



MEMORANDUM

DATE: April 28, 2017

TO: President Cauley and Village Board of Trustees
Kathleen Gargano, Village Manager

FROM: George Peluso, Director of Public Services .
Dan Deeter, Village Engineer
Darrell Langlois, Assistant Village Manager/Finance Director

RE: Preliminary Overview - Advanced MIP and Accelerated Roadway Improvement and Infrastructure Plan

Background

Following the discussion with the Village President and Board of Trustees, staff prepared an accelerated roadway plan that includes completing the remaining Master Infrastructure Plan (MIP) work by 2019, and completing approximately 8 years of roadway resurfacing and other infrastructure improvements by 2020. There are three additional documents attached to this memorandum. These documents include a map of proposed improvements, a breakdown of the remaining MIP scheduled improvements, and the proposed accelerated roadway resurfacing plan.

As a way to formalize this plan, Staff members from the Public Services and Engineering Department recently inspected all the roadway conditions throughout the Village. Roads that were selected for improvements were rated as fair or poor. Considering the accelerated rate in which the roads will be resurfaced the "fair" roads that were selected could be categorized in the poor category in the next 3 to 5 years.

It is important to note that since the inception of the MIP in 2009 the Village has resurfaced or reconstructed 25 of its 66 miles of road. In 2017, an additional 4.5 miles will be improved. The total percentage of improvements equals 45%. The advanced MIP and accelerated roadway resurfacing program includes improving an additional 25.6 miles of road by the year 2020.

General Roadway and Infrastructure Facts

Provided below are some general roadway and infrastructure facts along with some basic assumptions that are utilized in selecting improvements.

1. What is the life expectancy of a road?
 - a. A typical bituminous road is anticipated to have a life cycle of 12 -15 years. Concrete roads can last 30 or more years with maintenance.
 - b. The life expectancy of a road is dependent on a number of factors including overall traffic volumes, construction/construction traffic during the life of the road,



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and existing base conditions. Construction on or near a road has two major impacts to the road;

- i. Excavations in the road can disturb the uniformity of the road structure and provide an opportunity for water to intrude and weaken the road's base.
 - ii. Heavy construction trucks used to deliver construction equipment and materials can have up to 30,000 times the impact of a standard passenger car.
- c. The typical life cycle of a roadway also includes implementation of certain preventative maintenance activities such as crack filling and pavement patching as necessary.
2. What is the linear foot cost to resurface an asphalt roadway?
 - a. Staff estimates the cost to be \$499,245 per mile including engineering costs and a 15% contingency.
 3. What is the linear foot cost to reconstruct a road in asphalt without utility replacement?
 - a. Staff estimates the cost to be \$2,617,840 per mile including engineering costs and a 15% contingency.
 4. What is the linear foot cost to reconstruct a road in concrete without utility replacement?
 - a. Staff estimates the cost to be \$2,808,960 per mile including engineering costs and a 15% contingency.

Proposed 2017 Accelerated Roadway Improvement and Infrastructure Program

As part of the original MIP, starting in 2017, the annual infrastructure budget in MIP is \$1,250,000 until 2020. After 2020, the annual infrastructure budget increases to \$2,250,000. The original intent of the plan was to fund this increased amount of roadway work every year to keep all the roads in good condition.

The sections of roadways that were selected for inclusion into the 2017 accelerated roadway and infrastructure plan are considered to be in fair to poor condition. Staff is recommending that these roads be improved primarily through asphalt resurfacing. The process for resurfacing includes grinding down 2" of the existing road, patching the roadway base, replacing segments of deteriorated curb and gutter, and performing final paving. The life expectancy of this type of work is approximately 12-15 years. There are also sections of concrete patching that will be included in the proposed work.

A list of the roads selected for improvement is attached to this memo. Other maintenance work that needs to be addressed as part of the 2017 program includes the following:

- Addressing sump pump and drainage issues on the following roads:
 - Bruner Street
 - Camberly Court
 - Childs Avenue



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- Garfield Street
- Grant Street
- Hickory Street
- Jefferson Street
- Quincy Street
- Seventh Street
- Sixth Street
- Thurlow Street
- Vine Street
- Washington Street

In summary, the proposed accelerated roadway and infrastructure plan for 2017 includes improving approximately 14.9 miles of bituminous and concrete roads, associated drainage and sump pump issues at an estimated cost of \$7,744,599. The estimate is inclusive of the necessary design and construction engineering costs.

Staff has spoken with our current engineering consultant, HR Green, for the 2017 MIP resurfacing and maintenance projects. They have stated that they are willing to expand their scope of work to include the accelerated 2017 roadway and infrastructure work. The Village President and Board of Trustees can consider a modification to their service contract at a future Board Meeting should the advanced plan be implemented.

Proposed 2018-2020 Accelerated Maintenance Plan

The remaining road and infrastructure work identified is scheduled for completion between the years of 2018-2020. Although some of these roads are considered in poor condition, the reason for pushing them out into future years is twofold. First, there are underground utilities such as water main that need to be replaced prior to the road work commencing. Secondly, some of the work is adjacent to or near scheduled MIP areas that are scheduled for completion. Rather than disrupting areas twice in consecutive years, the recommendation is to complete these areas in future years for better project coordination.

The proposed road and infrastructure improvements for 2018 are attached. Items included in this year's program other than road improvements are as follows:

- Replacement of water main on County Line Road from 47th Street to Sixth Street.
- Replacement of water main on Elm Street from Ogden Avenue to Walnut Street.
- Replacement of water main on The Lane from Garfield Street to Elm Street.
- Replacement or lining of water main in the side yard easements between Washington Street and Garfield Avenue.
- Brick road intersection improvements at First Street and Orchard Place.
- Brick road intersection improvements at First Street and Oak Street.

The proposed accelerated road and infrastructure work for 2019 is primarily focused on improvements in the area adjacent to the Hinsdale Middle School. Staff is reluctant to advance additional roadway and infrastructure work in this area until after the new middle school has been constructed. A list of roads recommended for accelerated improvements for 2019 is attached.



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The proposed road and infrastructure work for 2020 will be funded primarily through a State of Illinois Surface Transportation grant. The area recommended for resurfacing is Chicago Avenue from Garfield Street to the West End. The Village's share of the grant costs is \$307,338. There is a transmission water main from 1923 that should be considered for replacement prior to the road resurfacing. The total cost to replace this water main with engineering is estimated to be \$1,944,533.

The total amount of work proposed for the 2018-2020 accelerated road and infrastructure plan include:

1. Roadway resurfacing and concrete road patching of 2.7 miles of roadway at an estimated cost of \$3,604,208.
2. Replacement of 2.4 miles of 95+ year old transmission water main at a total cost of \$4,327,862.
3. Resolving associated drainage and sump nuisances at a total estimated cost of \$147,420.
4. Total cost of proposed roadway improvement and infrastructure work for 2018-2020 is estimated to be \$8,079,490.

Summary of the Proposed 2017-2020 Accelerated Road and Infrastructure Program

1. Includes 17.1 miles of roadway resurfacing or concrete patching work. Total costs are estimated to be \$10,941,607.
2. Includes the replacement of 95+ year old transmission water main at total estimated cost of \$4,327,862. These mains are critical feeds for providing all Hinsdale resident potable water without disruption.
3. Includes resolving associated drainage and sump nuisances at a total estimated cost \$554,620.

While Staff believes this proposed infrastructure improvement plan will resolve many of the Village's infrastructure needs, and will certainly address many resident complaints, there will be need for future improvements beyond 2020. After funding the expected debt service, there will be MIP funds remaining to fund some of level of annual maintenance for future needs.

Completion of the Master Infrastructure Improvement Program

Completing the scheduled resurfacing and reconstruction work identified in the MIP is also of critical importance. The primary reason is due in part to the mandate by the Illinois Environmental Agency to continue to separate combined sewers throughout the Village. The Village's National Pollutant Discharge Elimination System (NPDES) permit is set to expire in 2020. Under certain provisions of this permit, the Village is allowed to discharge combined sewerage into Flagg Creek. Per the conditions of the permit, the Village has **committed** to separate sewers in the following areas:

- The Lane (from Walker Street to Elm Street)
- Bodin Street (from Seventh Street to Eight Street)
- Bruner Street (from Sixth Street to Eight Street)
- Grant Street (from Eight Street to Ninth Street)



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- Elm Street (from Fourth Street to Sixth Street)
- Fifth Street (from Garfield Street to Park Avenue)
- Park Avenue (from Sixth Street to Seventh Street)
- Sixth Street (from Garfield Street to Oak Street)
- Blaine Street (from Chicago Avenue to Park Avenue)
- Chicago Avenue (from Garfield Street to Park Avenue)
- Park Street (Chicago Avenue to First Street)

As part of the required separation work, the entire roadway will be improved. This will help to minimize residential complaints regarding drivability.

Attached is a proposed advanced construction schedule for completing all the MIP work originally planned for completion by the year 2021. Staff has combined all planned work for 2018 and 2019 into the 2018 construction season and all work planned for 2020 and 2021 into the 2019 construction season.

There are some general concerns with residential disruption by doing all of this work so aggressively. However, Staff feels the workload is manageable and we can complete these projects successfully. The total cost for completing all the planned MIP work including engineering is estimated to be \$19,465,001. By the end of the MIP the Village would have completed an additional 8 miles of roadway reconstruction, and approximately 11 miles of resurfacing.

Staff has spoken with our current engineering consultant, GSG, for the 2018 MIP reconstruction and resurfacing projects. They have stated that they are willing to expand their scope of work to include all the 2019 work as well. The Village President and Board of Trustee can considered a modification to their contract at a future Board should the advanced plan be implemented.

Final Summary

Should the Village considering advancing infrastructure work for the next three years, Staff is recommending the following:

1. Complete all scheduled MIP improvements. The total amount of work remaining is estimated to be \$19,465,001.
2. Implement the accelerated 2017 road and infrastructure plan. This includes resurfacing and patching roads that are in fair to poor condition, and addressing associated sump pump and drainage issues. The total amount of repaving work includes approximately 14.5 miles at an estimated cost of \$7,744,559.

Staff has spoken to the general contractor currently working for the Village, and they are open to taking on this additional work. The scope of work to be performed is similar to what is currently under contract by the Village.

3. Implement the proposed accelerated 2018-2020 road and infrastructure plan. This includes resurfacing or patching roads that are in fair to poor condition, addressing associated sump pump and drainage issues, and replacing 95+ year old transmission



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water mains. The total amount of road and utility improvements are estimated to cost \$8,079,490.

4. The total amount of all infrastructure (accelerated road and infrastructure plan plus scheduled MIP) work completed through 2020 is estimated to be \$35,289,090.
5. Per the current 20 year debt service plan, there will be an estimated \$2,000,000 annually available for infrastructure. This includes resurfacing and patching of older roads, crack filling, water main replacement, sidewalk replacement, and sewer replacement and/or lining.
6. The bond sale will also include the funding for the construction of the new parking garage in the Central Business District which is estimated to cost \$4,530,000.

Activity	Estimated Cost
Remaining MIP Projects	\$ 19,465,001*
2017 Accelerated Roadway and Infrastructure Improvements (Proposed)	\$ 7,744,599**
2018-20 Accelerated Roadway and Infrastructure Improvements (Proposed)	\$ 8,079,490**
2021+ Road and Infrastructure Improvements	\$ 2,000,000***
Subtotal MIP & 2017-20 Accelerated Roadway and Infrastructure Improvements	\$ 35,289,090
Municipal CBD Parking Garage	\$ 4,530,000
Total MIP, Accelerated Roadway and Infrastructure Plan, & CBD Garage	\$ 39,819,090

*Estimated remaining MIP project balance.

**Add \$2,018,918 to total Accelerated Maintenance to construct certain roads in concrete. This works includes:

1. Reconstruction of Hinsdale Avenue from Madison Street to Grant Street. Current plan only includes patching.
2. Reconstruction of Hinsdale Avenue from Stough Street to Monroe Street. Current plan only includes patching.
3. Reconstruction of Chicago Avenue from Park Avenue to County Line Road. Current plan only includes patching.



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4. Construct Garfield Street from Hinsdale Avenue to 55th Street in concrete in lieu of asphalt.

***Annual funds available after debt service on a 20 year bond term.