxiliary vehicle in the Village fleet for other departments, or sold at auction.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Normal reduction in maintenance costs \$500 preventative maintenance	Reduce maintenance on fleet by providing new, warranty driven apparatus, replacing older, costlier vehicle

**Carryover History**

This vehicle was carried over from FY 2014 and will be reevaluated for FY 2021.

## Vehicles - Fire

### Pumper - E222

FY 2022

\$700,000

CERF

Critical

Recommended

Contingent on Funding

Make Darley  
 Model Pumper  
 Year 2001  
 Cost \$326,000  
 Useful Life 10 years front line +  
 10 years reserve  
 Current Life 17 years



### Vehicle Description

E-222 is a 1,500-gallon per minute fire pumper with a 750-gallon water tank and a full complement of fire hose, ladders and equipment. This vehicle meets NFPA 1901 and Insurance Services Office (ISO) criteria for a Class 'A' Pumper. A Class A pumper entails the following pumping requirements: 100% pump capacity at 150psi, 70% capacity at 200psi, and 50% at 250psi. Class B pumps were found on older apparatus. They developed 100% pump capacity at 120psi, 70% at 200psi, and 50% at 250 psi.

Vehicle	Year	Date	Road Mileage	Engine Hours	Actual Mileage
E-222	2001	11/2018	83,753	11,923.8	298,095

\*Fire and EMS vehicles use a conversion of 25 miles per engine hour due to the on scene time at an emergency call.

Maintenance Costs for Past 2.5 Years	
<i>Routine Maintenance</i>	
222	\$7,979 (4 items)
213	\$183 (1 item)
<i>Cost of Repairs</i>	
222	\$311 (1 item)
213	\$1,474 (1 item)
<i>Total Spent on Maintenance and Repairs</i>	
222	\$8,290
213	\$1,657

### Project Alternative

- Evaluate State of Illinois loan programs and federal grants
- Delay the purchase of this vehicle and incur increased maintenance cost and out of service time
- Sell this vehicle and purchase a used vehicle from another community that is newer

### Operational Impact

This vehicle has been placed in reserve pumper status with Engine 213 moved to front line status. The need to maintain a reserve pumper exists when the front line Engine is down for maintenance or repair. It gives responding off-duty firefighters apparatus to respond with to run multiple calls when the front line pumper is in use. It also allows for mutual aid while maintaining a response pumper to provide adequate fire suppression within the Village.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Reduction of Front-line Engine repairs (E-213)	Reduce maintenance on fleet by providing new, warranty driven apparatus, replacing older, costlier vehicle. Reduction in maintenance costs for first three years (warranty) on new vehicle and E-213 reduced by placing of 16 year old vehicle in reserve status.

**Carryover History**

None

Village of River Forest, Illinois  
 Five Year Capital Improvement Program  
 Vehicles-Public Works  
 Fiscal Year 2020 Budget

Public Works Department	Description	Year	Vehicle #	This Project is:	Fiscal Year					Five Year Total	Funding Source
					2020	2021	2022	2023	2024		
Pick-up Truck w/ Dump Body	Ford F350 Super Duty	2006	33	Critical	70,500	-	-	-	-	70,500	CERF
Dump Truck	International 7400	2012	41	Critical	-	-	-	-	175,000	175,000	CERF/WS
Pick-Up Truck	F550 Super Duty	2011	42	Critical	-	-	-	64,000	-	64,000	CERF
Large Int'l Dump Truck	International 4000 Series	1998	44	Critical	-	175,000	-	-	-	175,000	CERF
Aerial Truck	International 4400	2003	46	Critical	-	-	155,000	-	-	155,000	CERF
Pick-Up Truck	Ford F350 Super Duty	2012	48	Critical	-	38,500	-	-	-	38,500	CERF
Pick-Up Truck	Ford F350 Super Duty	2015	49	Critical	-	-	-	-	40,000	40,000	CERF
Pick-Up Truck	Ford F350 Super Duty	2008	67	Critical	-	-	-	45,000	-	45,000	CERF/WS
Cargo Van	Ford Transit Connect	2015	68	Recommended	-	-	-	-	24,000	24,000	CERF/WS
<b>Total</b>					<b>70,500</b>	<b>213,500</b>	<b>155,000</b>	<b>109,000</b>	<b>239,000</b>	<b>787,000</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Capital Equipment Replacement Fund (CERF)	70,500	213,500	155,000	64,000	40,000	543,000
CERF - Water and Sewer (CERF/WS)	-	-	-	45,000	199,000	244,000
Water and Sewer Fund (WS)	-	-	-	-	-	-
<b>Totals</b>	<b>70,500</b>	<b>213,500</b>	<b>155,000</b>	<b>109,000</b>	<b>239,000</b>	<b>787,000</b>

**Vehicles - Public Works**

**Pickup Truck #33** **FY 2020** **\$70,500** **CERF**

Critical  Recommended  Contingent on Funding

Make Ford  
 Model F350 Super Duty  
 Year 2006  
 Purchase Cost \$36,028  
 Purchased FY 2007  
 Useful Life 8 years  
 Current Life 13 years



**Vehicle Description**

Various personnel in the Operations Division operate this truck. The vehicle is equipped with an eight-foot stainless steel dump body, v-box salt spreader, nine-foot power angling snowplow, emergency lighting, and two-way radio. This vehicle is used to plow and salt alleys and parking lots throughout the Village during snow removal operations.

Total Vehicle Miles	35,912 (As of 10/30/2018)
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**Recent Maintenance Costs**

Date	Maintenance Performed	Cost
9/2014	Battery	\$182.30
1/2015	Repair brakes	\$1,562.30
4/2015	Replace suspension parts	\$423.40
4/2015	Replace suspension parts	\$416.96
4/2016	Repair gauge cluster	\$1,004.00
10/2016	Replace front suspension parts	\$2,626.01
10/2016	Replace three tires	\$600.00
12/2016	Oil and filter change	\$110.00
12/2018	Replace alternator	\$400.00
9/2018	Replace front end parts	\$1,525.00
<b>Total</b>		<b>\$8,849.97</b>

**Project Alternative**

This vehicle was originally scheduled for replacement in FY 2015. Given the age of the vehicle and rising maintenance costs, staff recommends replacing this vehicle in FY 2020 and that the type of vehicle purchased be upgraded to a F-450.

**Operational Impact**

This is one of ten primary snow plowing vehicles in the Village’s snow and ice control fleet. A breakdown reduces the Village’s snow removal response by a tenth and extends the time needed to complete snow removal operations. This unit is used for other operations (hauling materials) which would also be impacted if it were removed from the fleet.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

This vehicle was carried over from FY 2015

## Vehicles - Public Works

**Dump Truck #41** **FY 2024** **\$175,000** **CERF/WS**

Critical

Recommended

Contingent on Funding

Make International  
 Model 7400 6X4  
 Year 2012  
 Purchase Cost \$117,237  
 Purchased FY 2012  
 Useful Life 12 years  
 Current Life 8 years



### Vehicle Description

Various personnel in the Operations Division operate this truck. The vehicle is equipped with a 13-foot dump body, stainless steel v-box salt spreader with manual controls, liquid salt pre-wetting system, 11-foot power angling snowplow, dump body tarp, emergency lighting and two-way radio. It is one of two tandem axle dump trucks capable of hauling heavy loads.

Total Vehicle Miles	22,477 on 10/30/18
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
5/2017	Repair electrical problem	\$1,000.00
6/2017	Repair fuel system	\$2,500.00
6/2018	Replace brake chamber, air dryer, fuel gauge sending unit	\$1,328.00
<b>Total</b>		<b>\$4,828.00</b>

### Project Alternative

The alternative is to defer the purchase to later years.

### Operational Impact

This is one of ten primary snow plowing vehicles in the Village's snow and ice control fleet. A breakdown reduces the Village's snow removal response by a tenth and extends the time needed to complete snow removal operations. This unit is used for other operations (hauling materials) which would also be impacted if it were removed from the fleet.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

### Carryover History

None



## Vehicles - Public Works

Pickup Truck #42

FY 2023

\$64,000

CERF

Critical

Recommended

Contingent on Funding

Make Ford  
 Model F550 Super Duty  
 Year 2011  
 Purchase Cost \$46,692  
 Purchased FY 2011  
 Useful Life 12 years  
 Current Life 9 years



### Vehicle Description

Various personnel in the Operations Division operate this truck. The vehicle is equipped with a dump body, v-box salt spreader, salt brine sprayer, nine foot power angling snowplow, emergency lighting, and two-way radio. This vehicle is used to apply salt brine solution to roadways, plow and salt alleys and parking lots throughout the Village during snow removal operations and hauling miscellaneous raw materials.

Total Vehicle Miles	16,769 (As of 10/30/2018)
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
8/2016	Replace battery	\$118.29
5/2017	Replace front suspension parts	\$1,500.00
2/2018	Replace rear rim	\$600.00
9/2018	Replace plastic hydraulic tank	\$250.00
10/2018	Replace rear brake pads and rotors	\$1,181.42
<b>Total</b>		<b>\$3,649.71</b>

### Project Alternative

The alternative is to defer the purchase to later years.

### Operational Impact

This is one of ten primary snow plowing vehicles in the Village's snow and ice control fleet. A breakdown reduces the Village's snow removal response by a tenth and extends the time needed to complete snow removal operations. This unit is used for other operations (hauling materials) which would also be impacted if it were removed from the fleet.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

None

## Vehicles - Public Works

Dump Truck #44 (previously #41)

FY 2021

\$175,000

CERF

Critical

Recommended

Contingent on Funding

Make International  
 Model 4000 Series  
 Year 1998  
 Purchase Cost \$62,000  
 Purchased FY 1998  
 Useful Life 12 years  
 Current Life 22 years



### Vehicle Description

Various personnel in the Operations Division operate this truck. The vehicle is equipped with a 13 foot dump body, 11 foot power angling snowplow, dump body tarp, emergency lighting, and two-way radio.

Total Vehicle Miles	83,650 (As of 10/30/2018)
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
3/2014	Replaced muffler, flexpipe, and slack adjusters	\$1,210.64
12/2014	Replace turbo charger hose	\$606.78
5/2015	Replace dump body lift cylinder	\$3,278.16
10/2015	Replace hydraulic tank and weld crack in frame rail	\$1,877.02
12/2015	Change oil and filters	\$101.26
9/2017	Replace batteries	\$230.00
12/2017	Replaced steering gear box	\$2,624.85
6/2018	Replaced right front brake chamber	\$245.94
<b>Total</b>		<b>\$10,174.65</b>

### Project Alternative

This vehicle was replaced in FY 2012 by truck #41. The vehicle was kept and refurbished in lieu of purchasing a new full size six wheel dump truck.

### Background

Recognizing that both of the Village's Packer trucks (used for leaf removal) were in mechanically poor condition, staff reevaluated the Village's leaf collection program and determined that hauling leaves utilizing the dump truck fleet is the most operationally efficient means for collecting and transporting leaves. As a result, staff recommended disposing of #31 and rehabilitating the larger tandem axle dump truck (old #41) based on the following reasons:

1. Although the cab and chassis in old #41 is in good operating condition, the dump body was rusted with significant deterioration. That was the primary reason it was replaced in FY 2012.
2. Old #41 is a tandem axle truck and can transport a larger, heavier load compared to truck #31, which is a single axle dump truck.
3. The dump body on old #41 is approximately two feet longer and has higher sides compared to #31.
4. It was expected that truck #31 could be sold at public auction as surplus property for approximately \$10,000 to \$15,000. The vehicle actually sold for \$23,350.

Staff recommended that the cab and chassis on dump truck #41 be reconditioned/refurbished and that the dump body and some of the hydraulic controls be replaced. Costs associated with these improvements are as follows (CERF Expenditures):

- \$7,000-Cab and chassis recondition/refurbish
- \$19,153-Replace dump body and update hydraulic controls

Cost Comparison:

- Sale of truck #31: \$23,350
- Cost to recondition current truck \$26,153
- Purchase of a new dump truck: \$120,000

This alternative allowed Public Works to maintain two tandem axle dump trucks in the fleet and extended the life of the old truck #41 by approximately seven years (replacement is scheduled in FY 2021). This is approximately half of the life cycle of a new dump truck.

**Operational Impact**

This is one of ten primary snow plowing vehicles in the Village’s snow and ice control fleet. A breakdown reduces the Village’s snow removal response by a tenth and extends the time needed to complete snow removal operations. This unit is used for other operations (hauling materials) which would also be impacted if it were removed from the fleet.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

None

## Vehicles - Public Works

Aerial Truck #46

FY 2022

\$155,000

CERF

Critical

Recommended

Contingent on Funding

Make International  
 Model 4400  
 Year 2003  
 Purchase Cost \$83,336  
 Purchased FY 2003  
 Useful Life 15 years  
 Current Life 17 years



### Vehicle Description

Various personnel in the Operations Division use this aerial truck. The vehicle is equipped with a 55-foot working height utility bucket, emergency lighting, and two-way radio. The vehicle is used for tree trimming, streetlight maintenance, traffic signal maintenance, and installing holiday decorations.

Total Vehicle Miles	16,367 (As of 10/30/2018) 11,952 Hours
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
12/2011	Repair PTO	\$485.00
6/2012	Annual inspection	\$900.00
7/2013	Replace AC blower motor	\$128.00
6/2013	Replace PTO lines	\$647.00
8/2013	Certification inspection	\$900.00
1/2014	replace air filter and 2 belts	\$114.75
2/2014	Repair heater module	\$364.42
10/2015	Replace batteries	\$207.26
10/2015	Certification inspection	\$1,000.00
1/2017	Repair fuel system	\$1,900.00
6/2017	Repair antilock brake sensor and modulating valve	\$1,822.00
8/2017	Certification inspection	\$1,100.00
9/2017	Repair brakes and leaking axle seal	\$2,200.00
10/2018	Annual inspection and associated repairs. Replaced bucket liner	\$3,324.07
8/2018	Replaced LED light bar	\$387.68
<b>Total</b>		<b>\$15,480.18</b>

### Project Alternative

This vehicle was originally scheduled for replacement in FY 2018. This vehicle is in good mechanical condition, therefore Staff recommends deferring its replacement to FY 2022. The vehicle will then be re-evaluated for replacement.

**Operational Impact**

This vehicle is the only aerial bucket truck in the fleet. Its primary use is tree trimming and streetlight maintenance and its secondary uses include building maintenance and assisting the Village with holiday decorating.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

This vehicle was carried over from FY 2018

## Vehicles - Public Works

Pickup Truck #48

FY 2021

\$38,500

CERF

Critical

Recommended

Contingent on Funding

Make Ford  
 Model F350 Super Duty  
 Year 2012  
 Purchase Cost \$31,032  
 Purchased FY 2012  
 Useful Life 8 years  
 Current Life 8 years



### Vehicle Description

Various personnel in the Operations Division use this pickup truck to perform tasks throughout the Village. This truck is equipped with emergency lighting, a two-way radio and a nine foot angling snowplow, which is used for plowing alleys and parking lots during snow events. The vehicle is also one of three pickup trucks outfitted with a large broom attachment and is used during leaf season to push piles of leaves.

Total Vehicle Miles	36,361 (As of 10/30/18)
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
1/2015	Repair rear bumper	\$365.00
12/2018	Replaced battery	\$200.00
11/2018	Replace hydraulic pump and motor relay for plow/broom	\$1,500.00
<b>Total</b>		<b>\$2,065.00</b>

### Project Alternative

The alternative is to defer the purchase to later years.

### Operational Impact

This is one of ten primary snow plowing vehicles in the Village's snow and ice control fleet. It is also one of three vehicles necessary during leaf season to push piles of leaves. These two operations are very demanding on the drivetrain and suspension systems. A breakdown reduces the Village's snow removal response and extends the time needed to complete snow and leaf removal operations. This unit is used for other tasks which would also be impacted if it were removed from the fleet.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

None



## Vehicles - Public Works

Pickup Truck #49

FY 2024

\$40,000

CERF

Critical

Recommended

Contingent on Funding

Make Ford  
 Model F350 Super Duty  
 Year 2015  
 Purchase Cost \$26,676  
 Purchased FY 2016  
 Useful Life 8 years  
 Current Life 4 years



### Vehicle Description

Various personnel in the Operations Division use this pickup truck to perform tasks throughout the Village. This truck is equipped with emergency lighting, a two-way radio and a nine-foot angling snowplow, which is used for plowing alleys and parking lots during snow events. The vehicle is also one of three pickup trucks outfitted with a large broom attachment and is used during leaf season to push piles of leaves.

Total Vehicle Miles	9,106 (As of 10/26/17)
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
10/2015	Replace plow hydraulic manifold	\$410.00
<b>Total</b>		<b>\$410.00</b>

### Project Alternative

The alternative is to defer the purchase to later years.

### Operational Impact

This is one of ten primary snow plowing vehicles in the Village's snow and ice control fleet. It is also one of three vehicles necessary during leaf season to push piles of leaves. These two operations are very demanding on the drivetrain and suspension systems. A breakdown reduces the Village's snow removal response and extends the time needed to complete snow and leaf removal operations. This unit is used for other tasks which would also be impacted if it were removed from the fleet.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

### Carryover History

None

## Vehicles - Public Works

Pickup Truck #67 FY 2023 \$45,000 CERF/WS

Critical

Recommended

Contingent on Funding

Make Ford  
 Model F350 Super Duty  
 Year 2015  
 Purchase Cost \$30,814  
 Purchased FY 2015  
 Useful Life 8 years  
 Current Life 5 years



### Vehicle Description

Various personnel in the Water Division use this pickup truck to respond to water service calls, JULIE locates, and water system emergencies. This truck is equipped with emergency lighting, a two-way radio and a nine foot angling snowplow, which is used for plowing alleys and parking lots during snow events. The vehicle is also one of three pickup trucks outfitted with a large broom attachment and is used during leaf season to push piles of leaves.

Total Vehicle Miles	17,221 (As of 10/30/18)
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
Various dates	Three oil changes	\$125.00
12/2017	Replace battery	\$161.00
<b>Total</b>		<b>\$286.00</b>

### Project Alternative

The alternative is to defer the purchase to later years.

### Operational Impact

This is one of ten primary snow plowing vehicles in the Village's snow and ice control fleet. It is also one of three vehicles necessary during leaf season to push piles of leaves. These two operations are very demanding on the drivetrain and suspension systems. A breakdown reduces the Village's snow removal response and extends the time needed to complete snow and leaf removal operations. This unit is used for other tasks which would also be impacted if it were removed from the fleet.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

### Carryover History

None

## Vehicles - Public Works

Transit Connect Van #68 (Engineering)      FY 2024      \$24,000      CERF/WS

Critical

Recommended

Contingent on Funding

Make                      Ford  
 Model                    Transit Connect Van  
 Year                      2015  
 Purchase Cost          \$19,076  
 Purchased                FY 2016  
 Useful Life              8 years  
 Current Life             5 years



### Vehicle Description

Personnel in the Engineering Division use this vehicle. This vehicle was purchased as a replacement for Truck #62. It is used by the Village Engineer for the inspection of Village infrastructure and monitoring capital projects throughout the Village.

Total Vehicle Miles	4,086 (As of 11/2/2018)
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
6/1/2018	Oil change	75.00
<b>Total</b>		<b>\$75.00</b>

### Project Alternative

The alternative is to defer the purchase to later years.

### Operational Impact

This unit is the primary vehicle for the Engineering Division within the Public Works Department. It is used to monitor the maintenance and inspection of projects as they occur within the Village.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

### Carryover History

None

## ***Equipment – Five Year Capital Improvement Program***

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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 five years. 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 are usually financed through the Capital Equipment Replacement Fund (CERF). The following improvements are proposed for FY 2020:

<b>Equipment</b>	<b>Cost of Equipment</b>	<b>Funding Source</b>	<b>This Project is:</b>
Overweight Truck Scales (PD)	\$ 17,440	CERF	Recommended
Pole Mounted Radar (PD)	\$ 26,244	GF	Recommended
Police Radios-Handheld and In-Car (PD)	\$ 17,190	CIF	Critical
Street Camera System Optimization (PD)	\$ 14,570	CERF	Recommended
SCBA Breathing Air Compressor (FD)	\$ 45,000	CERF	Recommended
Alerting System (FD)	\$ 61,000	CIF	Recommended
ALS Defibrillator 2 (FD)	\$ 26,750	CERF	Recommended
Fire Radios (FD)	\$ 17,190	CIF	Critical
Safety Monitor (FD)	\$ 45,000	GF	Recommended
Chipper 1800 Model (PW)	\$ 90,000	CERF	Critical
Flood Barriers (PW)	\$ 39,400	WS	Recommended
<b>Total</b>	<b>399,784</b>		

**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.

These projects are highlighted in yellow.

**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.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Equipment**  
**Fiscal Year 2020 Budget**

	This Project is:	Fiscal Year					Five Year Total	Funding Source
		2020	2021	2022	2023	2024		
<b>Police Department</b>								
Automatic License Plate Reader	Recommended	-	-	-	-	46,129	46,129	CERF
Live Scan System	Critical	-	-	-	-	25,000	25,000	CERF
Overweight Truck Scales	Recommended	17,440	-	-	-	-	17,440	CERF
Pole Mounted Radar	Recommended	26,244	-	-	-	-	26,244	GF
Police Radios	Critical	17,190	17,190	-	38,857	38,857	112,094	CIF/CERF
Radar	Recommended	-	35,500	-	-	-	35,500	CERF
Village Hall Camera System	Recommended	-	58,444	-	-	-	58,444	CERF
Digital In-Car Cameras	Critical	-	-	-	-	61,847	61,847	CERF
Street Camera System	Recommended	-	-	-	-	178,944	178,944	CERF
Street Camera System Optimization	Recommended	14,570	-	-	-	-	14,570	CERF
<b>Fire Department</b>								
SCBA Air Compressor	Recommended	45,000	-	-	-	-	45,000	CERF
Alerting System	Recommended	61,000	-	-	-	-	61,000	CIF
ALS Defibrillator 2	Recommended	26,750	-	-	-	-	26,750	CERF
ALS Defibrillator 1	Recommended	-	-	-	-	28,000	28,000	CERF
Hydraulic Extrication Equipment	Contingent	-	-	-	-	45,000	45,000	CERF
Fire Radios	Critical	17,190	17,190	-	38,857	38,857	112,094	CIF/CERF
Safety Monitor	Recommended	45,000	-	-	-	-	45,000	GF
<b>Public Works</b>								
Stump Grinder	Recommended	-	46,000	-	-	-	46,000	CERF
Stainless Steel V-Box Salt Spreader (Large)	Critical	-	22,000	-	-	-	22,000	CERF
Chipper - 1800 Model	Critical	90,000	-	-	-	-	90,000	CERF
Asphalt Kettle	Recommended	-	-	-	22,000	-	22,000	CERF
Fuel System Improvements	Critical	-	150,000	-	-	-	150,000	CERF
6" Trash Pump	Critical	-	-	-	-	22,000	22,000	CERF/WS
Flood Barriers	Recommended	39,400	-	-	-	-	39,400	WS
<b>Total</b>		<b>399,784</b>	<b>346,324</b>	<b>-</b>	<b>99,714</b>	<b>484,634</b>	<b>1,330,456</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Capital Equipment Replacement Fund (CERF)	193,760	311,944	-	99,714	462,634	1,068,052
Capital Improvement Fund (CIF)	34,380	34,380	-	-	-	68,760
General Fund (GF)	132,244	-	-	-	-	132,244
Water/Sewer (WS)	39,400	-	-	-	-	39,400
CERF - Water and Sewer (CERF/WS)	-	-	-	-	22,000	22,000
<b>Totals</b>	<b>399,784</b>	<b>346,324</b>	<b>-</b>	<b>99,714</b>	<b>484,634</b>	<b>1,330,456</b>

## Equipment - Police

Automatic License Plate Reader Systems

FY 2024

\$46,129

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2017

Cost

\$39,195

Funding History

N/A



### Project Description & Justification

The Automated License Plate Reader (ALPR) is a third generation plate reader currently installed in squad car #6. It consists of two cameras mounted on top of the car roof which identify license plates through recognition software. The license plate is compared to a database of wanted vehicles (Hit List) and alerts the user that a particular vehicle is wanted for the commission of a crime. All license plate data is stored on a server and can be plotted on a map and retrieved at a later date as part of an investigation. In addition, plates can be entered by investigators and officers to identify cars currently on the Boot List or that are wanted locally for investigative purposes.

The ALPR was purchased in FY 2017. As of November 30, 2018, it has read 789,938 license plates since January 1, 2018 and it has had 3,243 "hits", or alerts that determined there is something wrong with a particular vehicle (stolen, wanted, suspended, registered sex offenders, etc.). Staff also manually enters vehicles eligible for the Denver Boot. The ALPR has identified over five vehicles eligible for the boot in 2018, with over \$4,500 collected in fines/fees. Also, four Administrative Holds were identified using the ALPR which led to \$2,000 in Administrative Fees to be collected. In addition, traffic stops initiated from an ALPR "hit" resulted in eight criminal arrests.

Staff is monitoring the performance of this technology to determine if it should be expanded for use on a additional squad cars or to fixed-location APLR cameras in the business, medical, school districts on Lake Street. This technology will start to be used in January 2019 as part of our permit parking and parking enforcement program.

### Project Alternative

This is a beneficial tool and has yielded results. With previous models, the useful life of this equipment is approximately five to seven years. Although replacement is recommended in FY 2024, if the system is still functioning properly, replacement may be deferred for another year.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None with extended warranty	\$1,000/year to continue annual maintenance after warranty period

**Carryover History**

None

## Equipment - Police

Live Scan System

FY 2024

\$25,000

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2018

Cost

\$0

Funding History

N/A



### Project Description & Justification

The Live Scan System is an automated fingerprint system that creates digital images of an arrestee's fingerprints. Once digitized, the prints are sent to several entities including the Illinois Bureau of Identification, Chicago Police Department and FBI, and are stored in their databases. This system is currently in use by and connected to all of the Cook County municipalities and streamlines the identification process. The life expectancy of the current system is six to eight years. The Village did not incur any costs for the last system supplied by Cook County and the State of Illinois in 2004. This was the same for the new system installed in November 2017.

### Project Alternative

Although the cost of replacement has been funded by Cook County and the State of Illinois in the past, there is no available information providing municipalities with future funding for this mission critical automated fingerprint system.

The Village should continue to fund this equipment in case the financial responsibility of the next system is passed on to the municipality.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	Repairs covered by Cook County

### Carryover History

This item continues to be carried over for future fiscal years. Replacement is dependent on Cook County's time frame for upgrading to a new system and funding options.



## Equipment - Police

Overweight Truck Scales

FY 2020

\$17,440

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2006

Cost

\$16,600

Funding History

N/A



### Project Description & Justification

The Police Department currently owns four truck scales. These scales are placed under each of the tires of a suspected overweight vehicle. If determined to be overweight, the fine could be substantial depending on the violation. The Police Department conducts annual overweight truck enforcement missions and the dayshift patrol has a trained enforcement officer who does periodic enforcement, separate from the planned missions. Overweight trucks are a detriment to Village streets because they decrease the life of the pavement through excessive wear. The scales are certified by the Illinois State Police annually. The useful life expectancy of the scales is ten years.

### Project Alternative

Without the portable truck scales, the enforcement officers will have to seek alternate weigh scales. This would require the truck enforcement officer following the truck to an alternate location outside the Village's jurisdiction, increasing the amount of time on the traffic stop and increasing the unavailability of the officer. The purchase of this equipment may be deferred depending on the condition of the scales at the time of budget planning.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$1,000/year	Annual Re-certification of Equipment

### Carryover History

Although the scales have reached their useful life expectancy, replacement of these scales has been carried over from FY 2019 and they are currently in full working order. Each year the scales are re-certified by the State of Illinois, and will require replacement only if found deficient by the State or if a newer, a more efficient technology becomes available.

**Equipment - Police**

**Pole Mounted Radar Speed Display Signs**      **FY 2020**      **\$26,244**      **GF**

Critical

Recommended

Contingent on Funding

**Original Purchase Date**

N/A

**Cost**

**Funding History**

New Equipment



**Project Description & Justification**

The Pole Mounted Radar Speed Display Signs are cost-effective solutions for traffic calming in residential neighborhoods, park areas, school zones, business districts, financial districts, and any location where vehicular, pedestrian, and bicyclist traffic are intermingled. The highly visible signs are strategically placed to get drivers' attention and provide an immediate reminder to slow down. The signs act as a 24-hour a day force multiplier to police patrol units and can be used to address/monitor citizen driven complaints. The signs assist in the Village's mission to provide professional public safety services and reduce accidents. The Public Works and Police Departments work together to identify locations where vehicles are known to travel at higher rates of speed and where increased risks to the general public need mitigation. The new pole mounted signs have software with the ability to conduct traffic counts and calculate average speed traveled, which will be beneficial to both the Police and Public Works Departments for engineering and enforcement analysis. In addition, the use of this type of software assists with providing accurate data for grant writing opportunities.

The Pole Mounted Speed Radar Signs come in two versions, a dual display with speed and message display, and the other a single speed display. The dual display requires hard wiring to be powered, while the single speed display can be solar powered. The dual hard-wired sign costs \$4,813 and the single solar equipped sign costs \$3,935. Staff recommends the purchase of six total signs split between hard-wired and solar, for a cost of \$26,244.

**Project Alternative**

The alternatives to this equipment would be to have increased use of officers monitoring multiple areas for speeding violations and to purchase additional Speed Radar Trailers. Having speed radar equipment that can be mounted permanently or for extended periods of time is a more effective and efficient use of Village resources.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Under warranty for one year	Periodic maintenance - battery replacement

**Carryover History**

This project was carried over from FY 2019 due to focus on the Street Camera System Expansion and Safe School Routes Program.

## Equipment - Police

Police Radios-Handheld and In-Car	FY 2020	\$17,190	CIF
	FY 2021	\$17,190	CIF
	FY 2022	\$0	CIF
	FY 2023	\$38,857	CERF
	FY 2024	\$38,857	CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

N/A

Cost

N/A

Funding History

New Project



### Project Description & Justification

The use of portable and in-car radios for public safety communication is imperative for rapid and effective response to any call for service. Radio communications allow for the appropriate personnel and equipment to respond to an event. It enhances both officer and citizen safety, and allows for immediate mission critical information to be broadcasted to individual officers or regional agencies monitoring the radio channel. Today's radios allow for a multitude of options such as analog/digital crossover, voice and data transmissions, Bluetooth, encryption, talk groups, priority channel scans, and GPS location tracking. In addition, with newer technology which allows for radio channel capacities that range from 32-300 channel allotment, the ability to communicate with other local, county, state, and federal agencies is possible along with the ability to communicate across other discipline lines such as fire, public works, and emergency management.

At this time, the police radio program includes a mix of Village owned single-band radios and dual-band radios owned exclusively by the Cook County Department of Homeland Security. Both types of radios are nearing or are past end of life. In addition, Cook County can request immediate return of their radio equipment at any time. Newer radio models and recent technology allows for tri-band radios in the handheld format and some dual-band in-car radios. The newer tri-band technology allows for enhanced interoperability over the VHF, UHF, and 800 MHz spectrums plus improved voice clarity, and longer lasting batteries.

Fiscal Year Projects include: FY 2020 five (5) VHF-only handheld radios; FY 2021 five (5) VHF-only handheld radios; FY 2023 five (5) Tri-band handheld radios, and FY 2024 five (5) Tri-band handheld radios. This replacement schedule will continue into FY 2025-FY 2027.

### Project Alternative

In FY 2021-2024 WSCDC to budget for and conduct a group purchase for all WSCDC communities. Public safety radios are mission critical equipment for use in day-to-day normal and emergency operations. A leasing option may be available for the handheld units but may not be supported for in-car mobile radios.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
Under Warranty for one-three years	Periodic Maintenance and Battery Replacement

**Carryover History**

None

## Equipment - Police

**Radar-Vehicle and Handheld** **FY 2021** **\$35,500** **CERF**

Critical

Recommended

Contingent on Funding

**Original Purchase Date**

N/A

**Cost**

N/A

**Funding History**

New Project



### Project Description & Justification

Law enforcement vehicle mounted and handheld radar units are used to measure the speed of autos, trucks, and motorcycles on public roadways. This proven traffic enforcement and traffic calming technology has been an effective tool for police agencies for several decades. In River Forest, like other communities, the number one citizen driven complaint is speeding vehicles on both the main and secondary streets within the Village. In Traffic Court, the industry standard for proving a traffic violator was traveling at a specific speed over a posted speed limit is the use of radar devices as the method to establish probable cause for the stop and as an accurate measurement of speed for documentation on the citation.

The police department currently deploys seven in-car radar units and three handheld units. The in-car radar units are mounted in the six front line squad cars and in the dedicated traffic enforcement unit. The three handheld radar units are used by officers assigned to plain clothes units or secondary line squad cars. The addition of an eighth in-car radar unit will allow a system to be installed in the School Liaison Officer's marked squad car for use as part of his regular duties of ensuring school zones are safe for both vehicles and pedestrians. The current state of our handheld and in-car radar units are past or near end of life. A recommended life-span of these systems is five to seven years. The updated radar technologies draw less power which cuts down on both vehicle battery and alternator maintenance. In addition, the new systems will improve the overall effectiveness and efficiency of traffic enforcement operations of the department.

The cost of eight in-car radar systems is \$21,744 (@ \$2,718 per unit). Installation is estimated at \$500 per unit. The cost of three handheld radar units is \$9,750.

### Project Alternative

The use of radar for speed enforcement is an industry standard. The use of pole mounted speed radar enforcement cameras as an alternative is prohibited under Illinois state law for small municipalities. Another speed enforcement technology, Lidar, is cost prohibitive due to the costs being 30% to 50% more than the standard radar systems.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Under Warranty for one-three years	Periodic Maintenance and Battery Replacement

## Carryover History

None

**Equipment - Police**

Village Hall Camera System

FY 2021

\$58,444

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2009

Cost

\$350,000+

Funding History

N/A



**Project Description & Justification**

The Village currently has 38 fixed digital cameras located inside and around the exterior of Village Hall. The camera system is supported by software and hardwired to the server. The cameras can be monitored by supervisors, the dispatch center and patrol officers on their squad car laptops, or desktop computers. They are used to monitor the booking room, interview rooms, and prisoner cells along with the front doors and lobby. These cameras are fixed with the majority mounted inside the building, they have no moving parts therefore they have a longer useful life. The estimated life of this equipment is approximately eight to ten years. These cameras assist with providing overall building security for employees, public officials, residents, visitors, and arrestees. The system enhances the liability protection strategies recommended by IRMA. The Village's IT and camera vendor estimate the cost of camera replacement at \$1,538 per camera.

Repair/Improvement	Estimated Cost	Fiscal Year
Replace internal cameras as needed (38 @ \$1,538 per unit)	\$ 58,444	FY 2021
<b>Total Project Cost</b>	<b>\$ 58,444</b>	

**Project Alternative**

As with any technology the hardware and software becomes outdated and should be replaced with newer technology. The continuation of this program is highly recommended. These cameras assist with providing overall building security for employees, public officials, residents, and visitors.

**Project Impact**

There is no annual service fee for this program.

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	Once replaced there is no recurring annual costs for maintenance.

**Carryover History**

None.

## Equipment - Police

Digital In-Car Cameras

FY 2024

\$61,847

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2017

Cost

\$50,761

Funding History

N/A



### Project Description & Justification

The six front line vehicles and the unmarked traffic unit currently have digital cameras mounted to the dash board. The cameras/audio system are used during traffic stops and arrests for recording purposes. Evidence obtained during a traffic arrest is utilized during a trial. The traffic stops are downloaded on a server and stored for a minimum of 30 days or longer depending on the type of incident. Any future upgrades to the in-car camera system may require upgrades to the data storage system on the Village's computer network. The in-car cameras have an expected life-span of seven years.

### Project Alternative

This is a necessary tool that helps protect the Village and its officers from false accusations, for obtaining evidence to support a criminal convictions, and allowing increased police transparency for the public. Replacement is highly recommended.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Under warranty for three years	After warranty expires, repair costs per unit as required will be incurred.

### Carryover History

None



## Equipment - Police

Street Camera System

FY 2024

\$178,944

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2018

Cost

\$110,517

Funding History

N/A



### Project Description & Justification

The Village currently has eighteen Pan-Tilt-Zoom (PTZ) digital cameras located along the business corridor on Lake Street and thirty-eight fixed cameras in and around Village Hall. The camera system is supported by software, servers and a wireless antenna system. The cameras can be monitored by supervisors, the dispatch center as well as patrol officers on their squad car laptops, desktops or video monitors. The digital images are stored for a minimum of 30 days and are used as evidence in criminal cases. The PTZ cameras have moving parts and are out in the elements; therefore they are prone to a shorter life expectancy than fixed cameras. The estimated life of the equipment is approximately five to eight years. Future CIP processes may determine that all Village Hall, Street Cameras, and future camera expansion projects can be combined for planning and funding. A recommended planning study by IT in FY 2020 shall determine future program expansion, equipment costs, infrastructure upgrades, IT costs, and maintenance costs.

This program has been very successful as a force multiplier. Officers routinely refer to the cameras to assist in identifying suspects involved in criminal activity and the Detectives use the footage to create still shots of suspects for bulletins. Below are some images of suspects who were captured on the camera system and later identified as perpetrators of a crime. It also allows for 24-hour situational awareness of weather conditions and pedestrian/traffic flow.



Retail Theft



Retail Theft



Bike Theft



Burglary



Drug Deal



Robbery



Not only are the cameras used for helping to identify criminal suspects, the cameras have been used for situational awareness including the Blizzard of 2011 where the Public Works department was able to monitor the snow accumulation and effects on traffic along the Lake Street business corridor.

<b>Repair/Improvement</b>	<b>Estimated Cost</b>	<b>Fiscal Year</b>
Camera System Servers	\$65,771	FY 2024
Street Camera System	\$61,500	FY 2024
Wireless Point to Point Antenna/Backhaul	\$51,763	FY 2024
<b>Total Project Cost</b>	<b>\$178,944</b>	

**Project Alternative**

Due to the nature of this system, there is no alternative if the project is not funded in the future. The continuation of this program is highly recommended.

**Project Impact**

There is no annual service fee for this program.

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	There is no recurring annual cost

**Carryover History**

The majority of servers, drivers, storage, software, cables, back-up batteries, antennas, mounting hardware, and cameras have been replaced during the past two fiscal years. This will allow for some equipment to have a longer life-span, which may reduce some estimated costs or allow for partial carryover of some of the equipment.

**Equipment - Police**

**Street Camera System Optimization** **FY 2020** **\$14,570** **CERF**

Critical  Recommended  Contingent on Funding

**Original Purchase Date** N/A  
**Cost** N/A  
**Funding History** New Project



**Project Description & Justification**

The Village's Street Camera Program has been highly successful over the past seven to nine years in that the cameras act as a force multiplier, enhance situational awareness, identify criminals, provide evidence for court trials, and enhance officer transparency and accountability. In addition, the cameras provide assistance to the Fire Department, Public Works Department, and Village Administrative Staff. Investigative assistance to outside law enforcement agencies has been ongoing and positive, with the Village having a reputation of having a high tech robust street camera program. In FY 2018, the Village Board approved an expansion of the camera program, which added six cameras to the areas west of Lathrop and between Lake Street/Hawthorne Avenue. The new cameras provide vital coverage to the Village owned parking areas, the Metra Station, parts of Keystone Park, and several intersections that are considered major ingresses and egresses to the Village. Part of the FY 2018 expansion included significant internal and external infrastructure improvements, which benefited the overall street camera program. The FY 2018 CIP budgeted amount was \$46,501. Staff and IT believe this new optimization project will provide for the ability to fully utilize the upgraded infrastructure that was created during the FY 2018 expansion project, and provide for both efficiency and effectiveness of camera coverage in this vital and well traveled part of the community. The plan consists of adding three cameras to the areas between Hawthorne Avenue/Lake Street and Lathrop Avenue/Thatcher Avenue.

<p><b>Central and Lathrop</b>  <b>Total Install Estimate- \$5,090</b></p> <ul style="list-style-type: none"> <li>• Pinner/Power: \$1,500</li> <li>• Camera: \$2,000</li> <li>• License: \$300</li> <li>• Antenna: \$120</li> <li>• Antenna Extension: \$150</li> <li>• Surge Protector: \$25</li> <li>• POE+: \$200</li> <li>• Radio: \$220</li> <li>• IT Billable Hours for Programming 5 @ \$115/Hr.: \$575</li> </ul>		
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<b>Keystone and Lake</b> <b>Total Install Estimate: \$5,590</b> <ul style="list-style-type: none"> <li>• Pinner/Power: \$2,000</li> <li>• Camera: \$2,000</li> <li>• License: \$300</li> <li>• Antenna: \$120</li> <li>• Antenna Extension: \$150</li> <li>• Surge Protector: \$25</li> <li>• POE+: \$200</li> <li>• Radio: \$220</li> <li>• IT Billable Hours for Programming 5 @ \$115/Hr.: \$575</li> </ul>		
<b>Thatcher and Lake</b> <b>Total Install Estimate: \$3,890</b> <ul style="list-style-type: none"> <li>• Pinner/Power: \$300</li> <li>• Camera: \$2,000</li> <li>• License: \$300</li> <li>• Antenna: \$120</li> <li>• Antenna Extension: \$150</li> <li>• Surge Protector: \$25</li> <li>• POE+: \$200</li> <li>• Radio: \$220</li> <li>• IT Billable Hours for Programming 5 @ \$115/Hr.: \$575</li> </ul>		
<b>Total Project Cost</b>	<b>\$14,570</b>	

**Project Alternative**

This optimization project has no true alternatives but is flexible with primary and secondary identified camera locations in the proposed zone. It will enhance the current street system and maximize value to an area where investment has already occurred. Staff sees this new project as the final inclusion of new cameras until a FY 2020 comprehensive IT study can be conducted to formally plan for expansion into the North Avenue and Madison Street areas of the Village. Staff believes the work completed to-date will help serve as a model for these expansions.

**Project Impact**

Currently the system does not require an annual operating budget line-item, as there is no recurring annual service fees.

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	There are no recurring annual costs

**Carryover History**

None

## Equipment - Fire

SCBA Breathing Air Compressor

FY 2020

\$45,000

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 1999

Cost

\$17,200

Funding History

N/A



### Project Description & Justification

The purpose of this project is to upgrade and replace the Air Compressor that fills the self-contained breathing apparatus (SCBA's). This piece of equipment is a specialized compressor with a specific filtering system necessary to fill the breathing air required for firefighters to enter an IDLH (immediately dangerous to life and health) atmosphere. Staff has delayed the scheduled purchase of a new SCBA air compressor because the current equipment continues to last longer than anticipated. However, this piece of equipment is critical during times of fire suppression and training when SCBA's are in use.

### Project Alternative

The alternative to this purchase is to continue maintenance of the piece of equipment and keep it usable for as long as possible; however, if the equipment fails and is not repairable immediate purchase would be required.

### Project Impact

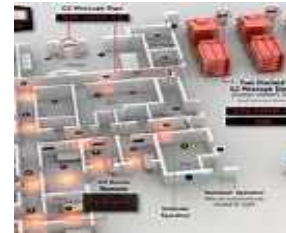
Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$1,500	Annual maintenance & flow testing after third year.

### Carryover History

This item was carried over from FY 2017

**Equipment - Fire**

<b>Station Alerting System</b>	<b>FY 2020</b>	<b>\$61,000</b>	<b>CIF</b>
<input type="radio"/> Critical <input checked="" type="radio"/> Recommended <input type="radio"/> Contingent on Funding			
<b>Original Purchase Date</b>	FY 2019		
<b>Cost</b>	\$61,000		
<b>Funding History</b>	N/A		



**Project Description & Justification**

The purpose of this project is to upgrade and replace the Station Alerting System in the Fire Station. This equipment is a vital link between the Fire Department and West Suburban Consolidated Dispatch Center. 9-1-1 calls in River Forest are dispatched over the alerting system, providing the quick response times River Forest residents have come to expect.

The Station Alerting System was budgeted for FY 2019. Installation will likely carry over to FY 2020 due to coordinating logistics with WSCDC, Oak Park, Elmwood Park and Forest Park. The system is expected to have a service life of 10 years. As technology advances, the new alerting system will gradually become outdated. Replacement will be necessary to provide the latest technology to ensure the quickest response possible.

A new, state-of-the-art alerting system would provide many improvements. A computerized voice system would be clear and easy to understand. Upgraded speakers throughout the fire station would provide full coverage to all locations in the station. The tone ramp-up system incorporated into the Station Alerting System would prevent a shock to the firefighters' system at night by gradually building volume and light instead of the current full volume system. Message boards will give a visual signal for all dispatches, reinforcing the audio alert.

**Project Alternative**

The alternative to this purchase is to continue maintenance of the current piece of equipment and keep it usable for as long as possible. However, if the equipment fails and is not repairable, immediate purchase would be required. Lead time for a new system is six to nine months. A second alternative is to either lease the system or finance the system. A seven year term for either of these options would cost \$10,000 per year.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
\$3,200 – one year after five year warranty period.	Continue annual maintenance after warranty period.

**Carryover History**

Carried over from FY 2019.

## Equipment - Fire

ALS Defibrillator #1

FY 2024

\$28,000

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2016

Cost

\$20,538

Funding History

N/A



### Project Description & Justification

The purpose of this project is to upgrade and replace the Advance Life Support (ALS) Defibrillator on the frontline ambulance. This piece of equipment is vital for the paramedics to provide life support care to cardiac and trauma patients. The new 12-lead cardiac monitor provides critical information to the paramedic in the field and emergency doctor in the hospital. Besides monitoring cardiac rhythms, the Life Pac 15 monitors carbon monoxide and oxygen levels, pulse, blood pressures and delivers defibrillation (electric shock) to convert dangerous dysrhythmias.

Defibrillation is a common treatment for life-threatening, cardiac dysrhythmias. Defibrillation consists of delivering electrical energy to the affected heart through a set of affixed chest pads. Defibrillators are the only proven way to resuscitate a person who has had cardiac arrest who is still in ventricular fibrillation (V-fib) or ventricular tachycardia (V-tach). The success rate for V-fib patients receiving a first shock treatment is greater than 90%.

### Project Alternative

The alternative to this purchase is to continue maintenance of the current piece of equipment and keep it usable for as long as possible. However, if the equipment fails and is not repairable, immediate purchase would be required. Lead time for defibrillators is approximately two months from purchase to receipt of units.

The Village's intent is to purchase and place the new ALS defibrillator on the front line ambulance and move current frontline equipment to ALS Engine 213.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$200 – one year after warranty period.	Continue annual maintenance after warranty period.

### Carryover History

None

**Equipment - Fire**

**ALS Defibrillator #2** **FY 2020** **\$26,750** **CERF**

Critical
  Recommended
  Contingent on Funding

**Original Purchase Date**                      FY 2013  
**Cost**     \$23,200  
**Funding History**                                N/A



**Project Description & Justification**

The purpose of this project is to upgrade and replace the Advance Life Support (ALS) Defibrillator on the frontline ambulance. This piece of equipment is vital for the paramedics to provide life support care to cardiac and trauma patients. The new 12-lead cardiac monitor provides critical information to the paramedic in the field and emergency doctor in the hospital. Besides monitoring cardiac rhythms, the Life Pac 15 monitors carbon monoxide and oxygen levels, pulse, blood pressures and delivers defibrillation (electric shock) to convert dangerous dysrhythmias.

Defibrillation is a common treatment for life-threatening, cardiac dysrhythmias. Defibrillation consists of delivering electrical energy to the affected heart through a set of affixed chest pads. Defibrillators are the only proven way to resuscitate a person who has had cardiac arrest who is still in ventricular fibrillation (V-fib) or ventricular tachycardia (V-tach). The success rate for V-fib patients receiving a first shock treatment is greater than 90%.

**Project Alternative**

The alternative to this purchase is to continue maintenance of the current piece of equipment and keep it usable for as long as possible. However, if the equipment fails and is not repairable, immediate purchase would be required. Lead time for defibrillators is approximately two months from purchase to receipt of units.

The Village’s intent is to purchase and place the new ALS defibrillator on the front line ambulance and move current frontline equipment to ALS Engine 213.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$200 – one year after warranty period.	Continue annual maintenance after warranty period.

**Carryover History**

None



## Equipment - Fire

Hydraulic Extrication Equipment

FY 2024

\$45,000

CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date

FY 2013

Cost

\$32,640

Funding History

N/A



### Project Description & Justification

The purpose of this project is to upgrade and replace the hydraulic extrication tools on frontline engine and Quint.

This equipment is operated by firefighting crews during vehicular accidents and technical rescue responses. The current tools have been in use for five years with a planned useful life of ten years.

New technology allows for lighter weight tools and more powerful lifting, spreading and cutting pressures. New power units may be all electric (battery powered) in the future, taking up less space on the apparatus. The Genesis extrication equipment has state of the art tools, which are lighter, faster, and easier for personnel to operate, thereby reducing the potential for back injuries and strains.

### Project Alternative

Evaluate new technology as the useful life limit approaches.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$550 after one year	Annual maintenance after first year warranty period expires.

### Carryover History

None

## Equipment - Fire

Radios	FY 2020	\$17,190	CIF
	FY 2021	\$17,190	CIF
	FY 2022	\$0	CIF
	FY 2023	\$38,857	CERF
	FY 2024	\$38,857	CERF

Critical

Recommended

Contingent on Funding

Original Purchase Date	N/A
Cost	N/A
Funding History	N/A



### Project Description & Justification

The purpose of this project is to upgrade and replace the portable radios currently used by the Fire Department. This communications equipment is a critical tool for firefighters to relay vital information on emergency scenes. The project is being divided over five budget years in an effort to lessen the budget impact. The first two years, VHF only radios will be purchased, providing a cost savings and allowing time for a clearer picture of WSCDC's intentions in regards to radio frequencies. In future years, tri-band radios will be purchased to bring us up to date in technology.

This equipment is operated by firefighting crews on all emergency scenes. The current radios are on loan from Cook County Department of Homeland Security (CCDHS) and have been in use for over ten years with a planned useful life of ten years.

New tri-band technology allows for communication on various frequencies such as short-wave, VHF, UHF and BC band. Tri-band radios allow the operator to switch between at least three frequencies. This flexibility allows greater interoperability with other departments. Good radio communication is vital to firefighter safety when operating in hazardous environments.

### Project Alternative

An Assistance to Firefighter Grant has been applied for through FEMA to purchase 20 radios and accessories. If the grant is not awarded, this funding will become necessary. The other alternative is to continue to use the radios provided by CCDHS. These radios can be requested for return by CCDHS at any time and are reaching the end of their useful life. If and when CCDHS requests the radios, new portable radios will need to be purchased.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$500 after three years	Annual maintenance after three year warranty period expires.

### Carryover History

None

## Equipment - Fire

Safety Monitor

FY 2020

\$45,000

GF

Critical

Recommended

Contingent on Funding

Original Purchase Date

N/A

Cost

N/A

Repairs (through 11/30)

N/A



### Project Description & Justification

This project is a pilot program designed to prevent vehicle accidents at low clearance viaducts. The system is designed to perform in extreme weather conditions. This system also prevents solar rejection, the times when direct sunlight would normally interfere with operation. The system can use a combination of red/infrared light for detection. An audible/visual alarm will sound in the area when activated, alerting drivers to the low clearance ahead. The system will perform for all vehicles, not just fire department vehicles, creating a safer driving environment in River Forest for all drivers. The pilot program would outfit both sides of one viaduct. The plan is to outfit the Keystone Avenue viaduct for the initial installation. If successful, installation at other viaducts in River Forest could be considered.

### Project Alternative

An onboard device is available for \$1,500 per unit at a total cost of \$7,500 for the Fire Department. These devices only operate when emergency lights are on and only provide protection for vehicles in which they are installed. These devices have never been used for this purpose and are untested. Another alternative is to increase training and further alter Operating Directives to increase awareness. This alternative has been used in the past and has not been successful. We are also seeking out programmers to build an app to work with on-board GPS using geo-fences to alert drivers when they are approaching low clearance viaducts. This app will only reduce the risk of vehicles with the app installed from having an accident.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
Minimal	System is virtually maintenance free, requiring only periodic cleaning of dust from lenses.

### Carryover History

None

## Equipment - Public Works

Stump Grinder

FY 2021

\$46,000

CERF

Critical

Recommended

Contingent on Funding

Make Carlton  
 Model 7500  
 Purchase Cost \$20,000  
 Purchased FY 2000  
 Useful Life 15 years  
 Current Life 20 years



### Project Description & Justification

This equipment grinds tree stumps by means of a rotating cutting disk that chips away the tree stump located on Village right-of-way (typically the parkway). It is the only piece of equipment in the Village's fleet that can perform this operation.

Total Equipment Hours	1,171 (As of 10/30/2018)
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### Recent Maintenance Costs

Date	Maintenance Performed	Cost
7/2013	Replace fan belt	\$12.00
9/2013	Replace worn cutting teeth	\$150.00
8/2014	Replace worn cutting teeth	\$200.00
9/2014	Replace fan belt	\$825.00
9/2014	Replace worn cutting teeth	\$175.00
4/2015	Replace remote control	\$678.45
<b>Total</b>		<b>\$2,040.45</b>

### Project Alternative

Alternatives to replacing the stump grinder in FY 2021 are as follows:

1. Defer replacing the system until it breaks down completely.
2. Purchase used stump grinder.
3. Lease a stump grinder.
4. Outsource all stump grinding services.
5. Incorporate stump grinding into the tree removal contract and maintain the current unit to grind stumps from in-house tree removals. This would reduce the work load on this piece of equipment by half or more and extend the life of the stumper.

Staff will analyze other alternatives and evaluate closer to the scheduled replacement of this equipment.

### Operational Impact

Although there are alternatives for performing and/or providing for the removal of parkway tree stumps, not performing or providing this service would create trip hazard liabilities to the Village by eliminating the Village's capacity to remove tree stumps.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

The unit was originally scheduled for replacement in FY 2015, but since there have not been any significant maintenance issues, Staff recommends deferring its replacement to FY 2021.

**Equipment - Public Works**

**Stainless Steel V-Box Salt Spreader (Large)                      FY 2021                      \$22,000                      CERF**

Critical                       Recommended                       Contingent on Funding

Make                      Swenson  
 Model  
 Year                      2006  
 Purchase Cost                      \$14,424  
 Purchased                      FY 2007  
 Useful Life                      12 years  
 Current Life                      13 years



**Project Description & Justification**

The Village owns and utilizes three large front-line v-box salt spreaders that are used for snow fighting operations. This unit is also equipped with a liquid pre-wetting system that is used to melt snow and ice when temperatures are below twenty degrees.

Total Vehicle Miles	N/A
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**Recent Maintenance Costs**

Date	Maintenance Performed	Cost
	None to date	
<b>Total</b>		<b>\$0.00</b>

**Project Alternative**

Contractual salting and snow removal.

**Operational Impact**

Not having this unit would reduce the Village's ability to salt roadways by 33%.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

The unit was originally scheduled for replacement in FY 2019, but since there have not been any significant maintenance issues, Staff recommends deferring its replacement to FY 2021. The spreader will then be re-evaluated for replacement.

**Equipment - Public Works**

**Brush Chipper-1800 Model** **FY 2020** **\$90,000** **CERF**

- Critical
  Recommended
 Contingent on Funding

Make Vermeer  
 Model BC1800  
 Purchase Cost \$29,755  
 Purchased FY 2000  
 Useful Life 10 years  
 Current Life 20 years



**Project Description & Justification**

This unit (1800 model) is one of two chippers used by the Public Works Department to chip tree debris. The unit has a capacity to chip branches and logs up to 18-inches in diameter that are associated with tree removals, tree trimming, and emergency storm damage cleanup. This brush chipper is considered the workhorse of the Village’s forestry operations and is utilized during the initial response to tree damage caused by storms. There are over 8,500 parkway trees in the Village that are maintained by the Public Works Department.

Total Equipment Hours	5,136 (As of 10/30/2018)
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**Recent Maintenance Costs**

Date	Maintenance Performed	Cost
7/2011	Oil pressure sensor	\$50.00
8/2016	New axle	\$2,700.00
9/2012	Radiator cap, thermostat, engine diagnostics	\$300.00
12/2012	Rebuild starter	\$475.00
2/2013	Rebuild engine	\$8,158.00
9/2013	Replace hood latches	\$39.00
9/2013	Repair loose belt and leaking injector	\$218.00
9/2014	Sharpen blades	\$144.00
7/2015	Replace tensioning pulley and belt	\$678.27
10/2015	Change blades and bolts	\$175.00
6/2016	Change blades and bolts	\$340.84
3/2017	Change blades and bolts	\$330.17
9/2017	Replaced dust cover weldments	\$80.00
7/2018	Repair wiring and brake problems	\$382.00
<b>Total</b>		<b>\$14,070.28</b>

**Project Alternative**

This unit was initially scheduled for replacement in FY 2010. Since the unit was in good mechanical condition at that time its replacement was deferred to FY 2014 at a projected cost of \$77,000. Engine problems involving anti-freeze leaking into the engine block required repairs that were completed in February 2013 (FY 2014). These repairs have extended the useful life of the brush chipper by approximately six more years, thus deferring its replacement until FY 2020 when, at that time, Staff will further explore replacing the unit. Until that time, and unless the unit breaks down and cannot be repaired, Staff will continue using the brush chipper and paying for repairs on an as-needed basis.

### **Operational Impact**

The elimination of this brush chipper would reduce the chipping capacity by approximately 70% and would result in the need to contract tree and brush chipping operations for larger sized debris, including emergency storm response.

### **Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

### **Carryover History**

This item was originally scheduled for replacement in 2010 but its replacement was deferred. In FY 2014 it was determined it was more cost effective to perform significant repairs that extended the useful life of the equipment.



**Equipment - Public Works**

Asphalt Kettle

FY 2023

\$22,000

CERF

Critical

Recommended

Contingent on Funding

Make Stepp Manufacturing  
 Model SPH-2.0  
 Purchase Cost \$14,445  
 Purchased FY 2008  
 Useful Life 15 years  
 Current Life 12 years



**Project Description & Justification**

A tandem axle trailer that is used for transporting cold patch material. The trailer is equipped with a diesel fuel fired burner that is capable of heating hot and cold patch material to the proper temperature.

**Recent Maintenance Costs**

Date	Maintenance Performed	Cost
4/2016	Repair leaf springs	\$300.00
7/2017	Replace battery	\$100.00
12/2017	Replace tires	\$300.00
<b>Total</b>		<b>\$700.00</b>

**Project Alternative**

Contract all pothole and permanent patching.

**Operational Impact**

Patching potholes would have to be done from the back of a dump truck. The Village would not have the ability to work with hot patch (permanent) asphalt material.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

None

## Equipment - Public Works

### Fuel System Improvements

FY 2021

\$150,000

CERF

Critical

Recommended

Contingent on Funding

Purchase Cost           \$90,000  
 Purchased               FY 1990  
 Useful Life              30 years  
 Current Life             30 years



### Project Description & Justification

The improvement project that is proposed for FY 2021 involves the replacement of the 6,000 gallon unleaded and 2,000 gallon diesel underground storage tanks, replacement of the existing fuel pumps, and upgrades to the management software. Staff currently has estimates totaling approximately \$16,000 to replace the fuel management system and software separately from the tanks and dispenser pumps. This project can be completed in advance of the tank replacement and would provide an updated system that could use proximity card access and multiple administrator access to reporting features.

Date	Maintenance Performed	Cost
2012	Replaced unleaded fuel suction pump	
2014	Replaced all hoses	\$250.00
2015	Replaced spill buckets, manholes and a portion of the cement pads on both tanks	\$15,000.00
2016	Removed internal moisture and sediment from bottom of diesel tank and added fuel treatment	\$287.00
2018	Replaced two manhole covers	\$200.00
2019	Replaced chip key reader / perform required testing	\$1,050.00
Total		<b>\$16,787.00</b>

### Project Alternative

The primary alternative to these system maintenance items/improvements is to eliminate the fuel system and purchase unleaded and diesel fuel at privately owned service stations. Staff performed an analysis in FY 2013 and determined that the most cost effective means for fueling the Village's fleets (Public Works, Police, and Fire) is maintaining an in-house fuel dispensing system. This analysis remains valid and the existing system is currently a cost effective fueling solution. The fuel system is used by the local school district and park district as well.

Underground Storage Tanks (USTs): The Village's two fiberglass USTs were installed in FY 1990 at a cost of \$90,000. These tanks have a useful life of approximately 30 years and their replacement is incorporated in the CERF (projected replacement in FY 2021).

### Operational Impact

None.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

None

**Equipment - Public Works / Water and Sewer**

**6" Trash Pump** **FY 2024** **\$22,000** **CERF/WS**

Critical  Recommended  Contingent on Funding

Make Wacker  
 Model  
 Purchase Cost \$9,600 \*Purchased used  
 Purchased FY 2009  
 Useful Life 15 years  
 Current Life 11 years



**Project Description & Justification**

The Village owns two six-inch trash pumps that are capable of pumping water at up to 1,300 gallons per minute. These pumps are used to dewater streets and sewers during flood events.

**Recent Maintenance Costs**

Date	Maintenance Performed	Cost
	None to date	
<b>Total</b>		<b>\$0.00</b>

**Project Alternative**

The alternative is to rent this pump as needed; however, supplies of this type of pump are limited and may not be available when needed.

**Operational Impact**

Not having this equipment limits the Village's ability to respond to flood events. That may impact multiple residents.

**Project Impact**

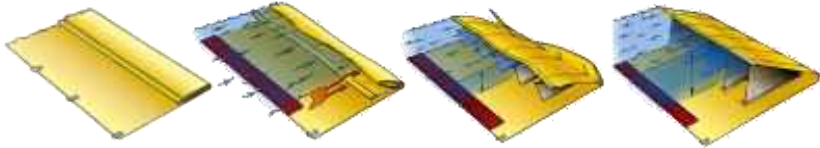
Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

None

**Equipment - Public Works**

<b>Flood Prevention Equipment</b>		<b>FY 2020</b>	<b>\$39,400</b>	<b>WS</b>
	<input type="radio"/> Critical <input checked="" type="radio"/> Recommended <input type="radio"/> Contingent on Funding			
<i>Make</i>	MegaSecur			
<i>Model</i>	Water-Gate WL39			
<i>Year</i>	2020			
<i>Purchase Cost</i>	\$39,400			
<i>Purchased</i>	FY 2020			
<i>Useful Life</i>	15 years			



**Project Description & Justification**

This equipment is used as a flood protection dam. It is quickly deployable, rolls into place and the design uses the weight of the incoming floodwater to deploy and stabilize itself. Water enters and accumulates at the bottom of the barrier as the water level rises, causing the barrier to unfold and swell. Two sets would be purchased and used at the west end of the Lake Street berm (110 feet long, 3 feet high) and across Chicago Avenue (90 feet long, 5 feet high) just west of Thatcher Avenue to prevent river flooding.

**Project Alternative**

Continue using sandbags at the western edge of the Lake Street berm near the Des Plaines River and continue staging the flood wall across Chicago Avenue just west of Thatcher Avenue with concrete jersey barriers.

**Operational Impact**

The ability to quickly deploy these flood prevention dams will allow staff more time to respond to other Village flooding issues.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Carryover History**

None

## ***Information Technology – Five Year Capital Improvement Program***

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The Village's Information Technology (IT) function 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. The Village outsources its day-to-day and project specific IT support services to its current vendor, ClientFirst. In FY 2019 ClientFirst updated the Village's IT Strategic Plan with recommendations from that plan incorporated into the CIP. This plan evaluated the Village's hardware and software capabilities to determine any possible improvements that could be made in order to fully meet the Village's business needs.

The following improvements are proposed for FY 2020:

<b>Equipment</b>	<b>Cost of Equipment</b>	<b>Funding Source</b>	<b>This Project is:</b>
Street Camera Strategic Plan	\$ 25,000	CIF	Recommended
Network Improvements	\$ 12,500	CIF	Recommended
Software Upgrades	\$ 230,600	CIF	Recommended
Computer Replacements	\$ 124,070	CIF	Recommended
<b>Total</b>	<b>\$ 392,170</b>		

**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.

These projects are highlighted in yellow.

**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.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Information Technology**  
**Fiscal Year 2020 Budget**

	This Project is:	Fiscal Year					Five Year Total	Funding Source
		2020	2021	2022	2023	2024		
Street Camera System Strategic Plan	Recommended	25,000	-	-	-	-	25,000	CIF
Network Improvements	Recommended	12,500	-	160,000	-	-	172,500	CIF
Software Upgrades	Recommended	230,600	295,000	75,000	75,000	-	675,600	CIF
Computer Replacements	Recommended	124,070	38,000	38,000	38,000	125,000	363,070	CIF
<b>Total</b>		<b>392,170</b>	<b>333,000</b>	<b>273,000</b>	<b>113,000</b>	<b>125,000</b>	<b>1,236,170</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Capital Improvement Fund (CIF)	392,170	333,000	273,000	113,000	125,000	1,236,170
<b>Totals</b>	<b>392,170</b>	<b>333,000</b>	<b>273,000</b>	<b>113,000</b>	<b>125,000</b>	<b>1,236,170</b>

## Information Technology

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Street Camera System Strategic Plan	FY 2020	\$25,000	CIF
	FY 2021	\$0	CIF
	FY 2022	\$0	CIF
	FY 2023	\$0	CIF
	FY 2024	\$0	CIF

Critical

Recommended

Contingent on Funding

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**Funding History**      N/A

### Project Description & Justification

The Village has worked to greatly improve and expand its street camera system over the past few years. This asset serves as a force multiplier for the Police Department and is a constant tool for day-to-day operations. Due to the expanding needs for wireless network, equipment, and storage paired with the desire to continue to expand the system, the Village would benefit from completing a review and planning process to determine best practices and needs going forward. This plan will evaluate the current system, develop a deployment strategy for future expansion, complete a cost model and also prepare a maintenance schedule for existing equipment.

### Project Alternative

An alternative to this plan would be to continue operating in a reactive manner and address issues as they arise. Additionally, the Village could elect to continue to expand on a case-by-case basis or not expand the system. These alternatives are not recommended due to difficulties created and efficiencies lost by completing the project piecemeal.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None



## Information Technology

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Network Improvements	FY 2020	\$12,500	CIF
	FY 2021	\$0	CIF
	FY 2022	\$160,000	CIF
	FY 2023	\$0	CIF
	FY 2024	\$0	CIF

Critical

Recommended

Contingent on Funding

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### Funding History

FY 2019	\$	18,300
FY 2018	\$	20,300

### Project Description & Justification

#### Recommended for FY 2020

##### Electronic Records Retention - \$5,000

In order to accommodate increasingly large sets of electronic data, the Village needs to develop and implement an Electronic Records Retention Policy. After the policy is developed by staff, the Village's IT consultant will then modify hardware and software configurations to meet the standards established in the new policy.

##### Upgrade of Wireless Point-to-Point to Public Works - \$7,500

The Village currently has a wireless point-to-point connection to Public Works which runs at a speed of approximately 50 MB per second. The Village would like to upgrade this connection to increase speeds to nearly 1,000 MB per second, or 1 GB. This increased connection and improved speed will allow for auto failover of critical network services and reduce the amount of time required to create copies of offsite backups. This initiative will well prepare the Village for growth of future services and also avoid alternative solutions that include monthly fees.

#### Recommended for FY 2022

##### Server Replacement - \$100,000

The Village's current server system was upgraded in FY 2019, but will ultimately need to be replaced. The scheduling of replacement in FY 2022 is consistent with the recommended seven year lifespan. This initiative will provide the Village with a stable and responsive platform for all computer related tasks and help ensure minimal down time.

##### SAN (Storage Area Network) Replacement - \$60,000

A SAN (storage area network) is a high performance shared data storage solution. The SAN allows all servers to have access to the same data and provide server redundancy. The Village currently has one SAN with two expansion shelves in the production environment. The Village then utilizes its other SANs for backup storage to extend the useful life of the hardware. This project is proposed to complement the server replacement project in FY 2022.

Electronic Records Retention	
Hardware/Software/Licensing	\$0
Consulting	\$5,000
Upgrade of Wireless Point-to-Point to Public Works	
Hardware/Software/Licensing	\$5,000
Consulting	\$2,500
Server Replacement	
Hardware/Software/Licensing	\$85,000
Consulting	\$15,000
SAN (Storage Area Network) Replacement	
Hardware/Software/Licensing	\$45,000
Consulting	\$15,000
Total	\$172,500

**Project Alternative**

Alternatives to all projects include continuing with the status quo or deferring the project to a later date; however, it is not recommended. The Village continues to move toward management of its computer network based on best practices and these recommendations are consistent with that approach.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
N/A	N/A

## Information Technology

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Software Upgrades	FY 2020	\$230,600	CIF
	FY 2021	\$295,000	CIF
	FY 2022	\$75,000	CIF
	FY 2023	\$75,000	CIF
	FY 2024	\$0	CIF

Critical

Recommended

Contingent on Funding

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### Funding History

FY 2019	\$40,000
FY 2018	\$85,500

### Project Description & Justification

#### Recommended for FY 2020

##### Land and License Management Software - \$135,000

The Village's ERP, Springbrook, was acquired by Accela. After the acquisition the Village was informed that Springbrook would continue to support the existing land management module that is utilized to process building permits and various Village licenses but that there would be no future enhancements. During FY 2018, Village staff evaluated several Land and License Management Software options including the program offered by Accela. Due to the experience that the Village's IT consultant has had implementing the Accela solution with other clients, it is not recommended at this time. This project was deferred from FY 2018 to FY 2019 because the appropriate solution had not yet been identified. During FY 2019, the Village issued a request for information for this service with the goal of identifying available solutions that best fit the Village's needs. The utilization of software for this purpose is critical to Village operations and customer service. Modifying the program used to collect and process this information could provide opportunities for more efficient operations, including better customer access to real-time data, better project tracking tools, better integration with the Village's GIS, increased opportunities for constituent self-service and more. The budgeted amount in FY 2020 is for the process of completing a contract with a vendor, purchasing software, and beginning implementation.

##### ERP System Sustainability Planning Contribution - \$75,000

The Village utilizes Springbrook as its Enterprise Resource Planning (ERP) tool. Currently, this system supports budgeting, payroll, accounts payable and receivable, building permits, and more. Use of the system is critical for day-to-day and long-term Village operations. In order to prepare for evaluating the enhancement, improvement, or replacement of the ERP system in the next one to four years, it is being recommended that the Village make annual contributions to begin to fund this project. Any contributions will be set aside for this purpose.

Laserfiche Gap Analysis and Improvement Plan - \$13,100

The Village has been utilizing the Laserfiche document imaging program for several years to electronically store Village records. This has reduced physical storage needs at the Village Hall and improved productivity by making records easier to locate and reproduce when needed. While leveraged heavily by the Village today, Laserfiche has the ability to serve more purposes in the future. These services include an online web portal to improve ease of records searches, online form expansion, and better integration with GIS. Due to the complexity of some parts of the system and the scope of the work, a plan is recommended to outline best practices and workflows for the Village to use moving forward.

HTE Data Extraction and Preservation - \$7,500

Prior to using Firehouse software, the Fire Department utilized a system called HTE for its record and data storage. Due to the software no longer being used and long past its useful life, it is important to extract and preserve the system's reports and data. This will prepare the Village and Fire Department for when the system is decommissioned or fails.

**Recommended for FY 2021**

Land and License Management Software - \$200,000

As a continuation of the FY 2020 project, further implementation cost and software purchases are anticipated in FY 2021. Due to the complexity of the integrations with other Village systems and importance of data continuity, the implementation is anticipated to span two years.

Laserfiche Upgrades - \$20,000

The Village anticipates being able to implement improvements and upgrades to the Laserfiche system in FY 2021 that are products of the improvement plan. This is anticipated to include launching a web portal, improving online form access, and further integrating Laserfiche with GIS. Various upgrades to the Laserfiche system, over time, will allow the Village to achieve efficiencies and improve access to records.

Land and License Management Software (FY 2020)	
Hardware/Software/Licensing	\$90,000
Consulting	\$15,000
Implementation Services	\$30,000
ERP System Sustainability Planning Contribution	
Hardware/Software/Licensing	\$75,000
Consulting	\$0
Laserfiche Gap Analysis and Improvement Plan	
Hardware/Software/Licensing	\$10,100
Implementation Services	\$3,000
HTE Data Extraction and Preservation	
Hardware/Software/Licensing	\$0
Consulting	\$7,500
Land and License Management Software (FY 2021)	
Hardware/Software/Licensing	\$50,000

Implementation Services	\$150,000
Laserfiche Upgrades	
Hardware/Software/Licensing	\$18,000
Consulting	\$2,000
Total	\$450,600

**Project Alternative**

Deferral of Land and License Management Software is not recommended at this time. If unfunded, the Village would continue to utilize the Springbrook system but would have little to no ability to improve the service. The Village would also have to consider less expensive options that may not lead to the desired outcomes. ERP contributions could be deferred or lowered but could create a larger cost if left to be a one-time payment. Laserfiche improvements could be deferred to allow for more critical projects to proceed. Staff can continue to utilize the current functions of Laserfiche as is today. HTE data extraction is important to be able to preserve that data. While the project could be deferred, it assumes the risk of losing the antiquated system prior to the extraction.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
\$24,000	<i>Land &amp; License Management:</i> Annual cost of subscription for individual users (\$200/month/user with an estimated 10 users; this cost may be reduced if fewer users are identified).
\$5,550 in FY 2020, \$8,550 in FY 2021	<i>Laserfiche:</i> Annual maintenance and licensing fee for Laserfiche was previously \$5,550. Adding the WebLink feature would increase the annual cost by \$3,000.

## Information Technology

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Computer Replacements	FY 2020	\$124,070	CIF
	FY 2021	\$38,000	CIF
	FY 2022	\$38,000	CIF
	FY 2023	\$38,000	CIF
	FY 2024	\$125,000	CIF

Critical

Recommended

Contingent on Funding

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### Funding History

FY 2019	\$38,000
FY 2018	\$43,490

### Project Description & Justification

The purpose of this program is to upgrade the central processing units (CPUs) of the Village desktop and laptop computer inventory. The estimated service life of a computer is four to six years; however, the Village generally does not recommend keeping equipment after its warranty has expired. Replacements are prioritized based upon the job responsibilities of employees and some workstations may be assigned older but serviceable PCs while other workstations may receive a new computer on a more frequent basis. Currently, the Village owns approximately 50 desktop computers and 40 laptop computers.

Staff and the Village's IT consultant updated an inventory of Village-owned IT/communication equipment, identifying warranty periods for each piece and determined a replacement schedule. Based on that information, equipment is rotated out when warranties expire. Funding IT replacements in this manner standardizes equipment throughout the organization, allows the Village to obtain bulk purchase pricing, improves IT support service efficiency, improves staff efficiency with fewer projected system interruptions, enhances system security, and avoids unnecessary spikes in IT expenses.

### Public Safety In-Vehicle Laptops

Funding in FY 2020 is higher than other years due to the replacement of Police and Fire Department in-vehicle ruggedized laptops. The laptops that are in the public safety vehicles are specialized Panasonic Toughbooks that are tailored to the operating environment (a vehicle) and nearly constant usage for 24-hour shift operations. It is recommended that these machines are replaced every four years to maintain a stable and responsive platform for public safety personnel and ensure minimal downtime. Most of the machines that are currently deployed were purchased in the Spring of 2015 and hold a three year warranty. To accommodate the new CAD system these machines received upgraded hard drives and memory in FY 2017. It is recommended that the entire fleet of computers is replaced at one time to avoid differences in models that can cause operational issues for both the Public Safety Departments and IT. This cost also includes accessory items such as in-car mounts.

Periodic replacement of peripheral equipment such as monitors, keyboards and printers may still be required on an ad hoc basis and money has been set aside for that purpose in the General Fund.

PC Replacement	
Hardware/Software/Licensing	\$110,000
Consulting	\$14,070
<b>Total</b>	<b>\$124,070</b>

**Project Alternative**

If this project is not funded, computers would continue to be replaced in smaller quantities and over a longer period of time, potentially reducing the productivity of the units and ability to support newer versions of software. A possible alternative to the spike in FY 2020 is splitting the cost of the public safety in-vehicle laptops over two fiscal years. This is not recommended due to the complications that may be created by having multiple models in the field; however, if this option is selected staff will work to ensure that the number of models is minimized. In FY 2020, when the Panasonic Toughbooks are scheduled for replacement, the Village will explore product alternatives to see if there is a lower cost solution that is compatible with a more ruggedized environment.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
\$1,000	Minor maintenance costs to update software, monitors and minor repairs

## Information Technology

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Audio Visual System Replacement	FY 2020	\$0	CIF
	FY 2021	\$0	CIF
	FY 2022	\$0	CIF
	FY 2023	\$0	CIF
	FY 2024	\$0	CIF

Critical

Recommended

Contingent on Funding

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### Funding History

FY 2019

### Project Description & Justification

The Village purchased Audio/Visual equipment for use in the Community Room and second floor Conference Room in 2010. The functionality of the existing equipment has become more unreliable during FY 2018. Previous CIPs contemplated replacement of this system in FY 2021 at a cost of \$125,000. However, due to ongoing service issues, advances in technology, and the degree to which the Village relies on this equipment for public meetings and transparency, it is recommended that funding be accelerated and the system be replaced in FY 2019. It is believed that \$90,000 is the maximum cost and that the cost can be lowered as the Village continues to refine the scope of the system.

### Project Alternative

Staff will continue to monitor system performance, annual maintenance costs and determine whether its replacement should be expedited or deferred.

### Project Impact

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
N/A	N/A



## Information Technology

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IT Security Initiatives	FY 2020	\$0	CIF
	FY 2021	\$0	CIF
	FY 2022	\$0	CIF
	FY 2023	\$0	CIF
	FY 2023	\$0	CIF

Critical

Recommended

Contingent on Funding

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### Spending History

FY 2019

#### Project Description & Justification

##### Security Audit - \$15,000

In the recent years, the Village has undergone major changes and improvements to its IT infrastructure. Additionally, new cyber threats and attacks are continually increasing. As a measure of protection, it is recommended that the Village complete a security audit. This process would involve a third party vendor (separate from the Village's usual IT vendor) conducting a security audit of all systems. This includes penetration testing from inside and outside the network. Doing so will test past implementations and identify areas for improvement.

##### Laserfiche and Springbrook Active Directory Authentication - \$2,140

The Village is currently maintaining multiple applications and each has its own authentication method. This initiative will combine the authentication methods of the more commonly accessed systems. Once this is complete, it will be simpler to maintain security compliance regulations by only needing to make changes in one location.

##### CJIS Compliance - \$6,400

The Criminal Justice Information Systems (CJIS) outlines best practices that need to be observed to ensure that the proper security is being applied to all information related to criminal justice. This initiative provides funding for changes that may be required as a result of CJIS Compliance results.

##### Password Policy - \$5,160

The Village currently has limited guidelines on how passwords should be created, updated, and shared. This initiative will allow the Village to work with the IT Consultant on creating a Password Policy following industry best practices and is required under CJIS Compliance listed above. Once the new policy is created, it will be implemented throughout the Village.

##### Network Monitoring Tools and Implementation - \$4,340

A network monitoring tool is the use of a system that constantly monitors a computer network for slow or failing components and then notifies the network administrator (via email, SMS or other alarms) in case of outages or other trouble. Network monitoring is part of network management. The Village has many network devices that need to be monitored. The Village will benefit from a tool that will notify IT staff when a failure occurs or may occur so the IT staff can take corrective action before the issue results in significant downtime.

Firewall Replacement - \$12,800

A firewall is a network security device that monitors incoming and outgoing network traffic and decides whether to allow or block specific traffic based on a defined set of security rules. Firewalls have been a first line of defense in network security for over 25 years. They establish a barrier between secured and controlled internal networks that can be trusted and untrusted outside networks, such as the internet. The Village currently has a firewall to protect against outside threats over the internet. This is vital piece of hardware that needs to be maintained and updated as the threats and technology change. The Village's current firewall is no longer under warranty and therefore has limited functionality. In addition, the existing firewall will not support the planned increase in internet bandwidth.

Two-Factor Authentication Policy - \$6,520

Two-Factor Authentication, also known as 2FA, two step verification or TFA (as an acronym), is an extra layer of security that is known as "multi factor authentication" that requires not only a password and username but also something that only that user has on them, i.e. a piece of information only they should know or have immediately to hand - such as a physical token. Some staff require access to the Village resources after hours to monitor systems or perform assigned tasks. Currently there are several different solutions in place to accomplish this need. The Village would like to consolidate down to a single method that can be audited as needed. As a part of the CJIS compliance any remote connections to the network should require two factor authentication.

Security Audit	
Hardware/Software/Licensing	\$0
Consulting	\$15,000
Laserfiche & Springbrook AD Authentication	
Hardware/Software/Licensing	\$0
Consulting	\$2,140
CJIS Compliance	
Hardware/Software/Licensing	\$0
Consulting	\$6,400
Password Policy	
Hardware/Software/Licensing	\$0
Consulting	\$5,160
Network Monitoring Tools and Implementation	
Hardware/Software/Licensing	\$2,500
Consulting	\$1,840
Firewall Replacement	
Hardware/Software/Licensing	\$7,000
Consulting	\$5,800
Two-Factor Authentication Policy	
Hardware/Software/Licensing	\$0
Consulting	\$6,520
Total	\$52,360

**Project Alternative**

Each of these projects is integral in the Village's continual effort to keep its IT network secure. An alternative to the project would be to prioritize initiatives and implement them as funds allow over a longer period of time.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
\$2,500	<i>Network Monitoring Tool:</i> Annual cost of licensing
\$2,500 in FY 2022	<i>Firewall:</i> Annual support and maintenance is included in the purchase for the first three years. Cost for support and maintenance in FY 2022 is estimated to be \$2,500.

**Streets Improvements – Five Year Capital Improvement Program**

The Village of River Forest recognizes the importance of consistently maintaining its streets, sidewalks and alleys to ensure the safety of drivers and pedestrians.

**Street System Overview**

The Village has 31.6 miles of centerline streets. The recommended funding level for the next five years will maintain the average street rating in a good or excellent condition. The Village conducts an annual pavement inventory study and has implemented a microsurfacing and crack sealing program to prevent degradation of the streets. The Village rates streets as follows:

Streets		
Surface Condition	Pavement Ranking	Estimated Remaining Life
Excellent	7.6 – 9.0	15 to 20 years
Good	6.1 – 7.5	10 to 15 years
Fair	4.6 – 6.0	6 to 10 years
Poor	1.0 – 4.5	2 to 5 years

**Sidewalk & Curb System Overview**

The Village of River Forest recognizes the need to have a network of safe pedestrian accesses throughout the community. The primary emphasis of the sidewalk program is to ensure the safety of the Village’s sidewalks. To that end, the Village funds 100% of the replacement cost of sidewalks in immediate need of replacement.

The following improvements are proposed for FY 2020:

Improvement	Cost	Funding Source	Nature of Project
Street Patching	\$ 75,000	GF - \$65,000 WS - \$10,000	Critical
50/50 Sidewalk, Curb & Gutter	\$ 65,000	GF - \$55,000 WS - \$10,000	Critical
Alley Improvement Program	\$ 300,000	CIF	Recommended
Parking Lot Improvements	\$ 75,000	CIF/PR	Recommended
Street Improvement Program (SIP)	\$ 618,311	MFT - \$250,000 WS - \$50,000 IIBF - \$318,311	Critical
Street Maintenance Program	\$ 100,000	GF - \$50,000 MFT - \$50,000	Critical

Traffic Signals	\$ 133,000	CIF	Recommended
Safe Routes to School	\$ 187,500	CIF	Recommended
<b>Total</b>	<b>\$ 1,699,641</b>		

**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.

Critical projects are highlighted in yellow.

**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.

Village of River Forest, Illinois  
 Five Year Capital Improvement Program  
 Streets, Sidewalks, Alleys  
 Fiscal Year 2020 Budget

	This Project is:	Fiscal Year					Five Year Total	Funding Source
		2020	2021	2022	2023	2024		
Street Patching Program	Critical	75,000	90,000	100,000	100,000	100,000	465,000	GF/WS
50/50 Sidewalk, Curb & Gutter	Critical	65,000	65,000	65,000	65,000	65,000	325,000	GF/WS
Alley Improvement Program	Recommended	300,000	225,000	225,000	225,000	225,000	1,200,000	CIF
Parking Lot Improvements	Recommended	75,000	-	85,000	150,000	-	310,000	CIF & CIF/PR
Street Improvement Program (SIP)	Critical	618,311	300,000	300,000	300,000	300,000	1,818,311	MFT/WS/ IIBF
Street Maintenance Program	Critical	100,000	100,000	100,000	100,000	100,000	500,000	GF/MFT
Traffic Signals	Recommended	133,000	-	-	-	-	133,000	CIF
Safe Routes to School	Recommended	187,500	-	-	-	-	187,500	CIF
<b>Total</b>		<b>1,699,641</b>	<b>780,000</b>	<b>875,000</b>	<b>940,000</b>	<b>790,000</b>	<b>5,084,641</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
General Fund (GF)	170,000	185,000	195,000	195,000	195,000	940,000
Motor Fuel Tax (MFT)	445,830	300,000	300,000	300,000	300,000	1,645,830
Water and Sewer Fund (WS)	70,000	70,000	70,000	70,000	70,000	350,000
Capital Improvement Fund (CIF)	620,500	225,000	310,000	375,000	225,000	1,755,500
CIF/Parking Reserve (CIF/PR)	75,000	-	-	-	-	75,000
Infrastructure Improvement Bond Fund (IIBF)	318,311	-	-	-	-	318,311
<b>Totals</b>	<b>1,699,641</b>	<b>780,000</b>	<b>875,000</b>	<b>940,000</b>	<b>790,000</b>	<b>5,084,641</b>

## ***Streets, Sidewalks, Alleys - Public Works***

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### **Street Patching Program**

Streets and Alleys		<b>GF</b>	<b>WS</b>
	<b>FY 2020</b>	<b>\$65,000</b>	<b>\$10,000</b>
	<b>FY 2021</b>	<b>\$80,000</b>	<b>\$10,000</b>
	<b>FY 2022</b>	<b>\$90,000</b>	<b>\$10,000</b>
	<b>FY 2023</b>	<b>\$90,000</b>	<b>\$10,000</b>
	<b>FY 2024</b>	<b>\$90,000</b>	<b>\$10,000</b>

Critical

Recommended

Contingent on Funding

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### **Spending History**

<b>Year</b>		<b>GF</b>		<b>WS</b>		<b>Total</b>
FY 2019	\$	48,976	\$	10,000	\$	58,976
FY 2018	\$	54,212	\$	10,000	\$	64,212
FY 2017	\$	80,178	\$	10,000	\$	90,178
FY 2016	\$	66,465	\$	8,860	\$	75,325
FY 2015	\$	36,906	\$	10,000	\$	46,906

### **Program Description & Justification**

The purpose of this program is to maintain and improve surface conditions of Village streets and alleys by patching defective areas. This program is intended for streets and alleys of all condition ratings to prolong their useful lives. To accomplish this goal, an annual funding level of \$90,000 to \$100,000 over the next five years is recommended. These funding levels are estimates and reflect inflationary increases for construction.

Historically, Village Staff annually inspected all streets and the areas of pavement failure were placed on a patching list, which is provided to the Village's contractor. Village Staff now also includes alleys and parking lots in their inspections and identifies patching needs throughout the Village. Asphalt pavement patching utilizes hot mix asphalt (HMA), the standard material approved by the Illinois Department of Transportation for surface repairs. Two inches (thickness) of the failing surface pavement is milled and replaced with new HMA. This patching process is more permanent and resilient than the use of asphalt "cold" patch. The ideal timing for this maintenance project is when streets are evaluated with a good condition rating, but showing signs of early deterioration (cracking, potholes, etc.).

Included in this street patching program are Water and Sewer funds (\$10,000 annually) to install HMA patches on street openings created for the repair of the Village's water and sewer systems.

### **FY 2020 Recommended Project**

In FY 2020 a total of \$90,000 is recommended for this maintenance project. Various locations to be patched are identified on a continual basis.



**Program Alternative**

The primary alternative is to resurface the street. Resurfacing, which is a more costly process, involves not only the replacement of defective surface but also additional surface areas that have not begun to deteriorate.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

## Streets, Sidewalks, Alleys - Public Works

### 50/50 Sidewalk, Curb & Gutter

Sidewalks, Aprons, and Curb

	GF	WS
FY 2020	\$55,000	\$10,000
FY 2021	\$55,000	\$10,000
FY 2022	\$55,000	\$10,000
FY 2023	\$55,000	\$10,000
FY 2024	\$55,000	\$10,000

Critical

Recommended

Contingent on Funding

### Spending History

Year	GF	WS	Total
FY 2019	\$ 55,658	\$ 10,000	\$ 65,658
FY 2018	\$ 53,734	\$ 10,000	\$ 63,734
FY 2017	\$ 51,710	\$ 10,000	\$ 61,710
FY 2016	\$ 47,979	\$ 8,482	\$ 56,461
FY 2015	\$ 60,735	\$ 4,503	\$ 65,238

### Program Description & Justification

The purpose of this program is to improve the overall condition of public sidewalks and curb/gutters throughout the Village. The objective is to eliminate all trip hazards for pedestrians and to bring all sidewalk ramps into compliance with the requirements set forth in the Americans with Disabilities Act (ADA). To accomplish these objectives, an annual funding level of \$50,000-\$75,000 is recommended. Failure to implement a sidewalk improvement program to repair deteriorated/damaged sidewalk can expose the Village to liability resulting from trips and falls.

For the purposes of this program, the Village is divided into three geographical areas. Village Staff conducts annual inspections of one area each year. Over the course of a three-year period, all public sidewalks are inspected. Additionally, Staff has begun analyzing sidewalk ramp criteria at as many locations as time allows. This will allow us to optimize replacement of sidewalk ramps over time to ensure compliance with ADA requirements. Trip hazards are rated according to the displacement of adjoining sidewalk squares. The following table identifies the sidewalk condition ratings, description of condition, and the recommended action:

Sidewalk Condition	Joint Displacement	Recommended Action
A	> 1/2" but < or = 1"	Consider Replacement
B	>1" but < 1 1/2"	Recommend Replacement
C	>1 1/2" with loose/missing pieces	Replace immediately

During annual inspections, the Village offers participation in the 50/50 sidewalk replacement cost share program upon request for sidewalks with a “B” rating. A copy of the inspection form is delivered to property owners describing the sidewalk’s condition and requesting their participation. The Village replaces all sidewalks with a condition “C” rating. The Village also installs detectable warning pads, located at street crossings and intersections, that are designed for the visually impaired. The following is a summary of proposed expenditures for FY 2020:

General Fund

Sidewalk – Condition C (100% Village):	\$35,000
Sidewalk – Condition A or B (50/50):	\$10,000 (revenue - \$5,000)
Driveway Aprons (100% Resident):	\$5,000 (revenue - \$5,000)
Detectable Warning Pads (100% Village):	\$5,000

Water and Sewer Fund

Curb/gutter (100% Village):	\$10,000
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**Sidewalk and Curb Annual Inspection Areas:**

<u>Area No.</u>	<u>Area Limits</u>	<u>Inspection Years</u>
1	Des Plaines River to Harlem/Hawthorne to Chicago	2021, 2024, 2027
2	Thatcher to Harlem/Chicago to Greenfield	2022, 2025, 2028
3	Thatcher to Harlem/Greenfield to North	2020, 2023, 2026

In addition to the annual inspection of the aforementioned designated areas, Village Staff inspects all sidewalks in close proximity to schools, parks, and commercial/retail areas on an annual basis.

The Village also allows property owners to replace their driveway aprons and private courtesy walks through this program at 100% cost to the property owner (full payment due to the Village prior to commencement of work). The primary benefit to the property owner is that they receive competitively bid pricing for their improvement.

**Program Alternative**

Although the preferred option is sidewalk replacement, alternatives to this program involve the installation of asphalt cold patch in the displaced joints and/or grinding off the edge of the raised sidewalk. Not only is the patching option aesthetically unattractive, the asphalt can break loose and re-expose the displaced sidewalk that re-establishes liability to the Village and increases maintenance costs.

Another option is mud-jacking, which is a process of filling cavities or voids beneath settling concrete. The Village does not currently own equipment to perform this mud-jacking operation.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

## ***Streets, Sidewalks, Alleys - Public Works***

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<b>Alley Improvement Program</b>	<b>FY 2020</b>	<b>\$300,000</b>	<b>CIF</b>
	<b>FY 2021</b>	<b>\$225,000</b>	<b>CIF</b>
	<b>FY 2022</b>	<b>\$225,000</b>	<b>CIF</b>
	<b>FY 2023</b>	<b>\$225,000</b>	<b>CIF</b>
	<b>FY 2024</b>	<b>\$225,000</b>	<b>CIF</b>

Critical

Recommended

Contingent on Funding

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### **Spending History**

FY 2019	\$911,600 (Gale Ave Alley and 3 others designed by consultant - Projected)
FY 2018	\$0
FY 2017	\$258,600 (Quick and William Alleys)
FY 2016	\$59,153 (Alleys incorporated into SIP)
FY 2015	\$508,901 (Green Alleys)

### **Project Description & Justification**

The purpose of this program is to improve the condition of Village alleys. To accomplish this objective, a minimum annual funding level of \$225,000 over the next five years is recommended. These funding levels are estimates based on the reconstruction of one alley per year. Additional funds have been budgeted in FY 2020 to accommodate the Thomas Street Alley, which is larger than most throughout the Village. The funding levels also reflect inflationary increases for construction as the actual projects have yet to be identified. In past years, the Village's Alley Improvement Projects utilized a Special Service Area process, which requires a 50/50 cost share with the adjoining property owners. These projects typically involved removal of the top of the asphalt surface (typically 1½ inches) and replacement with new asphalt; however, this method did not address stormwater issues.

Staff will continue to perform further analysis on various permeable surfaces and products to determine the most efficient way to complete these improvements. Many homeowners adjacent to existing impervious alleys experience stormwater drainage problems on a regular basis. To simply replace the impermeable surface with another impermeable surface will not alleviate these issues. Due to the inadequacy of the Village's existing sewer system, the addition of sewers to convey runoff away from the alleys is also not a feasible option in all cases. The most economical way to mitigate these issues and provide a new alley surface is through the use of permeable materials.

While Staff conducts the annual Street Rating Survey, the alleys are also rated. This rating is then used to determine the alley(s) that require improvement in a given year.

### **FY 2020 Recommended Projects**

1. Thomas Street Alley (7200 Block) – This "T" shaped alley is located between Bonnie Brae, Division Street, Harlem Avenue, and Thomas Street. A portion consists of severely deteriorated concrete pavement while the rest consists of asphalt. The pavement is in poor/fair condition; however, the alley also experiences significant drainage issues during heavy rain events. Improving this alley will necessitate a full reconstruction throughout. Similar to recent alley improvements, all permeable options will be explored in order to determine an appropriate treatment.

**FY 2020 Cost Summary for Alley Improvement Plan**

Reconstruction of the Thomas Street (7200 Block) Alley with permeable material will cost approximately \$300,000. Prior to design and bidding of this project, Staff will research additional types of permeable materials that may more efficiently solve the drainage issues at this location. Due to the high cost and large footprint of this alley, staff will continue to investigate ways to make the project more economical.

**Program Alternative**

Not performing any surface maintenance, particularly for alleys in deteriorating conditions, will result in total pavement failure and require reconstruction (of base and surface), which is significantly higher in cost compared to resurfacing.

Extensive pavement patching may be somewhat cost effective initially for alleys with better condition ratings, and may slow down the progression of potholes, but the pavement patching needs will be ongoing. It is also likely to promote the continued deterioration of the pavement’s base and will significantly increase eventual resurfacing costs.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None



## ***Streets, Sidewalks, Alleys - Public Works***

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<b>Parking Lot Improvements</b>	<b>FY 2020</b>	<b>\$75,000</b>	<b>CIF/Parking Reserve</b>
	<b>FY 2021</b>	<b>\$0</b>	<b>CIF</b>
	<b>FY 2022</b>	<b>\$85,000</b>	<b>CIF</b>
	<b>FY 2023</b>	<b>\$150,000</b>	<b>CIF</b>
	<b>FY 2024</b>	<b>\$0</b>	<b>CIF/Parking Reserve</b>

Critical

Recommended

Contingent on Funding

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### **Spending History**

FY 2019	\$	-	
FY 2018	\$	-	
FY 2017	\$	137,395	(West Thatcher Commuter Lot)
FY 2013	\$	3,920	(Lot A, sealcoating)
FY 2012	\$	2,998	(Lot B, sealcoating)

### **Program Description & Justification**

The purpose of this program is to improve the condition of the parking/driving surfaces of Village-owned parking lots. The Village owns and/or maintains six parking lots:

- A. Village Hall – 400 Park Avenue – **Resurfacing Scheduled for FY 2022**
- B. Public Works Garage – 45 Forest Avenue - **Reconstruction Scheduled for FY 2023**
- C. Southeast corner of Lake Street and Park Avenue
- D. West Commuter Lot – 400 block of Thatcher Avenue
- E. East Commuter Lot – 400 block of Thatcher Avenue - **Resurfacing Scheduled for FY 2020**
- F. Lot on south side of 7915-7919 North Avenue – contiguous to CVS parking lot

Several options are available for improving parking lots, including full reconstruction, resurfacing, asphalt patching, seal-coating, and crack sealing.

### **FY 2020 Recommended Projects**

The East Commuter Lot is located on the east side of Thatcher Avenue at the Park District Depot. The lot is used for commuter parking, overnight parking and 24-hr parking. The asphalt surface has severely deteriorated over time and resurfacing has become necessary. The pavement is currently in poor condition. The improvement will involve milling the surface of the asphalt and replacing it with new, hot-mix asphalt. Parking striping will be replaced upon completion of the paving operation.

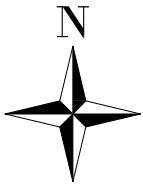
### **Program Alternative**

Not performing any surface maintenance, particularly for lots with deteriorating conditions, will result in total pavement failure and require reconstruction (of base and surface) which is significantly higher in cost compared to resurfacing. Extensive pavement patching, crack sealing, and seal-coating is a cost effective option and may slow down the progression of potholes, but the pavement patching needs will be ongoing and could allow for the continued deterioration of the pavement's base. This will significantly increase eventual resurfacing costs.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None





### Parking Lot Rating Survey Fall - 2018

- 3.5 - 4.5 = Poor
- 4.6 - 6.0 = Fair
- 6.1 - 7.5 = Good
- 7.6 - 9.0 = Excellent

## Streets, Sidewalks, Alleys - Public Works

### Street Improvement Program

	MFT	WS	IIBF
FY 2020	\$250,000	\$50,000	\$318,311
FY 2021	\$250,000	\$50,000	\$0
FY 2022	\$250,000	\$50,000	\$0
FY 2023	\$250,000	\$50,000	\$0
FY 2024	\$250,000	\$50,000	\$0

Critical

Recommended

Contingent on Funding

### Spending History

Year	MFT	WS	IIBF	Total
FY 2019	\$ 150,000	\$ 50,000	\$ 181,689	\$ 381,689
FY 2018	\$ 188,000	\$ 38,000	\$ -	\$ 226,000
FY 2017	\$ 150,000	\$ 52,898	\$ -	\$ 202,898
FY 2016	\$ 393,243	\$ 47,964	\$ -	\$ 441,207
FY 2015	\$ 169,558	\$ 20,460	\$ -	\$ 190,018

### Program Description & Justification

The purpose of this program is to improve the condition of local streets. The objective is to improve all streets with condition ratings of "Fair" or "Poor" to condition ratings of "Good" to "Excellent." This program does not include capital improvements on state routes.

In years past, Village Staff would visually inspect all local streets and rated them according to the condition of the pavement. In 2018, however, Staff hired a firm called Roadbotics to help analyze Village roadways for the sole purpose of pavement ratings. Roadbotics employees drive all Village streets and use cell-phone technology to analyze roadway conditions at 10-foot intervals. The analysis at each point is compiled with others along the same block and a rating is then established. Streets rated "Poor" or "Fair" are prioritized for one of the construction options (rehabilitation, resurfacing, or reconstruction) depending on the condition, location, and estimated traffic volumes. The timing in improving streets is critical. Waiting too long to address street repairs will result in further deterioration, at which time a more costly repair becomes necessary.

The following tables summarize the street rating systems:

Streets		
Surface Condition	Pavement Rating	Estimated Remaining Life*
Excellent	0-1.5	15 to 20 years
Good	1.6-2.5	10 to 15 years
Fair	2.6-3.5	6 to 10 years
Poor	3.6-4.5	2 to 5 years

\*Life estimate is based upon time frame needed for resurfacing assuming a regular maintenance program.

**FY 2020 Recommended Projects**

<u>Street</u>	<u>Pavement Rating</u>
1. Central Avenue, from Thatcher Avenue to Edgewood Place	Poor
2. Edgewood Place, from Lake Street to Central Avenue	Fair
3. Bonnie Brae Place, from Lake Street to Oak Avenue	Fair/Poor
4. Ashland Avenue, from Chicago Avenue to Augusta Street	Fair/Poor
5. Bonnie Brae Place, from Augusta Street to Division Street	Fair/Poor
6. Thomas Street, from Bonnie Brae Place to Harlem Avenue	Fair
7. Edgewood Place, from Lake Street to Thatcher Avenue	Fair
8. Forest Avenue, from Lake Street to Chicago Avenue	Fair
9. Park Avenue, from Lake Street to Chicago Avenue	Fair
10. Ashland Avenue, from Lake Street to Central Avenue	Fair

The projected cost to resurface these streets and make other associated improvements is \$618,311.

While the Capital Improvement Plan proposes funding for street improvements through FY 2024, these locations have not yet been determined. Staff recommends a minimum funding level of \$300,000 for each of those years, with specific locations selected based on annual street ratings surveys.

**Program Alternative**

Not performing any roadway maintenance, particularly for streets in “Poor” condition, will result in total pavement failure and require reconstruction (of base and surface), which is significantly higher in cost compared to resurfacing.

Extensive pavement patching may be somewhat cost effective initially for streets with a “Fair” condition rating, and may slow down the progression of potholes, but the pavement patching needs will be ongoing. This is likely to promote the continued deterioration of the street’s base, which will significantly increase eventual resurfacing costs.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

# Village of River Forest Street Rating Map



## Streets, Sidewalks, Alleys - Public Works

Street Maintenance Program	FY 2020	\$50,000	GF	\$50,000	MFT
	FY 2021	\$50,000	GF	\$50,000	MFT
	FY 2022	\$50,000	GF	\$50,000	MFT
	FY 2023	\$50,000	GF	\$50,000	MFT
	FY 2024	\$50,000	GF	\$50,000	MFT

Critical

Recommended

Contingent on Funding

### Spending History

	Crack Sealing	Preservation	Total
FY 2019	\$ 45,900	\$ 43,722	\$ 89,622
FY 2018	\$ 41,844	\$ 37,258	\$ 79,102
FY 2017	\$ 44,652	\$ 46,620	\$ 91,272
FY 2016	\$ 48,390	\$ 23,056	\$ 71,446
FY 2015	\$ 32,473	\$ 56,642	\$ 89,115

### Program Description & Justification

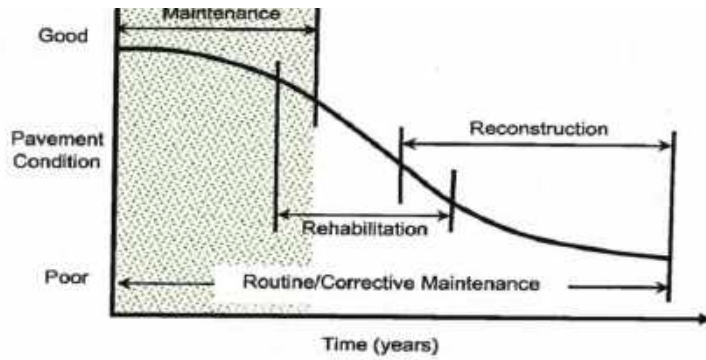
For the past few years, this project has been bid as a "pavement preservation" project. This type of treatment helps revive the existing pavement to preserve it in a better condition before it continues to deteriorate. This approach extends the overall life of the pavement and minimizes the overall cost of the pavement life cycle. While these projects have gone well and appear to be effective, there has been some concern regarding the specific product used over the past three years. As a result, Staff will be investigating alternative products for FY 2020 and will not be bidding the same product that has recently been used. Since FY 2018 this project has been jointly bid with the Villages of Elmwood Park and Riverside to optimize unit pricing.

In addition to pavement preservation, Village Staff believes the practice of Crack Sealing to be invaluable. Ideally, this work is completed when the pavement is still in good condition with minimal cracking. In years past, this portion of the project has been jointly bid with Oak Park. However, recently it has come to the attention of Village Staff that this approach is not generating the most efficient unit pricing. As a result, Village Staff will seek alternative measures to establish unit pricing and may publicly bid the project separate from Oak Park in FY 2020.

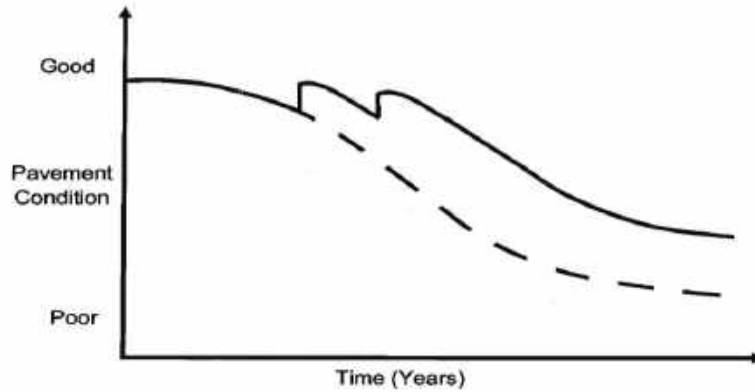
Village Staff has identified the streets that are ideal candidates for preservation and crack sealing during the annual Street Rating Survey. These streets are typically in good condition, with the idea being to maintain this condition for an extended period of time. Streets of all ratings that have cracks are eligible for crack sealing.

The following figure demonstrates the relationship between pavement condition and typical types of pavement preservation and/or street improvements:





The following figure demonstrates how preventative maintenance can extend pavement performance:



**FY 2020 Recommended Projects**

With the Village having recently resurfaced a significant amount of streets, Staff recommends maintaining budget amounts at \$50,000 for crack sealing and \$50,000 for pavement preservation. This will enable Staff to maintain these recent pavements in good condition before they start deteriorating.

Pavement Preservation

The following streets have been identified for rejuvenation:

<u>Street</u>	<u>Condition Rating</u>	<u>Proposed Cost</u>
Oak Avenue, from Thatcher Avenue to Harlem Avenue	Good/Fair	\$50,000

Crack Sealing

In addition to the streets to be treated during the pavement preservation portion of this work, additional streets will be identified for crack sealing during late winter/early spring of 2019.

**Program Alternative**

The alternative is a reactive maintenance program that will accelerate deterioration of Village streets. These maintenance programs, along with pavement patching, will prolong the useful life of Village streets. By not pursuing these maintenance programs, the following infrastructure improvements will be necessary at more frequent intervals:

- Resurfacing: This is a more costly improvement that requires the removal and replacement of the existing worn pavement and minimal base improvement. This type of construction is normally completed over a several week period while rejuvenation can be completed in a few hours.
- Reconstruction: This is a significantly more costly improvement that is necessary in situations of surface pavement failure along with extensive base failure.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

**Streets, Sidewalks, Alleys - Public Works**

**Traffic Signals**

**FY 2020**

**\$133,000**

**CIF**

Critical

Recommended

Contingent on Funding

**Spending History**

FY 2019 \$13,065.78 (Traffic Signal Engineering Design)

FY 2018 \$4,893.36 (Traffic Evaluation of Signaled Intersections)

**Project Description & Justification**

A Traffic Signal Evaluation was performed in FY 2018 to determine if the left turn arrow indicators were needed at the traffic signals in the Village where they currently are not in place. Modifications were recommended at the intersections of Thatcher Avenue with Chicago Avenue and Lake Street. The accommodation of left-turn arrows at both intersections was outlined by the Traffic Signal Evaluation completed by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) in July 2017. Both of these intersections are shared jurisdiction with IDOT, however, it is not anticipated that IDOT would contribute to the cost of these signal modifications.

Staff proposes the following projects to upgrade this portion of the traffic signal system within the Village:

**FY 2020 Recommended Projects**

**Intersection Design Study:** This consists of using traffic data and base maps and will include intersection capacity calculations, existing and projected peak hour volumes, existing and projected geometrics, typical striping, right-of-way and other significant features.

**Traffic Signal Design:** Base maps and traffic signal plans will be prepared using the information from the intersection design study (completed in 2018).

**Lake Street at Thatcher Avenue Construction:** Traffic signal modifications, add left turn arrows for N/S (includes two new mast arms w/ foundations), remove existing post and foundation in NE and SW corners, pavement marking upgrades, traffic control & protection.

Intersection Design Study	\$	3,500
Lake Street at Thatcher Avenue Construction	\$	66,000
<b>Total</b>	<b>\$</b>	<b>69,500</b>

**Chicago at Thatcher Avenue Construction:** Traffic signal modifications, add pedestrian crossings on north and west legs, add left turn arrows for East and West. Sidewalk/ADA and pavement marking upgrades, new ramps in NW corner, revise crosswalks to high-visibility markings, traffic control & protection.

Intersection Design Study	\$	3,500
Chicago Avenue at Thatcher Avenue Construction	\$	60,000



Total \$ 63,500

**Project Alternative**

The alternative to the improvements to these areas of the traffic signal system within the Village is to not act upon the recommendation of the study performed in July 2017 and the engineering design performed in 2018. Keeping these intersections in the same traffic signal configuration would maintain higher levels of congestion during peak travel times. These projects can be deferred if deemed too costly to be implemented in the immediate future.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Streets, Sidewalks, Alleys - Public Works**

**Safe Routes to School**

**FY 2020**

**\$187,500**

**CIF**

Critical

Recommended

Contingent on Funding

**Spending History**

FY 2019           \$       29,000 (Design)

**Project Description & Justification**

The purpose of this project is to implement the proposed improvements recommended as part of the Safe Routes to School (SRTS) Plan that was prepared in 2018. The purpose of the plan was to establish routes to Village schools that would optimize pedestrian safety as well as the use of existing resources (crossing guards). As part of this plan, many traffic control and pavement marking improvements are recommended.

**FY 2020 Recommended Project**

This project would involve the installation of stop signs, crosswalk signs, and pavement markings in accordance with the SRTS Plan. Many of the routes that were established in this plan currently travel through uncontrolled intersections. In an effort to make these routes safer for pedestrians, some form of traffic control is proposed at these intersections. This largely involves the installation of stop signs at many new locations and, in some cases, the reversal of existing two-way stop intersections. At two locations where the addition of stop signs is not necessarily warranted (Thatcher Avenue at Oak Avenue and Augusta Street at Bonnie Brae Place) it is recommended that enhanced crosswalk signage be installed instead.

In addition to the installation of stop and crosswalk signs at various locations, many of the crosswalk markings along these routes have been designated for improvement. This portion of the work would involve the installation of a standard "ladder-style" crosswalk with thermoplastic pavement marking material.

**Project Alternative**

The alternative to this project is the status quo. While more efficient routes to school are established in the SRTS Plan, those that travel through uncontrolled intersections would remain as such. The standardization of crosswalk markings through these routes would also not be completed, which may impact the degree to which the established routes are utilized.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

***Water and Sewer Improvements – Five Year Capital Improvement Program***

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This section of the Capital Improvement Plan identifies funding for sewer and water improvements, which are scheduled to continue through FY 2024. The Village’s sewer and water system is comprised of the following:

Type of Sewer	Number of Miles
Combined Sanitary Sewer	33.13
Storm Sewer	3.37
Water Main	40

Improvements planned for FY 2020 include:

Improvement	Cost	Funding Source	Nature of Project
Sewer Lining	140,000	WS	Critical
Sewer Point Repairs	35,000	WS	Critical
Water Distribution System – Pumping Station	15,000	WS	Critical
Water Tower Improvements	261,000	WS	Critical
Water Meter Replacement Program	22,000	WS	Critical
Water Main Replacement	300,000	WS	Critical
Hydrant Replacement	24,000	WS	Recommended
Deployable Leak Sensors	107,380	WS	Critical
<b>Total</b>	<b>904,380</b>		

**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.

Critical projects are highlighted in yellow.

**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.

**Village of River Forest, Illinois**  
**Five Year Capital Improvement Program**  
**Water and Sewer Improvements**  
**Fiscal Year 2020 Budget**

This Project is:	Fiscal Year					Five Year Total	Funding Source	
	2020	2021	2022	2023	2024			
<b>Sewer System</b>								
Sewer Lining	Critical	140,000	140,000	140,000	140,000	140,000	700,000	WS
Sewer Point Repairs	Critical	35,000	35,000	35,000	35,000	35,000	175,000	WS
<b>Pumping Station</b>								
Water Distribution Improvements	Critical	15,000	40,000	100,000	-	-	155,000	WS
<b>Water Distribution Improvements</b>								
Water Tower Improvements	Critical	261,000	-	-	-	-	261,000	WS
0.5 MG Underground Reservoir Improvements	Critical	-	18,000	-	-	-	18,000	WS
Water Meter Replacements	Critical	22,000	7,500	17,000	11,000	17,000	74,500	WS
Water Main Replacement	Critical	300,000	400,000	400,000	400,000	400,000	1,900,000	WS
Hydrant Replacement	Recommended	24,000	25,000	25,000	26,000	26,000	126,000	WS
Deployable Leak Sensors	Critical	107,380	-	-	-	-	107,380	WS
<b>Total</b>		<b>904,380</b>	<b>665,500</b>	<b>717,000</b>	<b>612,000</b>	<b>618,000</b>	<b>3,516,880</b>	

Proposed Funding Source	Fiscal Year					Five Year Total
	2020	2021	2022	2023	2024	
Water and Sewer Fund (WS)	904,380	665,500	717,000	612,000	618,000	3,516,880
<b>Totals</b>	<b>904,380</b>	<b>665,500</b>	<b>717,000</b>	<b>612,000</b>	<b>618,000</b>	<b>3,516,880</b>

## ***Water and Sewer Improvements - Public Works***

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<b>Sewer Lining Program</b>	<b>FY 2020</b>	<b>\$140,000</b>	<b>WS</b>
Public Sewers	<b>FY 2021</b>	<b>\$140,000</b>	<b>WS</b>
	<b>FY 2022</b>	<b>\$140,000</b>	<b>WS</b>
	<b>FY 2023</b>	<b>\$140,000</b>	<b>WS</b>
	<b>FY 2024</b>	<b>\$140,000</b>	<b>WS</b>

Critical

Recommended

Contingent on Funding

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### **Spending History**

FY 2019	\$	150,545	(including MH lining)
FY 2018	\$	125,767	(including MH lining)
FY 2017	\$	122,230	(including MH lining)
FY 2016	\$	69,956	
FY 2015	\$	122,251	

### **Program Description & Justification**

The purpose of this program is to improve the Village's sewer system and prevent costly repairs associated with failing sewer mains (collapsed, cracked, etc.). The objective is to evaluate the conditions of sewer mains (via televising), identify those in the worst condition, and perform lining of as many sections as possible. In some situations, sewer mains may have failed beyond the ability to line and a point repair (or replacement of a section) may be necessary. The Village's sewer system is a critically important infrastructure system.

The Water and Sewer Rate Study completed by Baxter & Woodman in FY 2012 recommends an annual funding level of \$140,000 for this program. This budget allows both the relining of damaged sewer main as well as the start of a systematic approach to relining all sewers throughout the village, regardless of their condition.

The process of sewer lining consists of inserting a sleeve made of flexible material in the existing pipe. The sleeve is then filled with steam or water heated to a high temperature for curing and hardening. This process provides the existing failing pipes with the structural support needed to continue their service and avoid a costly complete replacement.

In addition to the typical sewer lining completed each year, Village Staff has completed some lining of manholes in FY 2019. Potential candidates were researched throughout FY 2019 and lined in the summer. Five manholes were lined at a total cost of approximately \$11,000. This work allows the manholes to be sealed and stabilized without requiring any excavation. The intent of this work is to prevent sinkholes and other pavement failures from occurring due to the decay of the interior walls and base of existing manholes.

Since the Village’s first sewer lining project, nearly 43,150 lineal feet of sewers have been lined. This represents approximately 25% of the total sewer mains owned/maintained by the Village (approximately 171,000 lineal feet). All sewers that were rated either poor or fair (condition ratings “D” and “C”) during the sewer televising program from the late 1990’s have been lined.

In 2011, the Public Works Department developed an in-house sewer televising program. Public Works Staff reviews the video recordings and the sections of failing sewer mains are identified and prioritized. This in-house sewer televising program has identified sewer mains in poor condition that will be lined in the coming years. Extreme weather conditions and the on-going root growth of trees have accelerated the rate of deterioration of the Village’s combined sewers.

The following table identifies the sewer condition ratings, description of condition, and the recommended action:

<b>Condition Rating</b>	<b>Condition Description</b>	<b>Recommended Action</b>
A	Random cracking/Some roots	Continue monitoring
B	Medium cracking/Medium root problem	Line in one to three years
C	Heavy cracking/Heavy root problem	Line immediately
D	Structural damage/Fully blocked by roots	Requires replacement

**FY 2020 Recommended Project**

Specific project locations will be determined during the winter months. Public Works Staff will review all sewer televising completed throughout the year by the Operations Department. Each sewer line televised will be rated with the most severely deteriorated sewers being selected for lining. Other sections may also be lined, based on the need for a point repair.

**Program Alternative**

Once the structural integrity of the pipe is severely affected, beyond the ability to line, the sole option is to perform an open-trench point repair that will require heavy street construction, temporary interruption of traffic flow, and costs associated with restoring the street’s driving surface. The preferred and more cost effective option to improving sewer mains is sewer lining.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

## ***Water and Sewer Improvements - Public Works***

<b>Sewer Point Repairs</b>	<b>FY 2020</b>	<b>\$35,000</b>	<b>WS</b>
Public Sewers	<b>FY 2021</b>	<b>\$35,000</b>	<b>WS</b>
	<b>FY 2022</b>	<b>\$35,000</b>	<b>WS</b>
	<b>FY 2023</b>	<b>\$35,000</b>	<b>WS</b>
	<b>FY 2024</b>	<b>\$35,000</b>	<b>WS</b>

Critical

Recommended

Contingent on Funding

### **Spending History**

FY 2019	\$	25,996
FY 2018	\$	39,600
FY 2017	\$	30,770
FY 2016	\$	28,875
FY 2015	\$	32,800

### **Program Description & Justification**

The purpose of this program is to improve the Village's sewer system by replacing failing (collapsed, cracked, etc.) sections of sewer main (also referred to as point repairs). Staff's objective is to evaluate the conditions of sewer mains (via televising), identify those in the worst condition, and perform relining of as many sections as possible. In some situations, sewer mains may have failed beyond the ability to reline and a point repair may be necessary. Most point repairs are made on an emergency basis and can be costly. The Water and Sewer Rate Study that was completed by Baxter & Woodman in FY 2012 recommends an annual funding level of \$15,000 for this program.

In 2011, Public Works began an ongoing in-house sewer televising program. Village Staff reviews the video recordings to identify sections of failing sewer mains for repair.

### **Program Alternative**

Once the structural integrity of the pipe is severely affected, beyond the ability to reline, the sole option is to perform an open-trench point repair.

### **Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

**Water and Sewer Improvements - Public Works**

<b>Water Distribution System - Pumping Station</b>	<b>FY 2020</b>	<b>\$15,000</b>	<b>WS</b>
	<b>FY 2021</b>	<b>\$40,000</b>	<b>WS</b>
	<b>FY 2022</b>	<b>\$100,000</b>	<b>WS</b>
	<b>FY 2023</b>	<b>\$0</b>	<b>WS</b>
	<b>FY 2024</b>	<b>\$0</b>	<b>WS</b>

Critical

Recommended

Contingent on Funding

**Spending History**

FY 2018	\$	19,000
FY 2017	\$	15,600
FY 2016	\$	15,832
FY 2015	\$	49,100
FY 2014	\$	-

**Project Description & Justification**

The Village purchases all of its potable water (for both general consumption and fire suppression) from the City of Chicago. The water received from Chicago is treated before arriving to the Village’s water distribution system where it is stored and treated (once again) before entering the water distribution system for consumption. The Pumping Station is where the following components of the Village’s water distribution system are located:

- SCADA (Supervisory Control and Data Acquisition) system: computer system that monitors and controls various components and equipment
- Three Pumps
  - Pump #1: 100 horsepower; 1,540 gallons per minute
  - Pump #2: 150 horsepower; 2,350 gallons per minute
  - Pump #3: 125 horsepower; 1,750 gallons per minute
- 40 valves
- Four meters: two for incoming water from the City of Chicago (located at an off-site location) and two for incoming/outgoing water at the Pumping Station.
- Water treatment system (sodium hypochlorite)
- Two underground storage reservoirs
  - 2.0 million gallon storage capacity
  - 0.5 million gallon storage capacity
- Emergency generator: backup power source in the event of a power outage (see CERF).

	<b>Repair/Improvement</b>	<b>Estimated Cost</b>	<b>Year</b>
1.	Replace two water valves in basement of Pumping Station	\$12,000	FY 2020
2.	Replace foot valve in .5 MG reservoir (valve supplied by Village)	\$3,000	FY 2020



3. Install Reservoir turbine generator as suggested in Baxter and Woodman efficiency study performed 11/2010	\$40,000	FY 2021
4. Replace pump #1 and associated piping as suggested in Baxter and Woodman efficiency study performed 11/2010	\$100,000	FY 2022
<b>Total</b>	<b>\$155,000</b>	

**Project Description & Justification**

During the piping upgrade project (efficiency improvements) that were completed in FY 2014, it was determined that four water control valves in the basement of the Pumping Station were not operating properly. These valves are likely original to the facility. Staff recommended replacing four valves in FY 2015 and initiated a program to replace all 27 valves in the facility. Proper function of these valves is critical since the valves give Staff the ability to change or re-route suction and discharge piping in case of emergencies or while maintenance is being performed on Village pumps and reservoirs. The last two valves to be replaced are listed below. Future projects that may require funding are the replacement of valves that are submerged in the .5 and 2MG reservoirs. These valves are original to the facility (circa 1920's) and are critical if reservoir maintenance has to be performed. Both reservoirs were inspected by Dixon Engineering in the fall of 2018 and the results of those inspections were not available at the time this document was finalized.

	<u>Description</u>	<u>Problem</u>
1. Valve #17	8" valve to high pressure relief valve	Difficult to operate
2. Valve #3	12" Bypass valve to 2 MG reservoir	Difficult to operate
3. 0.5 MG reservoir foot valve	Used to draw water from .5 MG reservoir when second reservoir is out of service.	Stuck in the open position

**Project Alternative**

There are no alternatives to maintaining the Village's water distribution system as it is the system that provides potable water to the entire community. Deferring these projects would result in emergency repairs that could increase project costs (compared to soliciting bids/proposals).

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

## Water and Sewer Improvements - Public Works

### Water Tower Improvements

Water & Sewer



FY 2020	\$261,000	WS
FY 2021	\$0	WS
FY 2022	\$0	WS
FY 2023	\$0	WS
FY 2024	\$0	WS

Critical

Recommended

Contingent on Funding

### Spending History

FY 2019	\$0
FY 2018	\$0
FY 2017	\$0
FY 2016	\$0

### Project Description & Justification

On August 14, 2018 Dixon Engineering Inc. performed a maintenance inspection on the 500,000 gallon spheroid elevated water storage tank owned by the Village of River Forest. Purposes of the inspection were to evaluate the interior and exterior coating's performance and life expectancy, assess the condition of metal surfaces and appurtenances, review safety and health aspects, and make budgetary recommendations for continued maintenance of the tank. Inspections are recommended every five years.

<u>Repair/Improvement</u>	<u>Estimated Cost</u>
1. High pressure water clean (5,000-10,000 psi), spot power tool clean, spot prime, and overcoat the exterior with a polyurethane system.	\$80,000
2. Spot abrasive blast clean to a commercial (SSPC-SP6) condition the topsides of the platforms and the other areas of failed coating in the dry interior. Repaint with a spot epoxy coating system to all prepared surfaces.	\$15,000
3. Abrasive blast clean the entire wet interior to a near-white metal (SSPC-SP10) condition and repaint with a three coat epoxy system with a zinc primer.	\$90,000
4. After coating the wet interior, seam seal the roof lap joints with urethane caulk.	\$2,000
5. Abrasive blast clean the pit piping to a commercial (SSPC-SP6) condition and repaint with an epoxy system.	\$4,000

6. Coat the foundation to help prevent further deterioration. The cost would be incidental to exterior coating.	\$0
7. Install a handrail and a painter's rigging rail on the roof.	\$15,000
8. Install rigging couplings on the roof at the new painter's rigging rail for temporary fall prevention of workers in the wet interior. The cost would be incidental to the next coating project.	\$0
9. Request the antenna owners to return and correct deficiencies by properly sealing the cable penetration pipes.	***
10. Install a ladder extension at the condensate platform and a handhold at the roof hatches to assist entering and exiting.	\$1,000
11. Install a wet interior ladder equipped with a fall prevention device.	\$10,000
12. Install a fall prevention device on the basebell ladder.	\$1,000
13. Remove the glandular expansion joint and replace with a bellows type joint.	\$6,000
14. Install aluminum jacketing over the fill/draw pipe.	\$2,000
15. Install a deflector plate over the top of the fill/draw pipe.	\$1,000
	SubTotal \$227,000
	Engineering and Contingencies \$34,000
	<b>Total \$261,000</b>

**Notes:** Safety improvements (other than fall prevention devices) are optional and can be delayed. The best price for safety improvements would be obtained by including them with exterior painting.

The following critical and recommended facility improvements should be completed in FY 2020:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
1. Items 1 through 15 listed above	\$261,000	FY 2020
Total	\$261,000	

The following prioritized facility improvement is recommended in the **next two to five years**:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
1. None.		
Total	\$0	

**Project Alternative**

There are essentially no alternatives to these improvements and maintenance projects as the water tower is a critically important part of the Village's water distribution system. Deferring these projects would result in emergency repairs that could increase project costs (compared to soliciting bids/proposals).

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None

## Water and Sewer Improvements - Public Works

### .5 & 2 MG Underground Reservoir Improvements

Water & Sewer



FY 2020	\$0	WS
FY 2021	\$18,000	WS
FY 2022	\$0	WS
FY 2023	\$0	WS
FY 2024	\$0	WS

Critical

Recommended

Contingent on Funding

#### Spending History

FY 2019	\$0
FY 2018	\$0
FY 2017	\$0
FY 2016	\$0

#### Project Description & Justification

On August 14, 2018 Dixon Engineering Inc. performed a maintenance inspection on the 500,000 and 2,000,000 gallon underground storage reservoirs owned by the Village of River Forest. Purposes of the inspection were to evaluate the interior piping, surfaces and appurtenances, review safety and health aspects, and make budgetary recommendations for continued maintenance of the reservoir. Inspections are recommended every five years.

The following critical and recommended facility improvement should be completed in FY 2020:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
1. None	\$0	FY 2020
Total	\$0	

The following prioritized facility improvement is recommended in the **next two to five years**:

<u>Repair/Improvement</u>	<u>Estimated Cost</u>	<u>Year</u>
1. Abrasive blast clean the wet interior piping and steel appurtenances on both reservoirs to a near-white metal (SSPC-SP10) condition and repaint with a three coat epoxy polyamide system. The estimated cost is \$8,000. Best pricing can be obtained if work is performed with another tank painting project.	\$18,000	FY 2021

Total

\$18,000

**Project Alternative**

There are essentially no alternatives to these improvements and maintenance projects as the water reservoir is a critically important part of the Village's water distribution system. Deferring these projects would result in emergency repairs that could increase project costs (compared to soliciting bids/proposals).

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

## Water and Sewer Improvements - Public Works

Water Meter Replacement Program	FY 2020	\$22,000	WS
	FY 2021	\$7,500	WS
	FY 2022	\$17,000	WS
	FY 2023	\$11,000	WS
	FY 2024	\$17,000	WS

Critical

Recommended

Contingent on Funding

### Spending History

FY 2019	\$16,000	continuation of program to replace all meters over 20 years of age
FY 2018	\$17,500	continuation of program to replace all meters over 20 years of age
FY 2017	\$16,000	continuation of program to replace all meters over 20 years of age
FY 2016	\$24,000	continuation of program to replace all meters over 20 years of age
FY 2015	\$24,092	continuation of program to replace all meters over 20 years of age
FY 2014	\$24,092	continuation of program to replace all meters over 20 years of age

### Program Description & Justification

The purpose of this program is to improve the metering accuracy of Village-owned commercial and residential water meters. Water Division employees tested meters in the 15 to 20 year age category and found that some did not meet AWWA (American Water Works Association) standards for meter accuracy. Although not a standard, studies recommend that residential water meters be replaced every 15 to 20 years. Water meters can be damaged and deteriorate with age, thus producing inaccurate readings. Inaccurate readings will give misleading information regarding water usage, make leak detection difficult, and result in lost revenue for the system. Funds requested over the spreadsheet total below are for accessories associated with meter replacements (nuts, bolts, gaskets, seals and sealing wire, flanges and meter couplings).

Qty.	Size	Each	Cost
5	0.625	\$ 121	\$ 605
5	0.75	\$ 140	\$ 700
5	1	\$ 170	\$ 850
1	1.5	\$ 479	\$ 479
2	2	\$ 675	\$ 1,350
1	6	\$ 5,300	\$ 5,300
2	12	\$ 6,000	\$ 12,000
21		<b>Total</b>	\$ 21,284

Meter at Dominican College

Master meters in pumping station

### Program Alternative

As the Village's water metering system is critically important as a source of revenue, it is important to plan/budget for the replacement of water meters that have reached or exceeded the end of their useful service life. The primary alternative to this program is to not budget/plan for water meter replacements and respond to metering failures and inaccuracies as they occur.

An alternative to the Village incurring the costs of the new meters is requiring that the building/property owners incur a portion or all of the new meter costs.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
None	None



## ***Water and Sewer Improvements - Public Works***

<b>Water Main Replacement Program</b>	<b>FY 2020</b>	<b>\$300,000</b>	<b>WS</b>
	<b>FY 2021</b>	<b>\$400,000</b>	<b>WS</b>
	<b>FY 2022</b>	<b>\$400,000</b>	<b>WS</b>
	<b>FY 2023</b>	<b>\$400,000</b>	<b>WS</b>
	<b>FY 2024</b>	<b>\$400,000</b>	<b>WS</b>

Critical

Recommended

Contingent on Funding

### **Spending History**

FY 2019	\$	295,112
FY 2018	\$	396,000
FY 2017	\$	441,613
FY 2016	\$	17,600
FY 2015	\$	491,175

### **Program Description & Justification**

The purpose of this program is to improve the condition of the Village's water mains by replacing aging and deteriorating water system infrastructure. This is accomplished by replacing deteriorating segments of water mains before they break which will necessitate costly repairs and the experience of significant water loss with associated water consumption costs. The Village's water distribution system is a critically important infrastructure system.

The Village has approximately 40 miles of water main. The majority of the water mains are between 50 and 80 years old. On average, there are seven water main breaks per year. It has been proven that as water mains become old and reach the end of their useful lives, performance deteriorates and results in high maintenance costs, loss of hydraulic capacity and water quality, and a significant increase in customer complaints. The AWWA recommends replacing one-percent of the distribution system every year.

Each year, Village Staff conducts an analysis of failing or problematic sections of water main for the purpose of determining the need to replace specific water mains based on history and number of breaks, outdated size, or any other defective condition. This analysis is then reviewed along with all identified needs for improvement based on the water system modeling performed by Strand Associates Engineering in 2018. A typical water main project involves an open trench installation of the new water main pipe and the transfer of all fire hydrants and private water services to the new main before the old main is abandoned. Water main projects are typically followed by resurfacing the roadway.

### **FY 2020 Recommended Projects**

<u>Location</u>	<u>Pipe Length (FT)</u>
Keystone and Franklin (Lake/Central to Hawthorne)	750

The proposed water main replacement project will include the replacement of the existing four inch dead-end water main on Keystone Avenue between Lake Street and a point just north of Central Avenue. The new eight-inch water main will connect the Lake Street main to the Hawthorne Avenue main. The existing six-inch water main on Franklin Avenue between Central Avenue and Hawthorne Avenue will also be replaced with a twelve-inch water main. These improvements will remove a dead-end from the system and substantially increase the flow from north to south through the Village. The selection of this project area is largely based on the identified needs within the recently completed water system

modeling report. Due to a low number of water services within these two locations and generally good pavement conditions, Horizontal Directional Drilling will be explored as an installation method.

The cost estimate for this project is as follows:

- \$250,000 for construction (design and permitting to be performed in-house)
- \$25,000 for construction engineering services

An additional \$25,000 is also being budgeted for miscellaneous lead service replacements throughout the Village based on leak repairs, homeowner partial replacements, etc.

**Future Water Main Projects**

Staff reviews the modeling report and evaluates the Village’s water distribution system and trends in water main breaks on an annual basis to identify and prioritize future projects. Staff has identified the following water system improvement project(s) for possible future fiscal years:

- Install eight-inch water mains between Thatcher/Keystone/Forest on Iowa/Augusta/Thomas. Project details have not yet been determined, however, modeling indicates a need for additional flow in this area.

Estimated project cost: \$550,000

**Program Alternative**

As the Village’s water distribution system is a critically important infrastructure system, it is important to plan/budget for the replacement of water mains that have reached or exceeded the end of their useful service life. The primary alternative to this program is to not budget/plan for water main replacement projects and respond to water main breaks as they occur. These repairs, which are typically conducted on an emergency basis, involve an open-trench that will require heavy street construction, temporary interruption of traffic flow, and costs associated with restoring the street’s driving surface.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

**Water and Sewer Improvements - Public Works**

Hydrant Replacement Program	FY 2020	\$24,000	WS
	FY 2021	\$25,000	WS
	FY 2022	\$25,000	WS
	FY 2023	\$26,000	WS
	FY 2024	\$26,000	WS

Critical

Recommended

Contingent on Funding

**Spending History**

FY 2019	\$	-
FY 2018	\$	8,758
FY 2017	\$	22,000
FY 2016	\$	23,606
FY 2015	\$	7,400
FY 2014	\$	-

**Program Description & Justification**

The Village’s fire hydrant system is a critically important infrastructure system. The Village owns and operates approximately 446 fire hydrants. The purpose of this program is to maintain all of the Village’s fire hydrants in excellent operating condition. The Village’s Fire Department conducts two hydrant flushing programs each year. During the Village-wide hydrant flushing events, Fire Department personnel identify hydrants in need of repair and provide a list of those hydrants to the Public Works Department to coordinate and/or make the necessary repairs. Hydrants that are not in operating condition are prioritized for immediate repair.

**2020 Recommended Project**

The Public Works and Fire Departments have identified hydrants as operational, but “too low” (which is defined as less than 18 inches from the ground to port), which prevents the hydrant wrench from rotating freely around the main/steamer port and slows the time required connect the fire hose to the hydrant. Hydrants that have a low flow rate due to a small supply line are also identified. Each year Village Staff attempts to replace three of these hydrants to try to eliminate any that do not operate efficiently or provide high flow rates.

**Program Alternative**

The Village’s fire hydrant system is a critically important infrastructure and it is important to budget for the replacement of hydrants that have reached or exceeded the end of their useful service lives. The primary alternative to this program is to not budget/plan for hydrant replacement and make more costly emergency repairs.

**Project Impact**

Annual \$ Impact on Operating Budget	Description of Operating Budget Impact
None	None

## **Water and Sewer Improvements - Public Works**

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<b>Deployable Leak Sensors</b>	<b>FY 2020</b>	<b>\$107,380</b>	<b>WS</b>
Water & Sewer	<b>FY 2021</b>	<b>\$0</b>	<b>WS</b>
	<b>FY 2022</b>	<b>\$0</b>	<b>WS</b>
	<b>FY 2023</b>	<b>\$0</b>	<b>WS</b>
	<b>FY 2024</b>	<b>\$0</b>	<b>WS</b>

Critical

Recommended

Contingent on Funding

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### **Spending History**

FY 2019                   \$           -

### **Program Description & Justification**

The FY 2019 Water and Sewer Fund budget included \$9,000 for the purchase of deployable leak sensors for the Village water system. These sensors attach to valves on the water system and “listen” for leaks during the middle of the night while it is quiet. That information is sent through a cellular network to a secure website which can be viewed by Public Works staff. These sensors are also able to communicate with each other if a leak is occurring and correlate the likely location of the leak on the system as well. In May, 2018 the Village Board directed the Public Works Department to proceed with the purchase of additional sensors in an attempt to cover the entire water system. This would amount to 100 sensors at a cost of \$107,380 based on an estimate for the types of devices recently tested. The plan is to have these purchased in FY 2019, however the purchase may be delayed until FY 2020 due to the availability of new products or technology.

Over the past several months Water division staff have been provided with ten demonstrations. PermaNet sensors, manufactured by Fluid Conservation Systems, have been deployed to two separate sections of the water system to search for any leaks that were not noticed because no water has been visible from the surface. The sensors found a leak in the system within the first week and Public Works staff was also able to locate the leak on a water service to a fire hydrant and repair it to prevent any further loss of water. Since the issue of water loss is important due to lost revenue from water leaking out of the system as well as water standard mandates from the Illinois Department of Natural Resources (IDNR), a number of methods are taken to prevent loss as much as possible.

It is important to note that there will always be a certain amount of water lost in an older water system. Although some water loss is unavoidable it is best to take a proactive approach to this issue and the use of deployable leak sensors is the latest tool in that process. Sensors are able to communicate with each other from a distance up to a 500 feet away; therefore it is estimated that 100 sensors would be needed to cover the entire Village system.

**Program Alternative**

The alternative to this project would be to not purchase these leak sensors and continue to only listen for leaks in the system through contractual leak surveys performed once per year.

**Project Impact**

<b>Annual \$ Impact on Operating Budget</b>	<b>Description of Operating Budget Impact</b>
\$2,000 for data hosting (web portal)	Technical communication