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Date: ~~January 22, 2019~~ Updated January 23, 2019

To: City Council and Mayor

C: Jane Howington, City Manager
Thomas J. Sheridan, P.E., P.S., CFM, Assistant City Manager – Professional Services

From: Bradley Kosco PE., PS., City Engineer

Re: **Roadway Budget Analysis for 2016 - 2023**

City Council and Mayor,

City Council has requested an evaluation of the benefit of the increased annual resurfacing and overlay budget versus the City's Pavement Condition Index (PCI). City staff analyzed the overall PCI rating for the local road system based upon various funding amounts, evaluated the cost to resurface the entire local system and reviewed Hudson's overall roadway PCI rating compared to other Ohio cities.

Budget vs. PCI Rating Matrix:

Staff analyzed the current roadway network in the City with the exception of State of Ohio routes (i.e. I-480, SR 8, SR 91 and SR 303). The summary matrix below presents the resurfacing/overlay budgets and corresponding PCI ratings for 2016-2018 and future PCI ratings for various budget amounts between 2019-2023.

Year	Base Resurfacing Budget of \$1.1 Million (previous budget)	PCI w/ Base Resurfacing Budget of \$1.1 Million (previous budget)	Additional Resurfacing Budget	Total Resurfacing Budget (Current Budget for 2019-2023)	PCI with Additional Resurfacing Funding (With Current Budget for 2019-2023)	PCI Rating with \$2.5 Million Budget/Year
2016	<i>\$1,100,000</i>	<i>71.3</i>	<i>\$105,000</i>	<i>\$1,105,000</i>	<i>71.4</i>	
2017	<i>\$1,100,000</i>	<i>69.3</i>		<i>\$1,100,000</i>	<i>69.3</i>	
2018	<i>\$1,100,000</i>	<i>68.7</i>	<i>\$800,000</i>	<i>\$1,900,000</i>	<i>70.3</i>	
2019	\$1,100,000	68.5	\$750,000	\$1,850,000	71.8	73.0
2020	\$1,100,000	68.3	\$730,000	\$1,830,000	70.7	73.9
2021	\$1,100,000	66.7	\$720,000	\$1,820,000	70.7	74.7
2022	\$1,100,000	64.7	\$745,000	\$1,845,000	70.4	75.2
2023	\$1,100,000	63.7	\$740,000	\$1,840,000	70.2	75.5

Cost to Resurface Entire Road System:

Additional analysis using resurfacing unit costs and number of lane miles/square feet of pavement within Hudson system was conducted to establish the cost to resurface the entire Hudson system.

Currently, the City has approximately 151 centerline miles or 310 lane miles or approximately 19,613,467 square feet of pavement. These numbers do not include State Routes within the City of Hudson as ODOT performs the major rehabilitation and resurfacing on State Routes.

Calculations used an average cost of \$2.25/square foot or \$27/foot (based on 12' lanes) which is based upon current and future estimated resurfacing costs.

To Achieve 15-Year Resurfacing Program

\$27/foot x 5,280 ft/mile = \$142,560 x 310 lane miles / 15 years = \$2,946,240/year

To Achieve 20-Year Resurfacing Program

\$27/foot x 5,280 ft/mile = \$142,560 x 310 lane miles / 20 years = \$2,209,680/year

To Achieve 25-Year Resurfacing Program

\$27/foot x 5,280 ft/mile = \$142,560 x 310 lane miles / 25 years = \$1,767,744/year

Hudson PCI Comparison to Other Cities:

A comparison of the current Hudson PCI Rating and other local City PCI's are provided below for comparison.

Hudson PCI.....	71	NE Ohio City "D".....	67
NE Ohio City "A"	56	Central Ohio City "A"....	68
NE Ohio City "B"	60	Central Ohio City "B"....	76
NE Ohio City "C"	69	Central Ohio City "C"....	73

Summary:

Based upon the updated pavement software, the asphalt reconstruction/resurfacing and concrete overlay budget would need to be approximately \$2.0 - \$2.5 million per year in order to maintain or increase the PCI rating over the next five years. This does not include any outside sources of funding.

Bradley S. Kosco, P.E. P.S.
City Engineer