

A HERITAGE OF GOOD LIVING

INFRASTRUCTURE STUDY GROUP

CITY OF LATHRUP VILLAGE

27400 Southfield Road, Lathrup Village, Michigan 48076

CAPITAL IMPROVEMENT RECOMMENDATION TO CITY COUNCIL

MONDAY, DECEMBER 21, 2020

Infrastructure Committee 2021 Capital Improvement Recommendation:

Goal: To propose a solution to the City's various water, sewer and lead related infrastructure issues.

Background: Lathrup Village has a variety of infrastructure needs that have arisen due to aging systems, long-deferred maintenance and State mandated requirements. The City has reached the point where these systems need to be addressed promptly to improve safety, ensure continued flow and availability of the water supply, ensure that waste is properly and efficiently disposed, and to ultimately reduce expenses to taxpayers. In addition, improvements must be made to satisfy unfunded State laws and mandates. Infrastructure needs fall into the following categories:

- water service distribution system material inventory (DSMI)
- lead and galvanized water service abatement
- water loss and water meter accuracy
- sewer repairs
- water main replacements
- fire hydrant repair and replacement
- gate valve replacement
- sanitary sewer retention tank maintenance
- sidewalk and ditch program financing

This recommendation will address each of these areas individually and then discuss financing and repayment recommendations.

Infrastructure Recommendation:

A. DSMI and Lead\Galvanized Water Service Abatement

In response to the Flint water crisis, the State of Michigan adopted a variety of new regulations related to lead in the water system. As a result of these regulations, by 2025, the City is required to identify the material of all water service pipes leading into all homes and businesses in the City. Any service line that consists of lead or galvanized steel is required to be replaced with the cost born completely by the City. Starting in 2021, the City must replace a minimum of 5% of its lead/galvanized service lines each year for the next 20 years.

Service line material verification is required at both the water stop box (usually by the sidewalk in front of each home) and where the water service physically enters the home/business. The City has already launched a self-identification campaign for residents to identify the material inside their homes and businesses. Identifying the material at the stop box is a significantly more intensive process. It requires digging five feet down on both sides of the stop box and visually inspecting the pipes leading to and going from the stop box for 18 inches on each side. The estimated cost for each stop box identification is \$650. This estimate includes repairing the sidewalk when it is damaged during the identification process. In addition, most of the stop boxes in the City are over 75 years old and do not function well or at all. Because most of the work to replace the stop box will already be completed in the identification process, it is the opportune time to replace these old and failing devices. The additional cost to replace each stop box is \$75, bringing the total cost to \$725 per water service line. We are estimating that there will be 1,600 services to be verified and are anticipating conducting 500 verifications per year starting in 2021. Based on these numbers, the estimate to complete this project is \$1.16M.

The City will also be applying for grant money to help defray some of these costs.

In addition, the City will be required to replace the lead and galvanized lines that are identified via the aforementioned methods. The cost of this abatement is estimated to run about \$4,500 to \$5,000 per line. While there is no way to accurately estimate how many lead and galvanized lines there are in the City, it does initially appear to be relatively low. The Committee is recommending that approximately \$500,000 be estimated for this abatement.

B. Water Loss and Water Meters

Over the last five to ten years, the City has had larger than expected water losses. Lathrup Village purchases its water from Southeast Oakland County Water Authority (SOCWA), who meters the volume that the entire City uses. The City, in turn, bills residents and businesses based upon their individual metered usage. The discrepancy between these two meter readings has grown to 40%. This means the City is footing the bill for 40% of the City's water usage without reimbursement totaling a loss of over a quarter million dollars each year. While water loss is expected due to a variety of conditions (water main breaks, fire hydrant flushing, etc.), the rate should typically be closer to 20%. SOCWA has verified its meters are working correctly and the City has not found any significant areas of continued water loss outside of normal loss channels.

The primary area of concern lies with the water meters that are used in the City. Like most of the infrastructure, our water meters are quite old. It is very common for older meters to lose their accuracy and under-record actual usage. As such, the Committee is recommending that all water meters in the City be replaced. There are approximately 1,785 meters in use and the estimated cost of replacement and installation is \$860,000. This estimate includes not only the smart meters, but also the necessary infrastructure and software for the system.

Per the recommendation of the Committee, the City administration is currently initiating a pilot water meter test program. The City will identify ten old meters from around Lathrup Village to have tested to determine their accuracy. This should help to verify that the meters are the primary cause of the loss issue and the potential saving from conducting this project.

This project should begin as soon as possible—every day of delay needlessly costs the City money. In fact, the cost of this project will pay for itself in less than five years by eliminating water loss that is currently paid for by the City.

C. Sanitary Sewer System

Lathrup Village has invested heavily over the past couple of decades in its sanitary sewer system. As a result, the system is in good condition, but it does require maintenance to keep it from degrading. This fall, the City invested in having 30,000 linear feet of sewer pipe inspected via closed circuit television. As a result of this process, the City Engineer recommends budgeting approximately \$120,000 for necessary repairs for each of the next four years. This work will total \$480,000.

D. Sanitary Retention Tank

Lathrup Village has its own sanitary retention tank that is used to store inflow from the sanitary sewer system when the inflow rate is greater than the rate at which we are permitted to outflow to the Evergreen-Farmington Sewer Disposal System (EFSDS). In the past, there have been instances where the retention tank has filled up and the City was forced to illegally allow the tank to overflow. As a result, the City is under a Consent Decree from the Michigan Department of Environment, Great Lakes and Energy (EGLE). Last year, we outsourced the operations and maintenance of the retention tank to the Oakland County Water Resource Commission (OCWRC). The County has notified us that our retention tank requires approximately \$500,000 in maintenance and repairs for safety and upgrades in order to obtain compliance with the Consent Decree.

E. Water System

Lathrup Village has approximately 31 miles of water main. Of that mileage, 17 miles of water main were installed prior to 1930 with the remaining 24 miles installed prior to 1972. The expected life of a water main is approximately 50 years. Because most of the system has already significantly outlived its useful life, the City experiences a much larger than expected number of costly water main breaks each year.

The City has been addressing this issue on an ongoing basis. This fall, the City completed the Santa Barbara water main project, which installed about a mile of new water main to increase pressure and volume to the west side of the City. However, a large portion of the water system still needs to be replaced. As discussed in a prior recommendation, the opportune time to replace water main is simultaneous to road replacement. This dramatically reduces the cost of water main replacement and also eliminates any need to damage existing

roadway in order to replace water main. The residents recently approved a three year road replacement project and it is recommended that the City replace as much water main as possible during this three-year project. The following road segments are on the eligible list for road replacement and it is recommended that their associated water mains are replaced in coordination with the road project:

- Goldengate from 11 Mile Road to California West
- Wiltshire from Southfield Road to Lathrup Boulevard
- Bloomfield from LaCrosse to Sunset Boulevard
- San Rosa from Southfield Road to Lathrup Boulevard
- Glenwood from Santa Barbara to Sunset

The estimated cost for replacing these water mains is \$1,360,000.

F. Fire Hydrants

Lathrup Village has approximately 243 fire hydrants and approximately 60% of those were installed prior to 1930. The City Engineer estimates that 120 hydrants need to be replaced or refurbished in order to provide optimal functionality should their use be required to extinguish a fire. It is estimated that 60 hydrants will need to be replaced and 60 will be able to be refurbished. The estimated cost per hydrant is \$4,540. This equates to a total project cost of \$545,000. The recommendation is to address 40 hydrants per year for the next three years.

Completing this project (along with water main improvements) will help to improve safety and ultimately improve the City's fire rating, which should result in lower insurance rates for businesses and residents.

G. Water Main Gate Valves

Gate valves are used to provide isolation capability for water mains. When water mains require maintenance or repair, a gate valve can be closed to shut off the water supply to the water main in question. Lathrup Village has over 300 gate valves of which 60% were installed prior to 1930. Due to their age, a large number of these gate valves no longer function. This is huge problem, especially because of the large number of water main breaks the City experiences every year. In many instances, when a water main breaks, the contractor cannot shut off the water upstream because of a non-functioning gate valve. This means the repair must be done under pressure, which results in added expense for the repair, additional time that residents are without water, excessive water loss for which the City is liable, and safety risk for the water department staff.

The City Engineer estimates that 162 gate valves require replacement. The cost of each replacement is estimated to be \$5,925, which equates to \$960,000 for the entire project. The City Engineer has recommended that 54 gate valves be replaced per year for the next three years.

H. Sidewalks

Approximately two years ago, City Council adopted the Infrastructure Committee's recommendation for a sidewalk improvement program. That program was scheduled to begin in the summer of 2020. However, due to Covid-19, that project was delayed and will begin in the summer of 2021 when both the business corridor and one residential quadrant will be addressed. While residents and business will pay for the entire cost of the program, the City will have up-front costs that will eventually be reimbursed. For the first year of the program, it is estimated at \$20,000.

H. Ditch Special Assessments

As part of the recently approved road replacement program, some streets will be required to undergo ditch repairs. Residents on these streets will pay for their ditch repair via a Special Assessment that is repayable over ten years. While the City will be fully reimbursed for this cost, it will be required to front the cost of this work. It is very difficult to estimate the amount at this juncture, as the design work is over a year away. The Committee is recommending that \$300,000 be estimated for this cost.

I. Financing

It is critical that the projects noted above obtain financing and begin as soon as possible.

Obviously, this will require the City to obtain funds for this work. The Committee has had extensive conversations with both Bond Counsel and Financial Counselors and is recommending the City use a Capital Improvement Bond for these projects.

A Capital Improvement Bond is a very flexible bond option that can be used for a variety of capital needs. These needs include all of the items discussed previously. This type of bond does not require that specific projects be identified in detail, but rather, just an estimate of their required cost. It is also a very flexible option. For example, we estimated that \$545,000 is required for the fire hydrant project. Should the fire hydrants be in better shape than expected and the project only costs \$345,000, the remaining \$200,000 can be allocated toward other capital projects. Repayment of the bond is flexible in that it can be repaid from a variety of sources, including the City's General Fund, the capital component of the water/sewer bill, Special Assessment payments, etc. A capital bond can contain multiple issues and you are not required to spend the entire amount that is approved. Lastly, the City would still be eligible to apply for any applicable grants.

To issue a Capital Improvement Bond, City Council would pass a resolution for the bond and issue a Notice of Intent. This notice, in turn, starts the clock for the residents' Right of Referendum. Ten percent of the residents would have to invoke that right in writing within 45 days to halt the bond from moving forward. If that does not occur, the bond is approved—it does **not** require a resident vote.

The Committee Recommends that City Council review this recommendation and act in a prompt manner as there are advantages to doing so. First, bond counsel indicated that the necessary work required for any bond is at least three weeks of dedicated city time. The City will embark on this process soon in order to secure the voter-approved road improvement bond. If the City processes two bonds simultaneously, the additional work for the second bond is negligible, which will save the City significant costs. Second and most important, the bond market will look very favorably upon the City issuing two bonds simultaneously. This informs the market that the City is wisely and aggressively planning a coordinated

approach for its future and this can result in a significantly better bond rating. A better rating would ultimately lower the financing costs of both bonds, relative to separate issuances, saving the City significant funds. Keeping in mind there is a required 45 day Right of Referendum, the City should consider this recommendation soon in order to reap the advantages of processing two bonds simultaneously.

The Committee recommends the City obtain a Capital Improvement Bond for \$5.18M, as this amount covers the cost for the aforementioned projects. Bond Counsel has recommended that it is advisable for the City to choose an amount that is “the largest amount that can be politically tolerated.” This is because it puts the City in a position where it has a funding mechanism for future capital projects without having to determine financing, issue additional bonds and/or go to the voters. Again, the fully authorized amount would not be required to be used, but would be available, if necessary. The Committee recommends \$5.18M, as it covers the anticipated cost of the needed infrastructure repairs (with a small contingency factor). Whether the City would like to request a higher amount would be a separate discussion for City Council and City administration to have.

The table on the following page provides more detail on the finances related to such a Capital Improvement Bond and how it was determined that \$5.18M is required.

Current Assets					
Sewer & Water Fund Balance	\$	3,780,000			
Balance available for Capital Projects	\$	1,880,000			
Remaining Sewer & Water Fund Balance	\$	1,900,000			
Annual Funds Raised by the Capital Component of Water Bill:					
Expected cu ft to be sold		13,800,000			
Capital H2O Rate Component per cu feet		0.00925			
Dollars Raised:	\$	127,650			
Estimated Project Costs					
Lead Testing	\$	1,160,000			
Water Meters	\$	860,000			
Sewer	\$	480,000			
Water Mains	\$	1,360,000			
Fire Hydrants	\$	545,000			
Gate Valves	\$	960,000			
Retention Tank	\$	550,000			
Lead Abatement, Ditching, Sidewalk & Other	\$	1,000,000			
Total:	\$	6,915,000			
Plus Bond Financing Cost (approximate)	\$	145,000			
Less Available Sewer & H2O Funds	\$	1,880,000			
Amount Needed in Capital Improvement Bond			\$ 5,180,000		
Annual Cost for \$4.6M Capital Imp Bond (20 year)	\$	336,700			
Annual Capital Raised by H2O Bill	\$	127,650			
Shortfall	\$	209,050			
Rate increase needed to raise \$209,050 from the capital component of the water bill would be \$.0245364/cu ft applied to the first 400 cu ft (the monthly minimum bill) of all water bills. Applying to first 400 cu feet only makes this equitable across all customers.		400 cu ft x \$.0245364/cu ft x 12 months x 1775 hookups = \$209,050			
Actual customer increase per month		400 cu ft x \$.0245364/cu ft = \$9.81 per month			

Looking at current assets, the City has a \$3.78M balance in the Water and Sewer Fund. The City has raised these funds through the collection of the capital component of the water\sewer bill over the years. While it would be nice to use all these funds for these necessary projects, the Committee recommends drawing only \$1.88M from this fund. Both the City's bond and financial counselors suggested we maintain half the balance to appear in a strong financial position to the financial markets. Doing so should help to keep our bond rating lower. In addition, should any emergency funds ever be necessary, there would be money in this fund.

In terms of annual funds raised by the City for capital purposes, the table shows the City raises approximately \$127,650 per year via the water\sewer bill capital rate component (without the 40% water loss, this figure would be \$208,000). This amount would be used to pay off most of the annual bond payments.

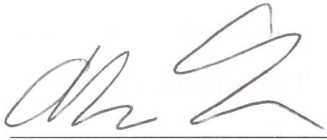
The table illustrates that \$6.915M is required for all the aforementioned projects. Note this includes \$1M for lead abatement, up-front ditching costs, up-front sidewalk costs and other potential uses\contingency. As noted earlier, these particular costs are very difficult to quantify. In addition, the financing cost of the bond will be approximately \$145,000. If you add the finance cost and subtract out the \$1.880M in available funds from the Water and Sewer Fund, this results in \$5.18M in required financing.

The annual cost of repaying a bond of this magnitude would be approximately \$336,700. Given we annually raise about \$127,650 from the water\sewer bill, this leaves an annual shortfall of \$209,050. The Committee recommends this shortfall be made up by a modest increase to the capital component of the water bill. More specifically, the calculation in the table shows that an increase of \$.0245364 per cubic feet applied only to the first 400 cubic feet (the monthly minimum billing amount) would raise the needed \$209,050. This equates to an additional \$9.81 per month to each of the City's water customers. The Committee feels this cost is a bargain for the magnitude of necessary work that would be completed. The low impact on the residents is also a testament to great financial planning work done by the various administration and City Council members over the years to maintain a decent balance in the Water and Sewer fund that will help to offset the cost to the residents.

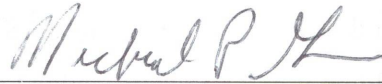
It is also important to note that the monthly increase shown above is the highest *theoretical* rate that residents could see in order to pay off a bond issuance of this magnitude. However, residents should never experience this \$9.81 per month rate increase. The actual enacted rate increase should be lower and should also fall significantly over the first few years as some of the infrastructure issues are corrected. For example, once new water meters are installed and the water loss is brought under control, the increase to the water bill can be reduced significantly. Reducing the water loss alone to a more realistic 20% loss would raise additional capital that would reduce the necessary rate increase from \$9.81 to \$7.82 per month. Further, it is relevant to note these figures assume that City receives the full \$5.18M in funds at once. In reality, the City will receive funds in multiple issuances over three years. This will reduce the rate in the first year considerably. While the rate will rise with any subsequent fund issuance, the reduction in water loss will keep the rates from ever reaching the \$9.81 amount noted previously. In addition, residents' repayments of their Special Assessments for ditch and sidewalk repairs will be used to pay off bond principal, which serves to deflate the water rate increase needed for bond repayment. Finally, the City will be applying for grants for some of these projects. Every grant received will help to lower any increase in water rate to the residents. Given the water rate is adjusted annually, all these dynamic factors can be assessed yearly and incorporated into the new water rate.

As always, the Committee is available to City Council and the Administration to answer questions or for further clarification and/or discussion.

This recommendation is made by the following voting members of the Infrastructure Committee:



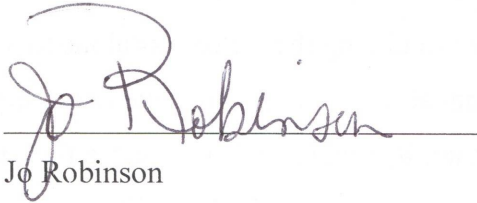
Bruce Kantor, Committee Chair
Mayor Pro Tem



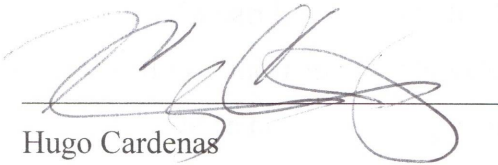
Michael Griffin



Mike Keenan



Jo Robinson



Hugo Cardenas