



CITY COUNCIL

CITY OF LATHRUP VILLAGE
27400 Southfield Road, Lathrup Village, Michigan 48076

STUDY SESSION AGENDA

MONDAY, JULY 22, 2019

Conference Room – Second Floor
5:30 p.m.

AGENDA ITEMS

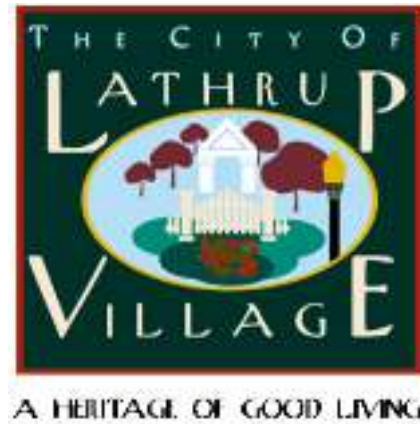
- A. **Call to Order** by Mayor Garrett
- B. **Discussion Items**
 - A. Discussion – Tringali Branch Chipping Service
 - B. Discussion – Infrastructure Study Group Recommendation
 - C. Discussion – Lathrup Services Contract
 - D. Discussion – See Click Fix
 - E. Discussion – Agenda Items
- C. **Mayor and Council Comments**
- D. **Public Comments**
- E. **Adjourn**

COUNCIL COMMUNICATION:

TO: Mayor Garrett and Council Members
FR: Sheryl Mitchell
DA: July 22, 2019
RE: **City Administrator – Follow Ups**

The following are updates on previous inquiries from Council Members

- Sidewalks
- Bike Lanes
- Dog Park
- Sign Ordinance
- Discussion – House in the Woods
- Right-of-Way near George’s Soccer
- Lathrup Village Town Homes – Alley and Landscaping
- Chase Bank – Brick Wall Replacement
- Decorative Street Sign – Lathrup Blvd and San Quentin; and Catalpa Sign



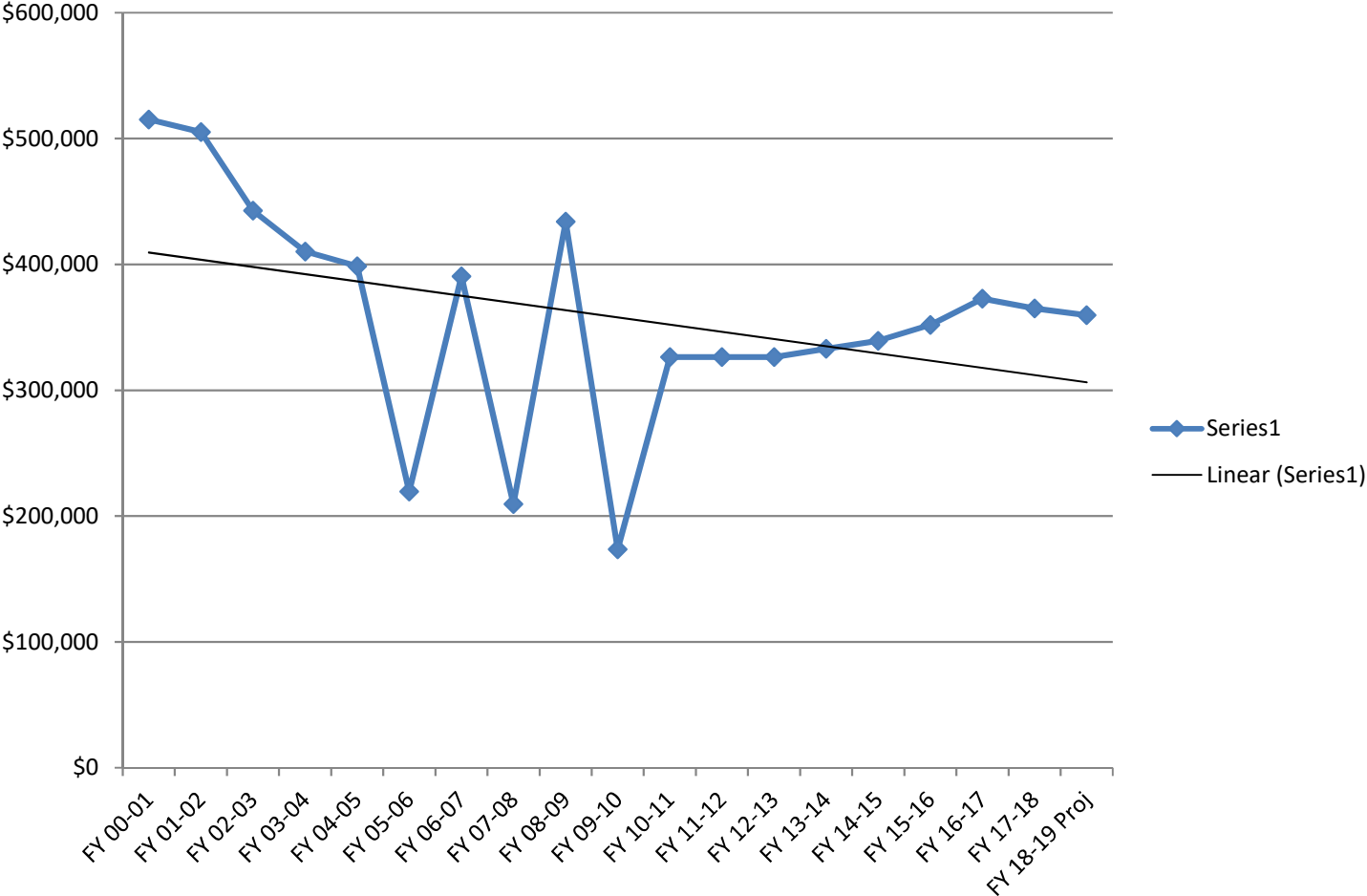
Infrastructure Town Hall

(Residential Roads and Storm Sewers)

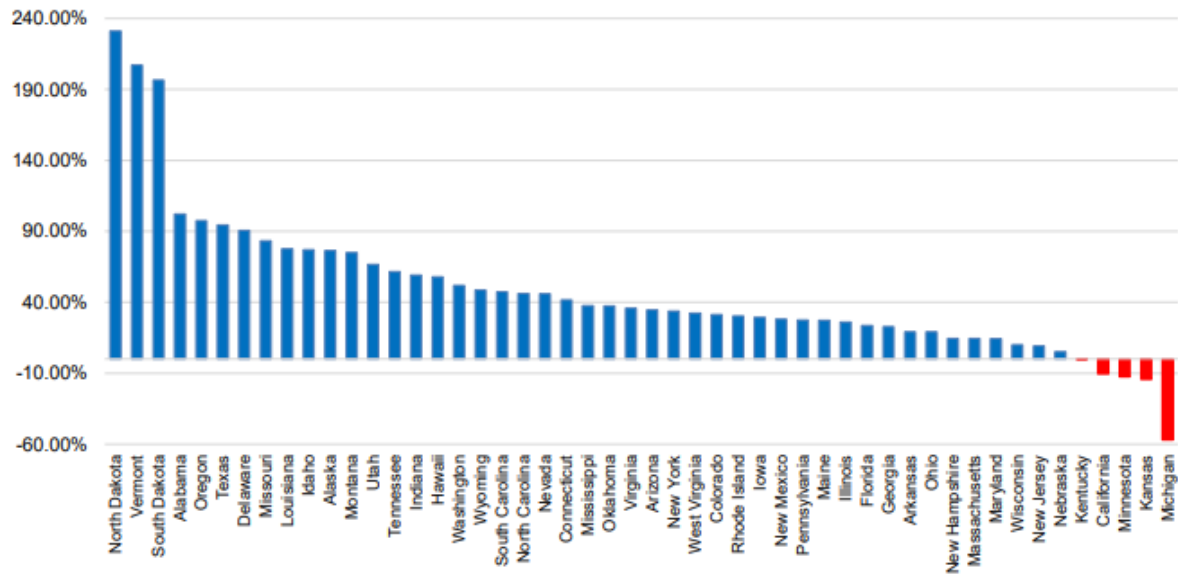
Headlee Rollback Example

	<u>Year 1</u>	<u>Year 2</u>
Taxable Value:	\$1,000,000	\$1,100,000
Millage Rate:	1.000 Mills	.909 Mills
Revenue:	\$1,000	\$1,000

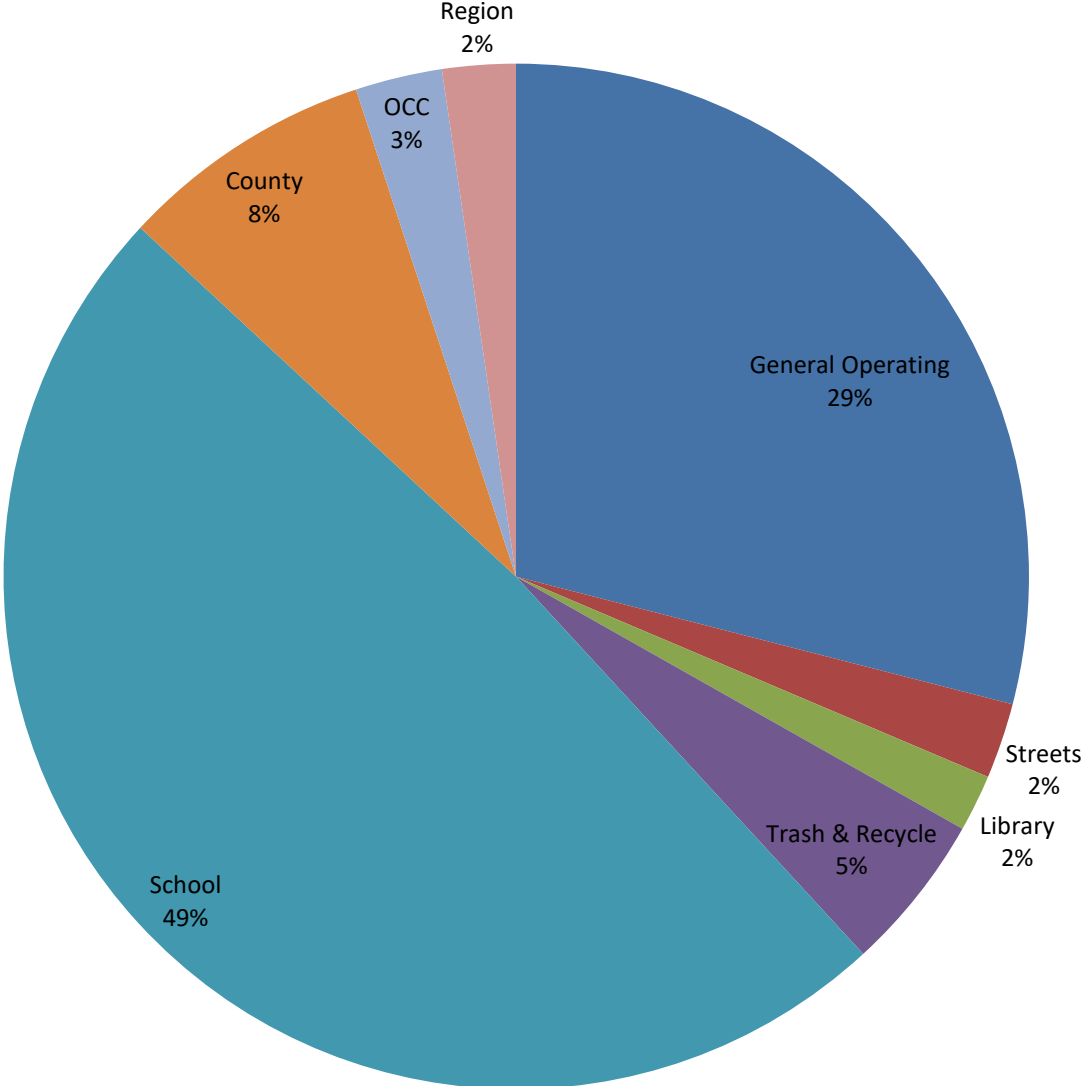
State Shared Revenue Trend



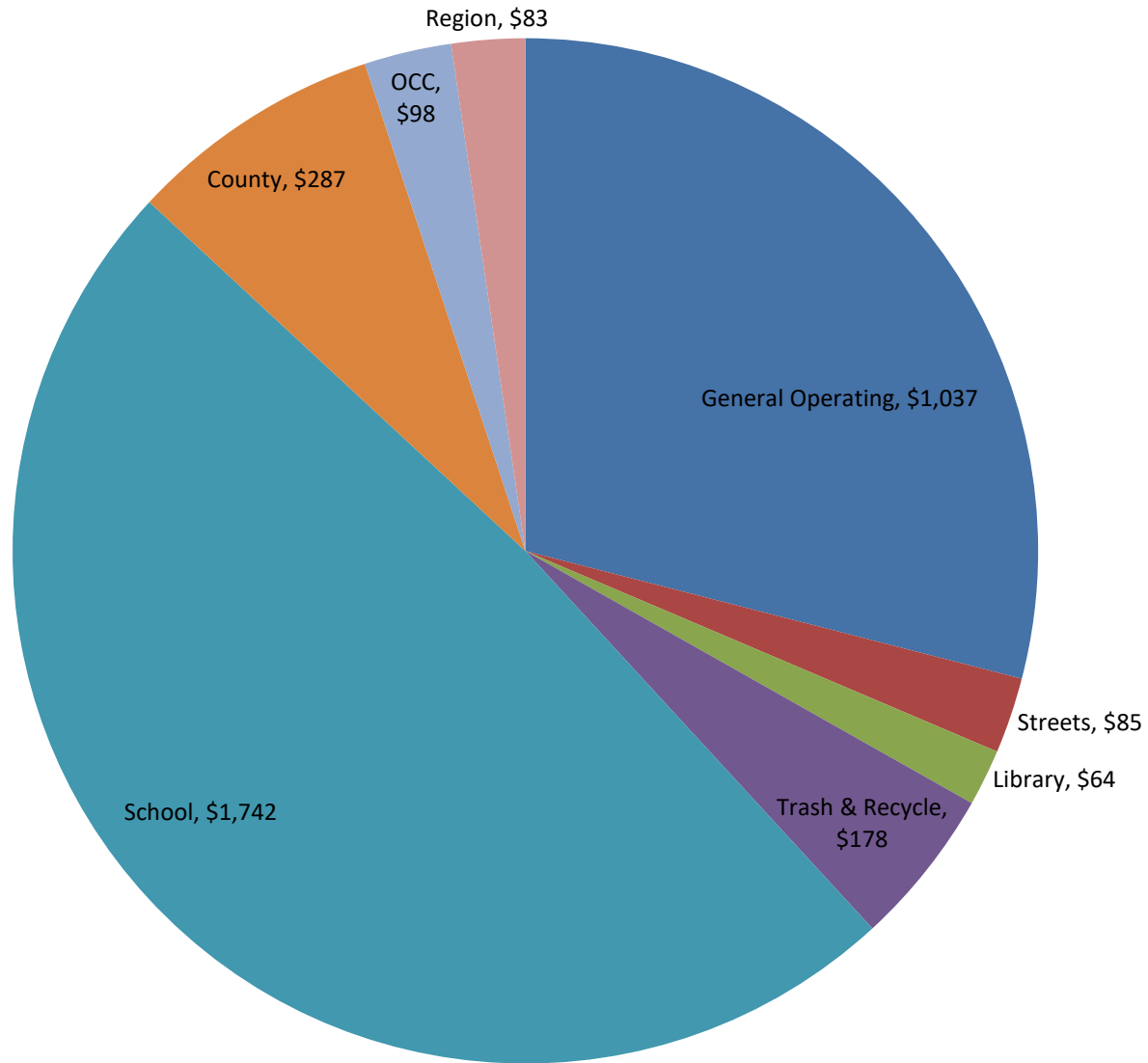
**Exhibit 12:
Growth in Municipal Revenue from State Sources (2002 - 2012)**



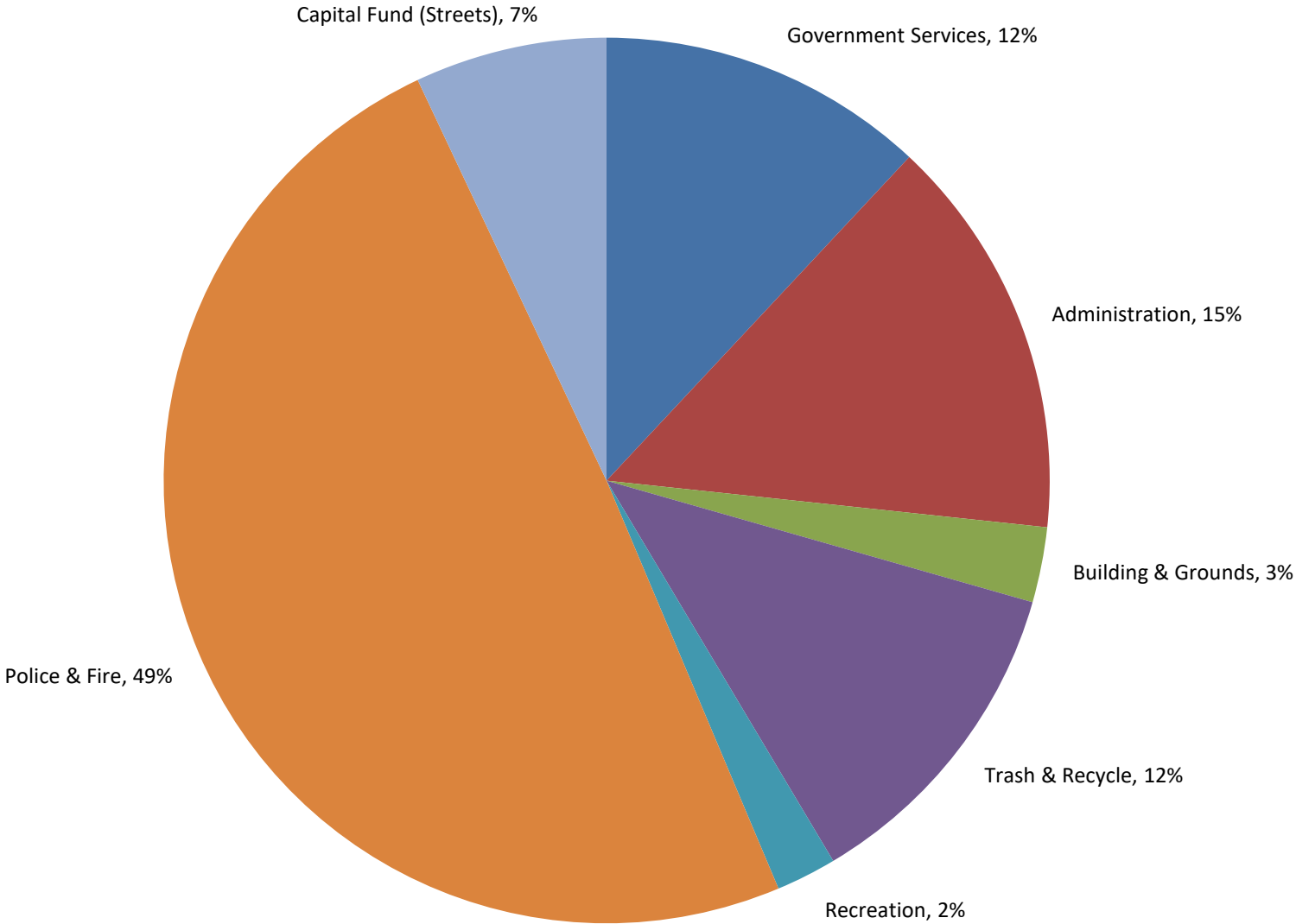
All Millage Rates As a Percentage of the Total (55.7939 Mills)



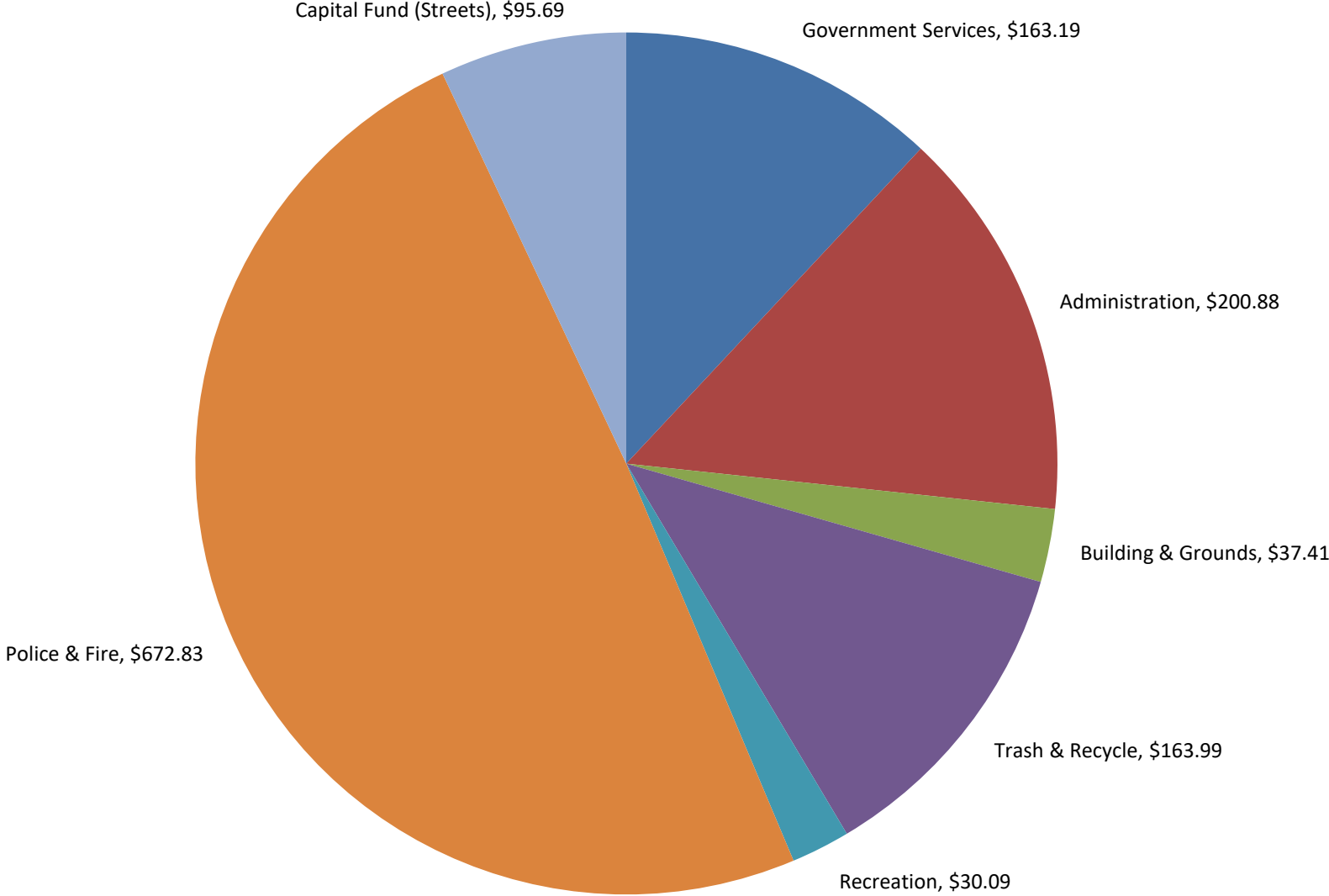
My \$3,574 Tax Dollars by Millage Category

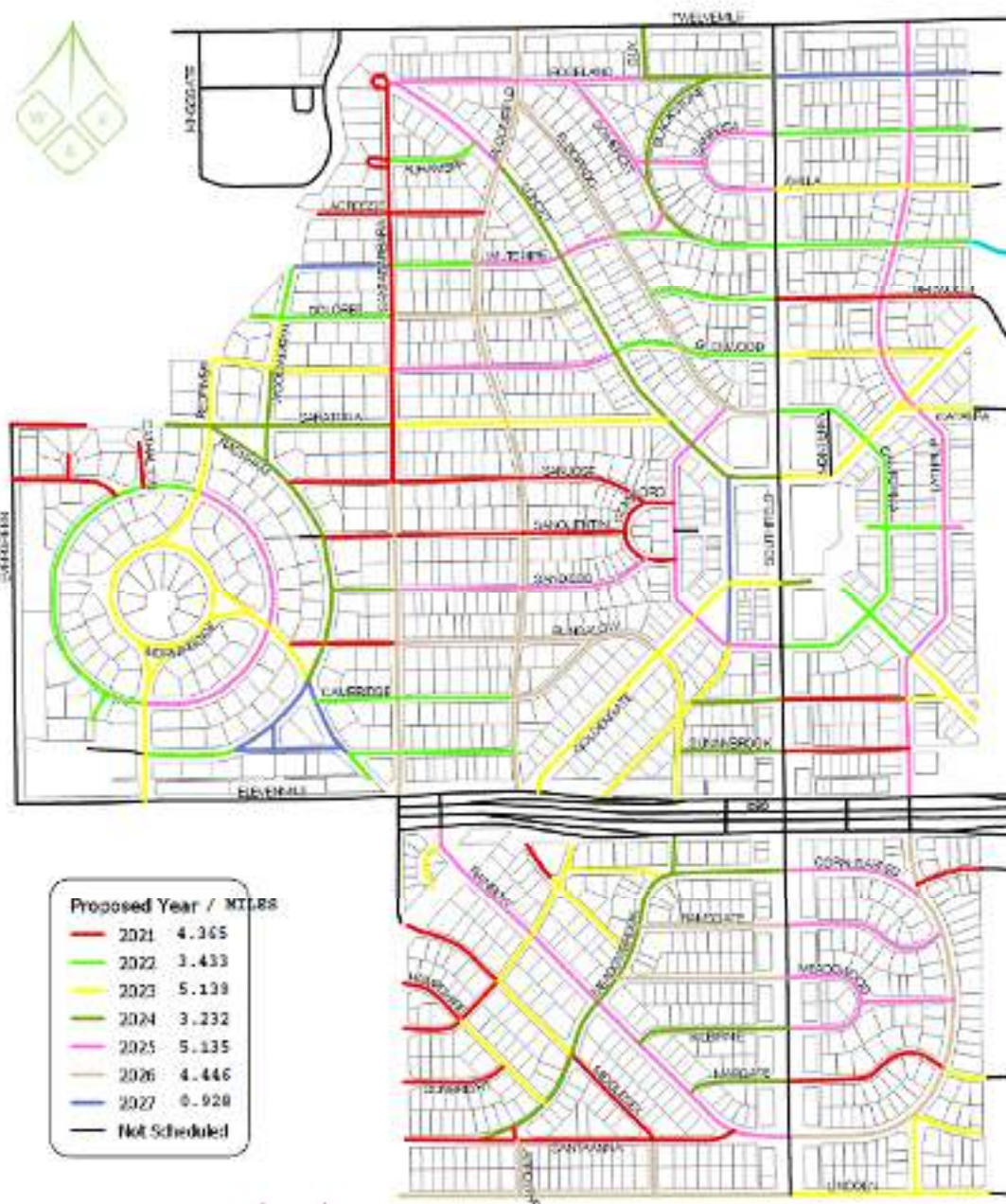


Where Do the Dollars Lathrup Receives Get Allocated?



Where Does The \$1,364 of my Taxes that go the City Get Allocated?





City of Lathrup Village
27400 Southfield Road
Lathrup Village, MI 48076

July 8, 2019

Attn: Dr. Sheryl Mitchell, City Administrator
Mr. Bruce Kantor, Mayor Pro Tem

Re: Road Repair and Drainage Capital Improvement Program

Dear Sheryl and Bruce,

The following capital improvement plan (CIP) is hereby submitted in order to budget for and allocate sufficient funds to reconstruct, rehabilitate, and resurface the City's roadway system and improve the City's roadside drainage system. This CIP has been prepared based on a 6 - 7 year construction schedule. The costs should be periodically updated to account for on-going additions, changes, inflation, and bid costs. In general, streets will be repaired utilizing three types of repair methods.

1. Reconstruction: The road will be reconstructed with two lifts of asphalt. The projects would include removing the existing asphalt and/or concrete, earth excavation and placing 10 inches of new aggregate base (if required), minor driveway replacement to match the new road grade, and placing 5 inches of new asphalt.

Existing gravel roads and concrete streets which require reconstruction would be repaired based on the same methodology noted above.

2. Rehabilitation: The road will be rehabilitated with two lifts of asphalt. The projects would include cold milling approximately 3 inches of existing asphalt, pavement conditioning, and placing 3.5 inches of new asphalt in 2 lifts.
3. Resurface: The road will be resurfaced with one lift of asphalt. These roads have been recently resurfaced and would generally be repaired near the end of the 6 – 7 year program. The projects would include cold milling 2 inches of existing asphalt, pavement conditioning, and placing a 2 inch asphalt overlay.
4. Drainage improvements: Roadside ditches which currently exhibit poor drainage will be graded to provide a consistent slope. Driveway culverts will be replaced or cleaned to provide positive drainage. Culverts which have been extended along a property will be cleaned to provide better drainage flow.

In all of the repair methods, existing utility structures will be adjusted to match the new asphalt elevation. Landscape restoration is included and dependent upon the method of repair, ADA sidewalk ramps will be upgraded to current ADA standards, along with other minor work items.

A 15% construction contingency has been included along with a 15 – 17% engineering fee to include topographic surveys (mainly for reconstruction and drainage improvements), design, bidding, construction administration, and inspection services.

The scope of this CIP includes the analysis of both the City’s local and major road networks. In the fall of 2017, Giffels Webster was authorized to perform a pavement evaluation study utilizing a common rating system known as the Pavement Surface Evaluation and Rating System (PASER). This method of evaluating the road surface consists of a visual survey to evaluate the road surface and compare the surface distresses to standardized conditions within a rating scale of 1 to 10 which includes:

<u>Rating</u>	<u>Condition</u>	<u>Rating</u>	<u>Condition</u>
1	Failed	6-7	Good
2	Very Poor	8	Very Good
3	Poor	9	Excellent
4-5	Fair	10	New Construction

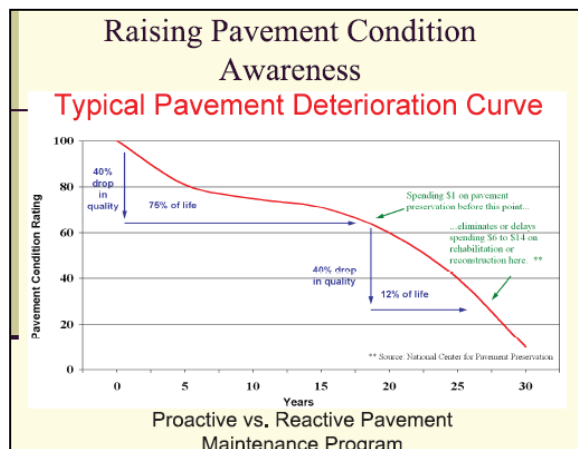
It should be noted that this standard evaluation procedure consists of rating the “surface” distress only and not any underlying concrete, aggregate, or subgrade distresses. Please see the attached PASER rating map.

Background

The City of Lathrup Village owns and maintains approximately 26.5 miles of roads in its street network, excluding 1.9 miles of major roads that are eligible for Federal Funding (EB and WB 11 Mile). In 2019, the City will obtain funding for WB 11 Mile from the east city border to Southfield Road). The City should continue to submit grant applications for funding of EB and WB 11 Mile.

Since 2004, the City has been reconstructing, rehabilitating, and resurfacing City streets as budgets allow. Since 2004, the City has repaired approximately 9 miles of roads. The majority of the work consisted of repairing failed pavement sections, cold milling, and overlaying the road with 2 to 3 ½” inches of hot mix asphalt.

After this period of major rehabilitation and resurfacing, the City has also funded routine maintenance in order to maximize the remaining useful life of the roads resurfaced since 2004. Routine maintenance generally includes crack sealing to keep water and moisture from entering the subgrade. As you can see from the deterioration curve, the road condition quality drops 40% over the first 75% of the pavement life then it drops an additional 40% over the next 12% of the pavement life. It is critical to have a proactive pavement maintenance program to repair roads before they get to the 12%.



Local Roads

This Roadway CIP has been developed to repair roads in “similar” conditions based on the PASER evaluations. Based on our review of the PASER ratings and typical repair methods, it is our recommendation that the majority of the streets will require either reconstruction or rehabilitation and a lesser amount will require resurfacing. Reconstruction is generally based on a 20 year life cycle, rehabilitation is 15 years, and resurfacing about 10 – 12 years assuming proper routine maintenance is performed.

Major Roads

Generally, major roads are funded utilizing Act 51 funds while local roads are funded with local road funds. Act 51 provides some guidelines to use major road funds for local road projects. However, due to the amount of funding the City receives from its Act 51, a 6 year CIP program will need a large supplement of funds that would likely come from a City bond issue.

The majority of major roads in the City are eligible for Federal Aid. The City has been aggressive in submitting for federal funding and somewhat successful for obtaining funds (WB 11 Mile and Evergreen) and should continue submitting grant applications.

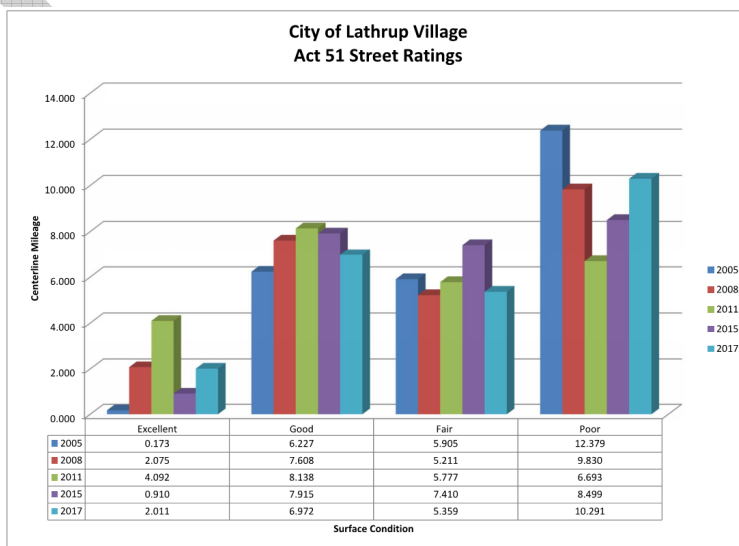
ADA Accessibility Compliance

Federal and State regulations such as the Americans with Disabilities Act (ADA) and Title 24 require all facilities open to the public be accessible to all. Any road repair project which is considered a structural alteration requires that ADA ramps be upgraded to current design standards. To accomplish this, it is recommended that the City follow the Public Rights of Way Access Advisory Committee (PROWAG) guidelines.

Estimated costs for ADA ramps are included in the budget. It is recognized that the City has been upgrading ADA ramps each year and the cost estimates reflect this work.

Current Conditions

The Act 51 Street Rating graph depicts the current 2017 PASER ratings of the City’s local road network compared to the ratings from the 2006, 2008, 2011, and 2015 pavement evaluation programs. As can be seen from the total streets graph, the road system has steadily declined in condition from 2011 due to reduced funding.



Roadway and Drainage Improvement CIP Cost

The estimated cost for the 6 - 7 year CIP should be monitored and updated annually. Roads may deteriorate at different rates which are dependant on numerous factors including age, traffic type and volume, base materials, water infiltration, and condition of the original pavement section. Scheduled repair areas should be physically inspected each year to assess and verify the work requirements for the upcoming fiscal year program. Pavement cores and soil borings have been obtained to verify and classify the existing pavement and subgrade materials and provide additional confidence in the repair strategies and cost estimates.

In order to develop a long range forecast of costs, a preliminary construction cost estimate was prepared for each of the anticipated repair methods that would be used based on the 2017 condition of the road. These repair methods would include (but not be limited to):

Asphalt / Composite Roads

<u>Rating</u>	<u>Condition</u>	<u>Treatment</u>
1, 2 (50%)	Failed, Very Poor	Reconstruction with 10” aggregate base and 5” asphalt
2(50%),3,4,5	V Poor, fair	Heavy Rehabilitation with milling and 3 ½” of asphalt
6 - 7	Good	Resurface with milling and 2” of asphalt
8 - 10	V Good, Excellent	Resurface with milling and 2” of asphalt (end of program)

Concrete Roads

<u>Rating</u>	<u>Condition</u>	<u>Treatment</u>
1, 2, 3	Failed, V Poor, Poor	Reconstruction with 10” aggregate base and 5” asphalt
4, 5	Fair	Heavy Pavement patching (25%) with base repairs
6 - 7	Good	Light Pavement patching (15%) with base repairs
8 - 10	V Good, Excellent	Routine maintenance (crack sealing)

The repair strategy used would be to concentrate on repairing condition rated 1 through 5 (failed to fair) streets in the early years of the repair program. This strategy would reconstruct failed and poor streets and significantly improve the condition 4 and 5 streets before they continue to deteriorate to a condition 2 or 3. Condition 2 and 3 streets are estimated to cost approximately \$350,000 more per mile to repair. Based on the above repair treatments and the current conditions of the road network, the estimated cost in 2019 dollars to repair the road system to a “good” condition and to improve the drainage system is \$21,311,100. In summary:

Asphalt / Composite Roads

<u>Repair Method</u>	<u>Repair Type</u>	<u>Total Miles</u>	<u>Cost per Mile</u>	<u>Total</u>
1A	Reconstruction	2.600	\$ 1,203,000	\$4,755,459
1B	Reconstruction	9.514	\$ 957,000	\$1,317,789
1C	Rehabilitation	4.843	\$ 679,000	\$4,511,955
1D	Resurfacing	3.879	\$ 360,000	<u>\$3,308,040</u>
			Subtotal	\$13,893,243

Concrete Roads

<u>Repair Method</u>	<u>Repair Type</u>	<u>Total Miles</u>	<u>Cost per Mile</u>	<u>Total</u>
2A	Reconstruction	1.129	\$ 1,306,000	\$1,474,475
2B	Reconstruction	0	\$ 1,059,000	\$0
2C	Heavy Pavt Patching	2.09	\$ 731,000	\$1,527,790
2D	Light Pavt Patching	0.593	\$ 549,000	\$325,557
Subtotal				\$3,327,821

Gravel Roads

<u>Repair Method</u>	<u>Repair Type</u>	<u>Total Miles</u>	<u>Cost per Mile</u>	<u>Total</u>
1A	Reconstruction	0.727	\$ 1,203,000	\$874,581
1B	Reconstruction	0.974	\$ 957,000	\$932,118
Subtotal				\$1,806,677
Subtotal Cost (2019 dollars)				<u>\$19,027,763</u>
6 Year Ave Inflation (2% net)				<u>\$2,283,337</u>
TOTAL ESTIMATED COST				<u>\$21,311,100</u>

Considerations:

1. Reflective cracking will propagate through the new asphalt surface on composite streets within 1 to 3 years. It is recommended that the road be crack sealed within 2-3 years after resurfacing. Costs associated with crack sealing have not been included above.
2. The City streets are very flat and it is difficult to control drainage with asphalt overlays. There may be some minor ponding adjacent to driveways. We recommend that a 3% cross slope be constructed to assist in draining the road.
3. Driveways will only be replaced in order to match the new road elevation and install culverts. This is estimated at 9 feet and will vary slightly. Driveways are not replaced due to their current condition.

Please see the attached road condition examples, preliminary construction cost estimates for anticipated items of work such as pavement removal or cold milling, new aggregate bases or base repairs, structure adjustments, and concrete or asphalt replacement, and the 2017 PASER pavement condition map.

Drainage Improvements

The City’s road drainage system generally consists of existing ditches, driveway culverts, and storm sewer conveyance system. The current condition of the drainage ditches is considered poor. The majority of culverts are in poor working condition with many of them buried. Buried culverts block drainage from all the upstream residences.

The opportune and cost effective time to improve drainage is during road repair work. Our recommendation is to install new 8 inch diameter culverts under the driveways and grading ditches to improve the drainage within the road right-of-way.

The total estimated quantity of drainage improvements is based on approximately 50% of the total road network length. The remaining 50% is typically intersections and adjacent to intersections where the drainage improvements would start or ditches that currently drain reasonably well. Properties that have filled in the existing ditch with culvert extensions will only have the culverts replaced under the driveway and the remaining culvert will be cleaned with no ditch improvements.

Water Distribution System

Lathrup Village’s water system includes approximately 32 miles of water mains that include pipes, 243 fire hydrants, and 303 gate valves all varying from 6 inches to 12 inches in diameter. The City’s water distribution system is becoming quite aged with approximately 55% of the system installed before 1930.

Water Distribution System Inventory			
Water Main Components	Installation Year	Quantity (LF)	% of Total Main
Meter Pits	-	2	-
Hydrants	-	243	-
Gate Valves	-	303	-
6” Inside Dia. Water Main	Before 1930	41,500	25.00%
	1931 - 1958	9,700	5.80%
	1959 - 1972	19,000	11.50%
	1973 - 2000	1,300	0.80%
8” Inside Dia. Water Main	Before 1930	39,200	23.50%
	1931 - 1958	7,000	4.20%
	1959 - 1972	10,000	6.00%
	1973 - 2000	20,800	12.50%
	After 2001	4,400	2.50%
12” Inside Dia. Water Main	Before 1930	11,200	6.80%
	1973 - 2000	2,700	1.50%

In 2016, the City authorized Giffels Webster to prepare a water reliability study as required by the Michigan Department of Environment Quality (MDEQ). Based on the results of this study, there were numerous areas within the City that are below the recommended capacity (water volume) for fire protection. Based on the study, water main projects are included in the 20 year Capital Improvement Plan.

Subsequently, more needs to be done in order to provide fire protection and reliable water service to the residents and businesses.

Based on this, we are recommending an additional 15,570 lft of water mains be replaced due to age, size, and location. The 15,570 lft is above and beyond what is included in the 20 year CIP. These additional water main will assist in providing additional water capacity for fire protect and eliminate water mains that are nearing 100 years old and have performed past the typical useful life of 50 years.

Estimated Total Cost

15,570 lft x \$220 / lft = \$3,425,400

Subtotal Cost (2019 dollars)	<u>\$3,425,400</u>
8 Year Ave Inflation (4%)	<u>\$581,833</u>
TOTAL ESTIMATED COST	<u>\$4,007,233</u>

As a reference, the cost to replace all the water main installed prior to 1958 is estimated at:

108,600 lft x \$220 / lft = \$23,892,000 (in 2019 dollars)

Please feel free to contact me if you have any questions or need additional information.

Respectfully,

Giffels Webster



Scott A. Ringler, PE, LEED AP
Partner

Encl: Road Condition Example Pictures
Preliminary Construction Cost Estimate
Current PASER Condition Map

Road Condition Examples

Santa Ann, Middlesex to Rainbow
Concrete Condition Poor



Santa Barbara, Alhambra to Roseland
Concrete Condition Poor



Santa Ann, Arrow to Middlesex
Concrete Condition Fair



Hampshire, El Dorado to Sunbright
Concrete Condition Fair



Meadowood, Meadowbrook to Southfield
Concrete Condition Good



Ramsgate, Meadowbrook to Southfield
Concrete Condition Good



Cambridge, Santa Barbara to Bloomfield
Asphalt Condition Poor



Saratoga, Bloomfield to Sunset
Asphalt Condition Poor



Santa Barbara, San Diego to San Quentin
Asphalt Condition Fair



Redwood, El Dorado to Southfield
Asphalt Condition Fair



San Diego, Santa Barbara to Bloomfield
Asphalt Condition Good



Roseland, Santa Barbara to Bloomfield
Asphalt Condition Good



Wiltshire, Santa Barbara to Woodworth
Asphalt Condition Excellent



Dolores, Bloomfield to Sunset
Asphalt Condition Excellent





Local Road - Asphalt Pavt Reconstruction PASER = 1, 2 (POOR)

GW NO.: Promotional
DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes pavt removal, earth excavation, 10" aggregate base, and 5" of new asphalt and drainage improvements

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
DEMOLITION						
	Rem conc. sidewalk	100	SY	\$12.00	\$1,200.00	Estimate 18 ea x 50 sft
	Rem HMA driveways	220	SY	\$12.00	\$2,640.00	33 drives x 15' wide x 4' deep
	Rem concrete driveways	330	SY	\$15.00	\$4,950.00	33 drives x 15' wide x 6' deep
	Cold mill HMA surf. (2"-4")	5870	SY	\$3.00	\$17,610.00	5280 ft x 20' wide x 50%
	Cold mill HMA surf. (4"-6")	5870	SY	\$4.50	\$26,415.00	5280 ft x 20' wide x 50%
	SUBTOTAL - DEMOLITION				\$52,815	
PAVEMENT CONDITIONING						
	Rem HMA patches		SY	\$15.00	\$0.00	
	Longitudinal joint repair, MDOT Det 7		LF	\$7.00	\$0.00	
	SUBTOTAL - PAVEMENT CONDITIONING				\$0	
EARTHWORK						
	Earth excavation	3260	CY	\$30.00	\$97,800.00	5280 x 20' wide x 10" deep x 1/27
	Subgrade undercutting Type II	130	CY	\$40.00	\$5,200.00	estimate 5% of road x 8" deep
	Stabilizing filter fabric (geoblanket)	11700	SY	\$2.50	\$29,250.00	5280 x 20' wide x 1/9
	Machine grading		STA	\$500.00	\$0.00	
	SUBTOTAL - EARTHWORK				\$132,250	
SOIL EROSION SEDIMENT CONTROL						
	Inlet/CB filter	40	EA	\$110.00	\$4,400.00	estimate 40 per mile
	SUBTOTAL - EROSION CONTROL				\$4,400	
SANITARY SEWER						
	Adjust san structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - SANITARY SEWER				\$2,750	
WATER DISTRIBUTION						
	Adjust GV&W structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	Adjust water shutoff	2	EA	\$400.00	\$800.00	estimate 2 per mile
	SUBTOTAL - WATER DISTRIBUTION				\$3,550	
STORM SEWER						
	Adjust stm structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - STORM SEWER				\$2,750	
UNDERDRAIN						
	Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
	Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
	SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS						
	6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
	ADA Detectable Warnings	90	FT	\$45.00	\$4,050.00	18 ea x 5 ft
	SUBTOTAL - CURBS AND SIDEWALKS				\$10,350	
AGGREGATES AND SAND						
	10" aggr. Base	11700	SY	\$11.00	\$128,700.00	5280 x 20' wide x 1/9
	SUBTOTAL - AGGREGATES AND SAND				\$128,700	

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT						
	HMA, 3C (leveling)	1950	TN	\$95.00	\$185,250.00	3" thick
	HMA, 5E1	1300	TN	\$100.00	\$130,000.00	2" thick
	HMA, 36A (driveways, approaches)	50	TN	\$125.00	\$6,250.00	33 ea x 15' x 4' x 4" thick
	Handpatching, 0 - 20 tons	0	TN	\$175.00	\$0.00	
	SUBTOTAL - HOT MIX ASPHALT				\$321,500	
CONCRETE PAVEMENTS						
	6" nonreinf Conc. driveway	330	SY	\$50.00	\$16,500.00	33 ea x 15' x 6' x 1/9
	SUBTOTAL - CONCRETE PAVEMENT				\$16,500	
TRAFFIC CONTROL AND STRIPING						
	Sign, Type_, temp	100	SFT	\$5.00	\$500.00	Budget
	Drum barrel, Lighted	175	EA	\$25.00	\$4,375.00	1 per 50' + 1 per drive
	Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
	Arrow Board, Lighted	1	EA	\$1,000.00	\$1,000.00	Budget
	SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$7,375	
LANDSCAPING						
	Topsoil surf., furnish, 2"	3520	SY	\$3.00	\$10,560.00	3' wide each side of road
	Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
	Mulch Blanket	3520	SY	\$2.50	\$8,800.00	3' wide each side of road
	SUBTOTAL - LANDSCAPING				\$22,560	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)						
	Rem HMA Driveway	275	SY	\$12.00	\$3,300.00	33 drives x 15' wide x 5' deep
	Rem concrete driveway	165	SY	\$15.00	\$2,475.00	33 drives x 15' wide x 3' deep
	HMA 36A (driveway)	60	Ton	\$125.00	\$7,500.00	33 drives x 15' wide x 5' deep
	6" nonreinf conc. driveway	165	SY	\$50.00	\$8,250.00	33 drives x 15' wide x 3' deep
	Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
	Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
	Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
	Topsoil Surf, furn, 2"	3500	SY	\$3.00	\$10,500.00	5,250' x 6' wide x 1/9
	Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
	Mulch Blanket	3500	SY	\$2.50	\$8,750.00	5,250' x 6' wide x 1/9
	Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
	Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
	SUBTOTAL - DRAINAGE IMPROVEMENTS				\$126,425	
MOBILIZATION AND MINOR TRAFFIC CONTROL						
	Mobilization, Max 3%	1	LS	\$25,300	\$25,300	
	Minor Traffic Control Devices, Max 3%	1	LS	\$25,300	\$25,300	
	SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$50,600	
SUBTOTAL CONSTRUCTION COST					\$893,925	
SUBTOTAL CONSTRUCTION COST					\$893,925	
CONSTRUCTION CONTINGENCY				15%	\$134,089	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION				17%	\$174,762	
TOTAL ESTIMATED COST					\$1,202,775	

Specific work items that ARE NOT included in this estimate include:

It should be pointed out that since we have no control over the Contractor's method of determining prices, competitive bidding or market conditions, our opinion of the probable construction cost as provided for herein is made on the basis of experience and represents our best judgment as design professionals. We cannot guarantee that the final construction cost will not vary from this estimate.

Respectfully,
GIFFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

1025 E Maple, Suite 1200 Birmingham, MI 48009-6426 (248) 852-3100 Fax: (248) 852-6372	28 W. Adams, Suite 1200 Detroit, MI 48226-1609 (313) 962-4442 Fax: (313) 962-5068	6303 26 Mile Road, Suite 100 Washington Twp, MI 48094-3819 (586) 781-8950 Fax: (586) 781-8951
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Local Road - Asphalt Pavt Reconstruction PASER = 1, 2 (POOR)
MACHINE GRADING WITH EXISTING AGGREGATE BASE

GW NO.: Promotional
DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes pavt removal, machine grading, and 5" of new asphalt and drainage improvements

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	Cold mill HMA surf. (4"-6")	5870	SY	\$4.50	\$26,415.00	5280 ft x 20' wide x 50%
	SUBTOTAL - DEMOLITION				\$52,815	
PAVEMENT CONDITIONING						
	Rem HMA patches		SY	\$15.00	\$0.00	
	Longitudinal joint repair, MDOT Det 7		LF	\$7.00	\$0.00	
	SUBTOTAL - PAVEMENT CONDITIONING				\$0	
EARTHWORK						
	Earth excavation	650	CY	\$30.00	\$19,500.00	5280 x 20' wide x 2" deep budget
	Subgrade undercutting Type II	130	CY	\$40.00	\$5,200.00	estimate 5% of road x 8" deep
	Stabilizing filter fabric (geoblanket)		SY	\$2.50	\$0.00	
	Machine grading	52	STA	\$500.00	\$26,000.00	
	SUBTOTAL - EARTHWORK				\$50,700	
SOIL EROSION SEDIMENT CONTROL						
	Inlet/CB filter	40	EA	\$110.00	\$4,400.00	estimate 40 per mile
	SUBTOTAL - EROSION CONTROL				\$4,400	
SANITARY SEWER						
	Adjust san structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - SANITARY SEWER				\$2,750	
WATER DISTRIBUTION						
	Adjust GV&W structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	Adjust water shutoff	2	EA	\$400.00	\$800.00	estimate 2 per mile
	SUBTOTAL - WATER DISTRIBUTION				\$3,550	
STORM SEWER						
	Adjust stm structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - STORM SEWER				\$2,750	
UNDERDRAIN						
	Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
	Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
	SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS						
	6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
	ADA Detectable Warnings	90	FT	\$45.00	\$4,050.00	18 ea x 5 ft
	SUBTOTAL - CURBS AND SIDEWALKS				\$10,350	
AGGREGATES AND SAND						
	Supplemental aggr. Base, 2" average	1250	Ton	\$30.00	\$37,500.00	5280 x 20' wide x 2" average
	SUBTOTAL - AGGREGATES AND SAND				\$37,500	

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT						
	HMA, 3C (leveling)	1950	TN	\$95.00	\$185,250.00	3" thick
	HMA, 5E1	1300	TN	\$100.00	\$130,000.00	2" thick
	HMA, 36A (driveways, approaches)	50	TN	\$125.00	\$6,250.00	33 ea x 15' x 4' x 4" thick
	Handpatching, 0 - 20 tons	0	TN	\$175.00	\$0.00	
	SUBTOTAL - HOT MIX ASPHALT				\$321,500	
CONCRETE PAVEMENTS						
	6" nonreinf Conc. driveway	330	SY	\$50.00	\$16,500.00	33 ea x 15' x 6' x 1/9
	SUBTOTAL - CONCRETE PAVEMENT				\$16,500	
TRAFFIC CONTROL AND STRIPING						
	Sign, Type_, temp	100	SFT	\$5.00	\$500.00	Budget
	Drum barrel, Lighted	175	EA	\$25.00	\$4,375.00	1 per 50' + 1 per drive
	Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
	Arrow Board, Lighted	1	EA	\$1,000.00	\$1,000.00	Budget
	SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$7,375	
LANDSCAPING						
	Topsoil surf., furnish, 2"	3520	SY	\$3.00	\$10,560.00	3' wide each side of road
	Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
	Mulch Blanket	3520	SY	\$2.50	\$8,800.00	3' wide each side of road
	SUBTOTAL - LANDSCAPING				\$22,560	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)						
	Rem HMA Driveway	275	SY	\$12.00	\$3,300.00	33 drives x 15' wide x 5' deep
	Rem concrete driveway	165	SY	\$15.00	\$2,475.00	33 drives x 15' wide x 3' deep
	HMA 36A (driveway)	60	Ton	\$125.00	\$7,500.00	33 drives x 15' wide x 5' deep
	6" nonreinf conc. driveway	165	SY	\$50.00	\$8,250.00	33 drives x 15' wide x 3' deep
	Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
	Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
	Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
	Topsoil Surf, furn, 2"	3500	SY	\$3.00	\$10,500.00	5,250' x 6' wide x 1/9
	Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
	Mulch Blanket	3500	SY	\$2.50	\$8,750.00	5,250' x 6' wide x 1/9
	Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
	Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
	SUBTOTAL - DRAINAGE IMPROVEMENTS				\$126,425	
MOBILIZATION AND MINOR TRAFFIC CONTROL						
	Mobilization, Max 3%	1	LS	\$20,117	\$20,117	
	Minor Traffic Control Devices, Max 3%	1	LS	\$20,117	\$20,117	
	SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$40,235	
SUBTOTAL CONSTRUCTION COST					\$710,810	
SUBTOTAL CONSTRUCTION COST					\$710,810	
CONSTRUCTION CONTINGENCY				15%	\$106,621	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION				17%	\$138,963	
TOTAL ESTIMATED COST					\$956,394	

Specific work items that ARE NOT included in this estimate include:

It should be pointed out that since we have no control over the Contractor's method of determining prices, competitive bidding or market conditions, our opinion of the probable construction cost as provided for herein is made on the basis of experience and represents our best judgment as design professionals. We cannot guarantee that the final construction cost will not vary from this estimate.

Respectfully,
GIFFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

1025 E Maple, Suite 1200 Birmingham, MI 48009-6426 (248) 852-3100 Fax: (248) 852-6372	28 W. Adams, Suite 1200 Detroit, MI 48226-1609 (313) 962-4442 Fax: (313) 962-5068	6303 26 Mile Road, Suite 100 Washington Twp, MI 48094-3819 (586) 781-8950 Fax: (586) 781-8951
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Local Road - Asphalt Pavt Rehabilitation PASER = 3, 4, 5 (POOR - FAIR)

GW NO.: Promotional

DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes cold milling 3", patching, and placing 3.5" of new asphalt and drainage improvements.

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
DEMOLITION						
	Rem conc. sidewalk	100	SY	\$12.00	\$1,200.00	Estimate 18 ea x 50 sft
	Rem HMA driveways	220	SY	\$12.00	\$2,640.00	33 drives x 15' wide x 4' deep
	Rem concrete driveways	330	SY	\$15.00	\$4,950.00	33 drives x 15' wide x 6' deep
	Cold mill HMA surf. (2"-4")	11700	SY	\$3.00	\$35,100.00	5280 ft x 20' wide
	Cold mill HMA surf. (4"-6")		SY	\$4.50		
	SUBTOTAL - DEMOLITION				\$43,890	
PAVEMENT CONDITIONING						
	Rem HMA patches	350	SY	\$15.00	\$5,250.00	Estimate 3% of pavt area
	SUBTOTAL - PAVEMENT CONDITIONING				\$5,250	
EARTHWORK						
	Earth excavation		CY	\$30.00	\$0.00	
	Subgrade undercutting Type II	200	CY	\$40.00	\$8,000.00	estimate 5% of road x 12" deep
	Stabilizing filter fabric (geoblanket)		SY	\$2.50	\$0.00	
	Machine grading		STA	\$500.00	\$0.00	
	SUBTOTAL - EARTHWORK				\$8,000	
SOIL EROSION SEDIMENT CONTROL						
	Inlet/CB filter	40	EA	\$110.00	\$4,400.00	estimate 40 per mile
	SUBTOTAL - EROSION CONTROL				\$4,400	
SANITARY SEWER						
	Adjust san structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - SANITARY SEWER				\$2,750	
WATER DISTRIBUTION						
	Adjust GV&W structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	Adjust water shutoff	2	EA	\$400.00	\$800.00	estimate 2 per mile
	SUBTOTAL - WATER DISTRIBUTION				\$3,550	
STORM SEWER						
	Adjust stm structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - STORM SEWER				\$2,750	
UNDERDRAIN						
	Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
	Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
	SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS						
	6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
	ADA Detectable Warnings	90	FT	\$40.00	\$3,600.00	18 ea x 5 ft
	SUBTOTAL - CURBS AND SIDEWALKS				\$9,900	
AGGREGATES AND SAND						
	10" aggr. Base		SY	\$11.00	\$0.00	
	SUBTOTAL - AGGREGATES AND SAND				\$0	

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT						
	HMA, 3C (leveling)	1300	TN	\$95.00	\$123,500.00	2" thick
	HMA, 5E1	965	TN	\$100.00	\$96,500.00	1.5" thick
	HMA, 36A (driveways, approaches)	50	TN	\$125.00	\$6,250.00	33 ea x 15' x 4' x 4" thick
	Handpatching, 0 - 20 tons	20	TN	\$175.00	\$3,500.00	Budget
	SUBTOTAL - HOT MIX ASPHALT				\$229,750	
CONCRETE PAVEMENTS						
	6" nonreinf Conc. driveway	330	SY	\$50.00	\$16,500.00	33 ea x 15' x 6' x 1/9
	SUBTOTAL - CONCRETE PAVEMENT				\$16,500	
TRAFFIC CONTROL AND STRIPING						
	Sign, Type_, temp	100	SFT	\$5.00	\$500.00	Budget
	Drum barrel, Lighted	120	EA	\$25.00	\$3,000.00	1 per 100' + 1 per drive
	Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
	Arrow Board, Lighted	0	EA	\$1,000.00	\$0.00	
	SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$5,000	
LANDSCAPING						
	Topsoil surf., furnish, 2"	1170	SY	\$3.00	\$3,510.00	1' wide each side of road
	Class "A" seeding	50	LB	\$20.00	\$1,000.00	220 lbs / acre
	Mulch Blanket	1170	SY	\$2.50	\$2,925.00	1' wide each side of road
	SUBTOTAL - LANDSCAPING				\$7,435	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)						
	Rem HMA Driveway	275	SY	\$12.00	\$3,300.00	33 drives x 15' wide x 5' deep
	Rem concrete driveway	165	SY	\$15.00	\$2,475.00	33 drives x 15' wide x 3' deep
	HMA 36A (driveway)	60	Ton	\$125.00	\$7,500.00	33 drives x 15' wide x 5' deep
	6" nonreinf conc. driveway	165	SY	\$50.00	\$8,250.00	33 drives x 15' wide x 3' deep
	Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
	Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
	Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
	Topsoil Surf, furn, 2"	4667	SY	\$3.00	\$14,001.00	5,250' x 8' wide x 1/9
	Class "A" seeding	210	LB	\$20.00	\$4,200.00	220 lbs / acre
	Mulch Blanket	4667	SY	\$2.50	\$11,667.50	5,250' x 8' wide x 1/9
	Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
	Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
	SUBTOTAL - DRAINAGE IMPROVEMENTS				\$133,844	
MOBILIZATION AND MINOR TRAFFIC CONTROL						
	Mobilization, Max 3%	1	LS	\$14,533	\$14,533	
	Minor Traffic Control Devices, Max 3%	1	LS	\$14,533	\$14,533	
	SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$29,065	
SUBTOTAL CONSTRUCTION COST					\$513,484	
SUBTOTAL CONSTRUCTION COST					\$513,484	
CONSTRUCTION CONTINGENCY				15%	\$77,023	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION				15%	\$88,576	
TOTAL ESTIMATED COST					\$679,082	

Specific work items that ARE NOT included in this estimate include:

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Respectfully,
GIFFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

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REPAIR METHOD 1D

Local Road - Asphalt Pavt Rehabilitation PASER = 6,7,8 (GOOD)

GW NO.: Promotional

DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes cold milling 2", patching, and placing 2" of new asphalt and drainage improvements

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
DEMOLITION						
	Rem conc. sidewalk	100	SY	\$12.00	\$1,200.00	Estimate 18 ea x 50 sft
	Rem HMA driveways	220	SY	\$12.00	\$2,640.00	33 drives x 15' wide x 4' deep
	Rem concrete driveways	330	SY	\$15.00	\$4,950.00	33 drives x 15' wide x 6' deep
	Cold mill HMA surf. (2"-4")	11700	SY	\$2.50	\$29,250.00	5280 ft x 20' wide
	Cold mill HMA surf. (4"-6")		SY	\$4.50		
	SUBTOTAL - DEMOLITION				\$38,040	
PAVEMENT CONDITIONING						
	Rem HMA patches	220	SY	\$15.00	\$3,300.00	Estimate 2% of pavt area
	SUBTOTAL - PAVEMENT CONDITIONING				\$3,300	
EARTHWORK						
	Earth excavation		CY	\$30.00	\$0.00	
	Subgrade undercutting Type II	80	CY	\$40.00	\$3,200.00	estimate 2% of road x 12" deep
	Stabilizing filter fabric (geoblanket)		SY	\$2.50	\$0.00	
	Machine grading		STA	\$500.00	\$0.00	
	SUBTOTAL - EARTHWORK				\$3,200	
SOIL EROSION SEDIMENT CONTROL						
	Inlet/CB filter	40	EA	\$110.00	\$4,400.00	estimate 40 per mile
	SUBTOTAL - EROSION CONTROL				\$4,400	
SANITARY SEWER						
	Adjust san structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - SANITARY SEWER				\$2,750	
WATER DISTRIBUTION						
	Adjust GV&W structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	Adjust water shutoff	2	EA	\$400.00	\$800.00	estimate 2 per mile
	SUBTOTAL - WATER DISTRIBUTION				\$3,550	
STORM SEWER						
	Adjust stm structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - STORM SEWER				\$2,750	
UNDERDRAIN						
	Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
	Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
	SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS						
	6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
	ADA Detectable Warnings	90	FT	\$40.00	\$3,600.00	18 ea x 5 ft
	SUBTOTAL - CURBS AND SIDEWALKS				\$9,900	
AGGREGATES AND SAND						
	10" aggr. Base		SY	\$11.00	\$0.00	
	SUBTOTAL - AGGREGATES AND SAND				\$0	

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT						
	HMA, 3C (leveling)		TN	\$100.00	\$0.00	
	HMA, 5E1	1355	TN	\$105.00	\$142,275.00	2" thick + 5%
	HMA, 36A (driveways, approaches)	50	TN	\$125.00	\$6,250.00	33 drives x 15' wide x 4' deep
	Handpatching, 0 - 20 tons	10	TN	\$175.00	\$1,750.00	Budget
	SUBTOTAL - HOT MIX ASPHALT				\$150,275	
CONCRETE PAVEMENTS						
	6" nonreinf Conc. driveway	330	SY	\$50.00	\$16,500.00	33 drives x 15' wide x 6' deep
	SUBTOTAL - CONCRETE PAVEMENT				\$16,500	
TRAFFIC CONTROL AND STRIPING						
	Sign, Type_, temp	100	SFT	\$5.00	\$500.00	Budget
	Drum barrel, Lighted	50	EA	\$25.00	\$1,250.00	1 per 100'
	Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
	Arrow Board, Lighted	0	EA	\$1,000.00	\$0.00	
	SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$3,250	
LANDSCAPING						
	Topsoil surf., furnish, 2"	0	SY	\$3.00	\$0.00	No repairs needed
	Class "A" seeding	0	LB	\$20.00	\$0.00	No repairs needed
	Mulch Blanket	0	SY	\$2.50	\$0.00	No repairs needed
	SUBTOTAL - LANDSCAPING				\$0	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)						
	Rem HMA Driveway	275	SY	\$12.00	\$3,300.00	33 drives x 15' wide x 5' deep
	Rem concrete driveway	165	SY	\$15.00	\$2,475.00	33 drives x 15' wide x 3' deep
	HMA 36A (driveway)	60	Ton	\$125.00	\$7,500.00	33 drives x 15' wide x 5' deep
	6" nonreinf conc. driveway	165	SY	\$50.00	\$8,250.00	33 drives x 15' wide x 3' deep
	Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
	Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
	Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
	Topsoil Surf, furn, 2"	5250	SY	\$3.00	\$15,750.00	5,250' x 9' wide x 1/9
	Class "A" seeding	230	LB	\$20.00	\$4,600.00	220 lbs / acre
	Mulch Blanket	5250	SY	\$2.50	\$13,125.00	5,250' x 9' wide x 1/9
	Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
	Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
	SUBTOTAL - DRAINAGE IMPROVEMENTS				\$137,450	
MOBILIZATION AND MINOR TRAFFIC CONTROL						
	Mobilization, Max 3%	1	LS	\$11,603	\$11,603	
	Minor Traffic Control Devices, Max 3%	1	LS	\$11,603	\$11,603	
	SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$23,206	
SUBTOTAL CONSTRUCTION COST					\$272,521	
SUBTOTAL CONSTRUCTION COST					\$272,521	
CONSTRUCTION CONTINGENCY				15%	\$40,878	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION				15%	\$47,010	
TOTAL ESTIMATED COST					\$360,409	

Specific work items that ARE NOT included in this estimate include:

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Respectfully,
GIFFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

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6303 26 Mile Road, Suite 100
Washington Twp, MI 48094-3819
(586) 781-8950 Fax: (586) 781-8951



Local Road - Concrete Pavt Reconstruction PASER = 1, 2, 3 (POOR)

GW NO.: Promotional
DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes pavt removal, earth excavation, 10" aggregate base, and **5" of new asphalt** and drainage improvements

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
DEMOLITION						
	Rem conc. sidewalk	100	SY	\$12.00	\$1,200.00	Estimate 18 ea x 50 sft
	Rem HMA surface	220	SY	\$12.00	\$2,640.00	33 drives x 15' wide x 4' deep
	Rem concrete driveways	330	SY	\$15.00	\$4,950.00	33 drives x 15' wide x 6' deep
	Remove Concrete Road	11700	SY	\$10.00	\$117,000.00	5280 ft x 20' wide
	SUBTOTAL - DEMOLITION				\$125,790	
PAVEMENT CONDITIONING						
	Rem HMA patches		SY	\$15.00	\$0.00	
	Longitudinal joint repair, MDOT Det 7		LF	\$7.00	\$0.00	
	SUBTOTAL - PAVEMENT CONDITIONING				\$0	
EARTHWORK						
	Earth excavation	3260	CY	\$30.00	\$97,800.00	5280 x 20' wide x 10" deep x 1/27
	Subgrade undercutting Type II	130	CY	\$40.00	\$5,200.00	estimate 5% of road x 8" deep
	Stabilizing filter fabric (geoblanket)	11700	SY	\$2.50	\$29,250.00	5280 x 20' wide x 1/9
	SUBTOTAL - EARTHWORK				\$132,250	
SOIL EROSION SEDIMENT CONTROL						
	Inlet/CB filter	40	EA	\$110.00	\$4,400.00	estimate 40 per mile
	SUBTOTAL - EROSION CONTROL				\$4,400	
SANITARY SEWER						
	Adjust san structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - SANITARY SEWER				\$2,750	
WATER DISTRIBUTION						
	Adjust GV&W structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	Adjust water shutoff	2	EA	\$400.00	\$800.00	estimate 2 per mile
	SUBTOTAL - WATER DISTRIBUTION				\$3,550	
STORM SEWER						
	Adjust stm structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - STORM SEWER				\$2,750	
UNDERDRAIN						
	Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
	Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
	SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS						
	6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
	ADA Detectable Warnings	90	FT	\$40.00	\$3,600.00	18 ea x 5 ft
	SUBTOTAL - CURBS AND SIDEWALKS				\$9,900	
AGGREGATES AND SAND						
	10" aggr. Base	11700	SY	\$11.00	\$128,700.00	5280 x 20' wide x 1/9
	SUBTOTAL - AGGREGATES AND SAND				\$128,700	

ITEM WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT					
HMA, 3C (leveling)	1950	TN	\$95.00	\$185,250.00	3" thick
HMA, 5E1	1300	TN	\$100.00	\$130,000.00	2" thick
HMA, 36A (driveways, approaches)	50	TN	\$125.00	\$6,250.00	33 ea x 15' x 4' x 4" thick
Handpatching, 0 - 20 tons	0	TN	\$175.00	\$0.00	
SUBTOTAL - HOT MIX ASPHALT				\$321,500	
CONCRETE PAVEMENTS					
6" nonreinf Conc. driveway	330	SY	\$50.00	\$16,500.00	33 ea x 15' x 6' x 1/9
SUBTOTAL - CONCRETE PAVEMENT				\$16,500	
TRAFFIC CONTROL AND STRIPING					
Sign, Type __, temp	100	SFT	\$5.00	\$500.00	Budget
Drum barrel, Lighted	175	EA	\$25.00	\$4,375.00	1 per 50' + 1 per drive
Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
Arrow Board, Lighted	1	EA	\$1,000.00	\$1,000.00	Budget
SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$7,375	
LANDSCAPING					
Topsoil surf., furnish, 2"	3520	SY	\$3.00	\$10,560.00	3' wide each side of road
Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
Mulch Blanket	3520	SY	\$2.50	\$8,800.00	3' wide each side of road
SUBTOTAL - LANDSCAPING				\$22,560	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)					
Rem HMA Driveway	275	SY	\$12.00	\$3,300.00	33 drives x 15' wide x 5' deep
Rem concrete driveway	165	SY	\$15.00	\$2,475.00	33 drives x 15' wide x 3' deep
HMA 36A (driveway)	60	Ton	\$125.00	\$7,500.00	33 drives x 15' wide x 5' deep
6" nonreinf conc. driveway	165	SY	\$50.00	\$8,250.00	33 drives x 15' wide x 3' deep
Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
Topsoil Surf, furn, 2"	3500	SY	\$3.00	\$10,500.00	5,250' x 6' wide x 1/9
Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
Mulch Blanket	3500	SY	\$2.50	\$8,750.00	5,250' x 6' wide x 1/9
Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
SUBTOTAL - DRAINAGE IMPROVEMENTS				\$126,425	
MOBILIZATION AND MINOR TRAFFIC CONTROL					
Mobilization, Max 3%	1	LS	\$27,476	\$27,476	
Minor Traffic Control Devices, Max 3%	1	LS	\$27,476	\$27,476	
SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$54,951	
SUBTOTAL CONSTRUCTION COST				\$970,801	
SUBTOTAL CONSTRUCTION COST				\$970,801	
CONSTRUCTION CONTINGENCY			15%	\$145,620	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION			17%	\$189,792	
TOTAL ESTIMATED COST				\$1,306,213	

Specific work items that ARE NOT included in this estimate include:

It should be pointed out that since we have no control over the Contractor's method of determining prices, competitive bidding or market conditions, our opinion of the probable construction cost as provided for herein is made on the basis of experience and represents our best judgment as design professionals. We cannot guarantee that the final construction cost will not vary from this estimate.

Respectfully,
GIFFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

1025 E Maple, Suite 1200 Birmingham, MI 48009-6426 (248) 852-3100 Fax: (248) 852-6372	28 W. Adams, Suite 1200 Detroit, MI 48226-1609 (313) 962-4442 Fax: (313) 962-5068	6303 26 Mile Road, Suite 100 Washington Twp, MI 48094-3819 (586) 781-8950 Fax: (586) 781-8951
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Local Road - Concrete Pavt Reconstruction PASER = 1, 2, 3 (POOR)
MACHINE GRADING WITH EXISTING AGGREGATE BASE

GW NO.: Promotional
 DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes pavt removal, machine grading, and **5" of new asphalt** and drainage improvements

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
DEMOLITION						
	Rem conc. sidewalk	100	SY	\$12.00	\$1,200.00	Estimate 18 ea x 50 sft
	Rem HMA surface	220	SY	\$12.00	\$2,640.00	33 drives x 15' wide x 4' deep
	Rem concrete driveways	330	SY	\$15.00	\$4,950.00	33 drives x 15' wide x 6' deep
	Remove Concrete Road	11700	SY	\$10.00	\$117,000.00	5280 ft x 20' wide
	SUBTOTAL - DEMOLITION				\$125,790	
PAVEMENT CONDITIONING						
	Rem HMA patches		SY	\$15.00	\$0.00	
	Longitudinal joint repair, MDOT Det 7		LF	\$7.00	\$0.00	
	SUBTOTAL - PAVEMENT CONDITIONING				\$0	
EARTHWORK						
	Earth excavation	650	CY	\$30.00	\$19,500.00	5280 x 20' wide x 2" average
	Subgrade undercutting Type II	130	CY	\$40.00	\$5,200.00	estimate 5% of road x 8" deep
	Stabilizing filter fabric (geoblanket)	0	SY	\$2.50	\$0.00	
	Machine grading	52	STA	\$500.00	\$26,000.00	
	SUBTOTAL - EARTHWORK				\$50,700	
SOIL EROSION SEDIMENT CONTROL						
	Inlet/CB filter	40	EA	\$110.00	\$4,400.00	estimate 40 per mile
	SUBTOTAL - EROSION CONTROL				\$4,400	
SANITARY SEWER						
	Adjust san structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - SANITARY SEWER				\$2,750	
WATER DISTRIBUTION						
	Adjust GV&W structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	Adjust water shutoff	2	EA	\$400.00	\$800.00	estimate 2 per mile
	SUBTOTAL - WATER DISTRIBUTION				\$3,550	
STORM SEWER						
	Adjust stm structure cover, case I	5	EA	\$550.00	\$2,750.00	estimate 5 per mile
	SUBTOTAL - STORM SEWER				\$2,750	
UNDERDRAIN						
	Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
	Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
	SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS						
	6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
	ADA Detectable Warnings	90	FT	\$40.00	\$3,600.00	18 ea x 5 ft
	SUBTOTAL - CURBS AND SIDEWALKS				\$9,900	
AGGREGATES AND SAND						
	Supplemental aggr. Base, 2"	1240	Ton	\$30.00	\$37,200.00	5280 x 20' wide x 2" average
	SUBTOTAL - AGGREGATES AND SAND				\$37,200	

ITEM WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT					
HMA, 3C (leveling)	1950	TN	\$95.00	\$185,250.00	3" thick
HMA, 5E1	1300	TN	\$100.00	\$130,000.00	2" thick
HMA, 36A (driveways, approaches)	50	TN	\$125.00	\$6,250.00	33 ea x 15' x 4' x 4" thick
Handpatching, 0 - 20 tons	0	TN	\$175.00	\$0.00	
SUBTOTAL - HOT MIX ASPHALT				\$321,500	
CONCRETE PAVEMENTS					
6" nonreinf Conc. driveway	330	SY	\$50.00	\$16,500.00	33 ea x 15' x 6' x 1/9
SUBTOTAL - CONCRETE PAVEMENT				\$16,500	
TRAFFIC CONTROL AND STRIPING					
Sign, Type __, temp	100	SFT	\$5.00	\$500.00	Budget
Drum barrel, Lighted	175	EA	\$25.00	\$4,375.00	1 per 50' + 1 per drive
Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
Arrow Board, Lighted	1	EA	\$1,000.00	\$1,000.00	Budget
SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$7,375	
LANDSCAPING					
Topsoil surf., furnish, 2"	3520	SY	\$3.00	\$10,560.00	3' wide each side of road
Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
Mulch Blanket	3520	SY	\$2.50	\$8,800.00	3' wide each side of road
SUBTOTAL - LANDSCAPING				\$22,560	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)					
Rem HMA Driveway	275	SY	\$12.00	\$3,300.00	33 drives x 15' wide x 5' deep
Rem concrete driveway	165	SY	\$15.00	\$2,475.00	33 drives x 15' wide x 3' deep
HMA 36A (driveway)	60	Ton	\$125.00	\$7,500.00	33 drives x 15' wide x 5' deep
6" nonreinf conc. driveway	165	SY	\$50.00	\$8,250.00	33 drives x 15' wide x 3' deep
Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
Topsoil Surf, furn, 2"	3500	SY	\$3.00	\$10,500.00	5,250' x 6' wide x 1/9
Class "A" seeding	160	LB	\$20.00	\$3,200.00	220 lbs / acre
Mulch Blanket	3500	SY	\$2.50	\$8,750.00	5,250' x 6' wide x 1/9
Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
SUBTOTAL - DRAINAGE IMPROVEMENTS				\$126,425	
MOBILIZATION AND MINOR TRAFFIC CONTROL					
Mobilization, Max 3%	1	LS	\$22,284	\$22,284	
Minor Traffic Control Devices, Max 3%	1	LS	\$22,284	\$22,284	
SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$44,568	
SUBTOTAL CONSTRUCTION COST				\$787,368	
SUBTOTAL CONSTRUCTION COST				\$787,368	
CONSTRUCTION CONTINGENCY			15%	\$118,105	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION			17%	\$153,930	
TOTAL ESTIMATED COST				\$1,059,404	

Specific work items that ARE NOT included in this estimate include:

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Respectfully,
GIFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

1025 E Maple, Suite 1200 Birmingham, MI 48009-6426 (248) 852-3100 Fax: (248) 852-6372	28 W. Adams, Suite 1200 Detroit, MI 48226-1609 (313) 962-4442 Fax: (313) 962-5068	6303 26 Mile Road, Suite 100 Washington Twp, MI 48094-3819 (586) 781-8950 Fax: (586) 781-8951
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REPAIR METHOD 2C

Local Road - Heavy Concrete Pavt Patching PASER = 4,5, (FAIR)

GW NO.: Promotional

DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes pavt removal, earth excavation, 4" aggregate base, and 8" thick concrete patch and drainage improvements

ITEM	WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
DEMOLITION						
	Rem conc. sidewalk	100	SY	\$12.00	\$1,200.00	Estimate 18 ea x 50 sft
	Rem HMA surface	0	SY	\$12.00	\$0.00	
	Rem concrete driveways	0	SY	\$15.00	\$0.00	
	Remove Concrete Road	2925	SY	\$25.00	\$73,125.00	Estimate 25% of road (5280 x 20')
	SUBTOTAL - DEMOLITION				\$74,325	
EARTHWORK						
	Earth excavation	325	CY	\$30.00	\$9,750.00	25% of road x 4" deep x 1/27
	Subgrade undercutting Type II	0	CY	\$40.00	\$0.00	
	Stabilizing filter fabric (geoblanket)	0	SY	\$2.50	\$0.00	
	SUBTOTAL - EARTHWORK				\$9,750	
SOIL EROSION SEDIMENT CONTROL						
	Inlet/CB filter	0	EA	\$110.00	\$0.00	Not Required
	SUBTOTAL - EROSION CONTROL				\$0	
SANITARY SEWER						
	Adjust san structure cover, case I	0	EA	\$550.00	\$0.00	Not Required
	SUBTOTAL - SANITARY SEWER				\$0	
WATER DISTRIBUTION						
	Adjust GV&W structure cover, case I	0	EA	\$550.00	\$0.00	Not required
	Adjust water shutoff	0	EA	\$400.00	\$0.00	Not required
	SUBTOTAL - WATER DISTRIBUTION				\$0	
STORM SEWER						
	Adjust stm structure cover, case I	0	EA	\$550.00	\$0.00	Not required
	SUBTOTAL - STORM SEWER				\$0	
UNDERDRAIN						
	Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
	Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
	SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS						
	6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
	ADA Detectable Warnings	90	FT	\$40.00	\$3,600.00	18 ea x 5 ft
	SUBTOTAL - CURBS AND SIDEWALKS				\$9,900	
AGGREGATES AND SAND						
	4" aggr. Base	2925	SY	\$10.00	\$29,250.00	25% of road
	SUBTOTAL - AGGREGATES AND SAND				\$29,250	

ITEM WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT					
HMA, 3C (leveling)	0	TN	\$100.00	\$0.00	
HMA, 5E1	0	TN	\$105.00	\$0.00	
HMA, 36A (driveways, approaches)	0	TN	\$125.00	\$0.00	
Handpatching, 0 - 20 tons	0	TN	\$175.00	\$0.00	
SUBTOTAL - HOT MIX ASPHALT				\$0	
CONCRETE PAVEMENTS					
Pavt Repr. Conc, 8" non-reinforced	2925	SY	\$70.00	\$204,750.00	25% of road
6" nonreinf Conc. driveway		SY	\$56.00	\$0.00	
Lane Ties, Epoxy Coated	1000	EA	\$5.00	\$5,000.00	24" on-center
SUBTOTAL - CONCRETE PAVEMENT				\$209,750	
TRAFFIC CONTROL AND STRIPING					
Sign, Type _ temp	100	SFT	\$5.00	\$500.00	Budget
Drum barrel, Lighted	200	EA	\$25.00	\$5,000.00	Estimated 4 to 6 per patch
Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
Arrow Board, Lighted		EA	\$1,000.00	\$0.00	
SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$7,000	
LANDSCAPING					
Topsoil surf., furnish, 2"	300	SY	\$3.00	\$900.00	1' wide adjacent to patch
Class "A" seeding	15	LB	\$20.00	\$300.00	220 lbs / acre
Mulch Blanket	300	SY	\$2.50	\$750.00	1' wide each side of road
SUBTOTAL - LANDSCAPING				\$1,950	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)					
Rem HMA Driveway	495	SY	\$12.00	\$5,940.00	33 drives x 15' wide x 9' deep
Rem concrete driveway	495	SY	\$15.00	\$7,425.00	33 drives x 15' wide x 9' deep
HMA 36A (driveway)	110	Ton	\$125.00	\$13,750.00	33 drives x 15' wide x 9' deep
6" nonreinf conc. driveway	495	SY	\$50.00	\$24,750.00	33 drives x 15' wide x 9' deep
Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
Topsoil Surf, furn, 2"	5250	SY	\$3.00	\$15,750.00	5,250' x 9' wide x 1/9
Class "A" seeding	230	LB	\$20.00	\$4,600.00	220 lbs / acre
Mulch Blanket	5250	SY	\$2.50	\$13,125.00	5,250' x 9' wide x 1/9
Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
SUBTOTAL - DRAINAGE IMPROVEMENTS				\$167,790	
MOBILIZATION AND MINOR TRAFFIC CONTROL					
Mobilization, Max 3%	1	LS	\$15,633	\$15,633	
Minor Traffic Control Devices, Max 3%	1	LS	\$15,633	\$15,633	
SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$31,267	
SUBTOTAL CONSTRUCTION COST				\$552,382	
SUBTOTAL CONSTRUCTION COST				\$552,382	
CONSTRUCTION CONTINGENCY			15%	\$82,857	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION			15%	\$95,286	
TOTAL ESTIMATED COST				\$730,525	

Specific work items that ARE NOT included in this estimate include:

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Respectfully,
GIFFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

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REPAIR METHOD 2D

Local Road - Light Concrete Pavt Patching PASER = 6,7 (GOOD)

GW NO.: Promotional

DATE: July 8, 2019

PRELIMINARY CONSTRUCTION COST ESTIMATE

Assume 1 mile of roads at 20' wide. Includes pavt removal, earth excavation, 4" aggregate base, and 8" **thick concrete patch** and drainage improvements

ITEM WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
DEMOLITION					
Rem conc. sidewalk	100	SY	\$12.00	\$1,200.00	Estimate 18 ea x 50 sft
Rem HMA surface	0	SY	\$12.00	\$0.00	
Rem concrete driveways	0	SY	\$15.00	\$0.00	
Remove Concrete Road	1760	SY	\$25.00	\$44,000.00	Estimate 15% of road (5280 x 20')
SUBTOTAL - DEMOLITION				\$45,200	
PAVEMENT CONDITIONING					
Rem HMA patches		SY	\$15.00	\$0.00	
Longitudinal joint repair, MDOT Det 7		LF	\$7.00	\$0.00	
SUBTOTAL - PAVEMENT CONDITIONING				\$0	
EARTHWORK					
Earth excavation	200	CY	\$30.00	\$6,000.00	15% of road x 4" deep x 1/27
Subgrade undercutting Type II	0	CY	\$40.00	\$0.00	
Stabilizing filter fabric (geoblanket)	0	SY	\$2.50	\$0.00	
SUBTOTAL - EARTHWORK				\$6,000	
SOIL EROSION SEDIMENT CONTROL					
Inlet/CB filter	0	EA	\$110.00	\$0.00	Not Required
SUBTOTAL - EROSION CONTROL				\$0	
SANITARY SEWER					
Adjust san structure cover, case I	0	EA	\$550.00	\$0.00	Not Required
SUBTOTAL - SANITARY SEWER				\$0	
WATER DISTRIBUTION					
Adjust GV&W structure cover, case I	0	EA	\$550.00	\$0.00	Not required
Adjust water shutoff	0	EA	\$400.00	\$0.00	Not required
SUBTOTAL - WATER DISTRIBUTION				\$0	
STORM SEWER					
Adjust stm structure cover, case I	0	EA	\$550.00	\$0.00	Not required
SUBTOTAL - STORM SEWER				\$0	
UNDERDRAIN					
Edgedrain, 6"	800	LF	\$8.00	\$6,400.00	estimate 20' per CB (40 x 20)
Dr Structure Tap, 6"	40	EA	\$125.00	\$5,000.00	
SUBTOTAL - UNDERDRAIN				\$11,400	
CURB AND SIDEWALKS					
6" Sidewalk ramp	900	SF	\$7.00	\$6,300.00	18 ea x 50 sft
ADA Detectable Warnings	90	FT	\$40.00	\$3,600.00	18 ea x 5 ft
SUBTOTAL - CURBS AND SIDEWALKS				\$9,900	
AGGREGATES AND SAND					
4" aggr. Base	1760	SY	\$10.00	\$17,600.00	15% of road
SUBTOTAL - AGGREGATES AND SAND				\$17,600	

ITEM WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	TOTAL	COMMENTS
HOT MIX ASPHALT PAVEMENT					
HMA, 3C (leveling)	0	TN	\$100.00	\$0.00	
HMA, 5E1	0	TN	\$105.00	\$0.00	
HMA, 36A (driveways, approaches)	0	TN	\$125.00	\$0.00	
Handpatching, 0 - 20 tons	0	TN	\$175.00	\$0.00	
SUBTOTAL - HOT MIX ASPHALT				\$0	
CONCRETE PAVEMENTS					
Pavt Repr. Conc, 8" non-reinforced	1760	SY	\$70.00	\$123,200.00	15% of road
6" nonreinf Conc. driveway		SY	\$56.00	\$0.00	
Lane Ties, Epoxy Coated	700	EA	\$5.00	\$3,500.00	24" on-center
SUBTOTAL - CONCRETE PAVEMENT				\$126,700	
TRAFFIC CONTROL AND STRIPING					
Sign, Type _ temp	100	SFT	\$5.00	\$500.00	Budget
Drum barrel, Lighted	150	EA	\$25.00	\$3,750.00	Estimated 4 to 6 per patch
Barricade, type III, Lighted	10	EA	\$150.00	\$1,500.00	2 per block, estimate 10
Arrow Board, Lighted		EA	\$1,000.00	\$0.00	
SUBTOTAL TRAFFIC CONTROL AND STRIPING				\$5,750	
LANDSCAPING					
Topsoil surf., furnish, 2"	200	SY	\$3.00	\$600.00	1' wide adjacent to patch
Class "A" seeding	15	LB	\$20.00	\$300.00	220 lbs / acre
Mulch Blanket	200	SY	\$2.50	\$500.00	1' wide each side of road
SUBTOTAL - LANDSCAPING				\$1,400	
DRAINAGE IMPROVEMENTS (NET ADDITIONAL COST)					
Rem HMA Driveway	495	SY	\$12.00	\$5,940.00	33 drives x 15' wide x 9' deep
Rem concrete driveway	495	SY	\$15.00	\$7,425.00	33 drives x 15' wide x 9' deep
HMA 36A (driveway)	110	Ton	\$125.00	\$13,750.00	33 drives x 15' wide x 9' deep
6" nonreinf conc. driveway	495	SY	\$50.00	\$24,750.00	33 drives x 15' wide x 9' deep
Culvert, Rem, less than 24" dia	33	EA	\$275.00	\$9,075.00	
Culv, 8" CMP	825	FT	\$25.00	\$20,625.00	33 drives x 25 ft average
Ditching, Hauling and Grading	5250	FT	\$7.00	\$36,750.00	Assumes 50% requires improvements
Topsoil Surf, furn, 2"	5250	SY	\$3.00	\$15,750.00	5,250' x 9' wide x 1/9
Class "A" seeding	230	LB	\$20.00	\$4,600.00	220 lbs / acre
Mulch Blanket	5250	SY	\$2.50	\$13,125.00	5,250' x 9' wide x 1/9
Cleaning existing culverts	1000	FT	\$7.00	\$7,000.00	Estimated (culverts across properties)
Misc Sewer extensions	300	FT	\$30.00	\$9,000.00	Budget
SUBTOTAL - DRAINAGE IMPROVEMENTS				\$167,790	
MOBILIZATION AND MINOR TRAFFIC CONTROL					
Mobilization, Max 3%	1	LS	\$11,752	\$11,752	
Minor Traffic Control Devices, Max 3%	1	LS	\$11,752	\$11,752	
SUBTOTAL - MOBILIZATION AND MINOR TRAFFIC CONTROL				\$23,504	
SUBTOTAL CONSTRUCTION COST				\$415,244	
SUBTOTAL CONSTRUCTION COST				\$415,244	
CONSTRUCTION CONTINGENCY			15%	\$62,287	
SUBTOTAL ENGINEERING, BIDDING, INSPECTION			15%	\$71,630	
TOTAL ESTIMATED COST				\$549,161	

Specific work items that ARE NOT included in this estimate include:

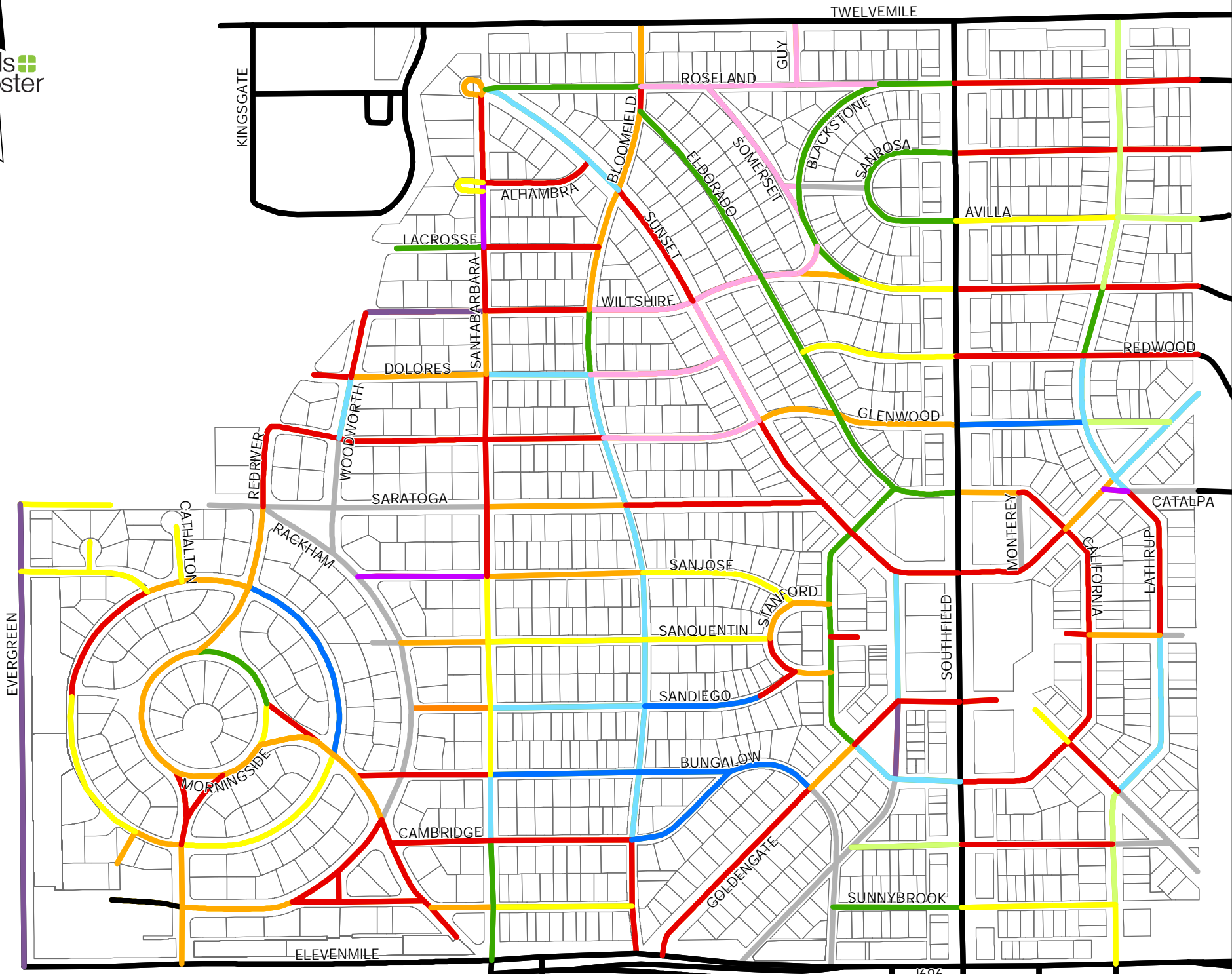
It should be pointed out that since we have no control over the Contractor's method of determining prices, competitive bidding or market conditions, our opinion of the probable construction cost as provided for herein is made on the basis of experience and represents our best judgment as design professionals. We cannot guarantee that the final construction cost will not vary from this estimate.

Respectfully,
GIFFELS-WEBSTER ENGINEERS, INC.

Estimate Prepared By: Scott A. Ringler, PE
Date: July 8, 2019

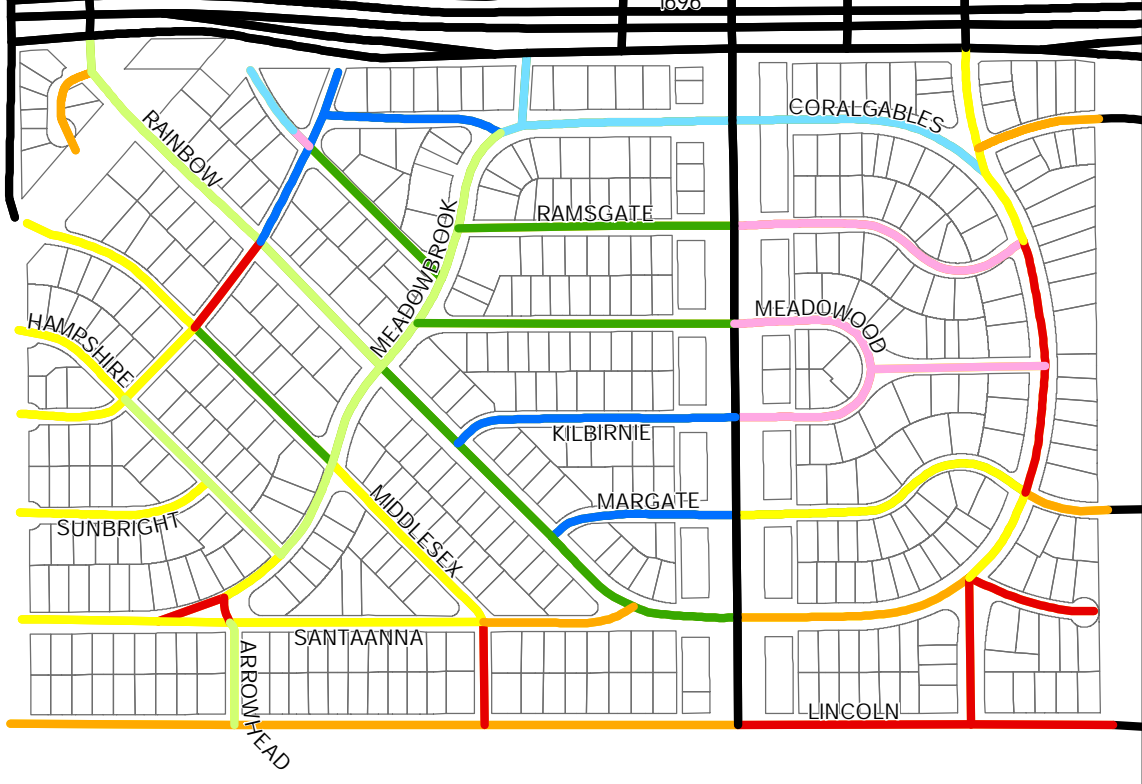
1025 E Maple, Suite 1200 Birmingham, MI 48009-6426 (248) 852-3100 Fax: (248) 852-6372	28 W. Adams, Suite 1200 Detroit, MI 48226-1609 (313) 962-4442 Fax: (313) 962-5068	6303 26 Mile Road, Suite 100 Washington Twp, MI 48094-3819 (586) 781-8950 Fax: (586) 781-8951
---	---	---

Lathrup Village Roads



Pavement Condition Local Roads - 2017

- Gravel
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- Not Rated by Giffels Webster



giffels webster
 Engineers
 Surveyors
 Planners
 Landscape Architects
 GIS Specialists

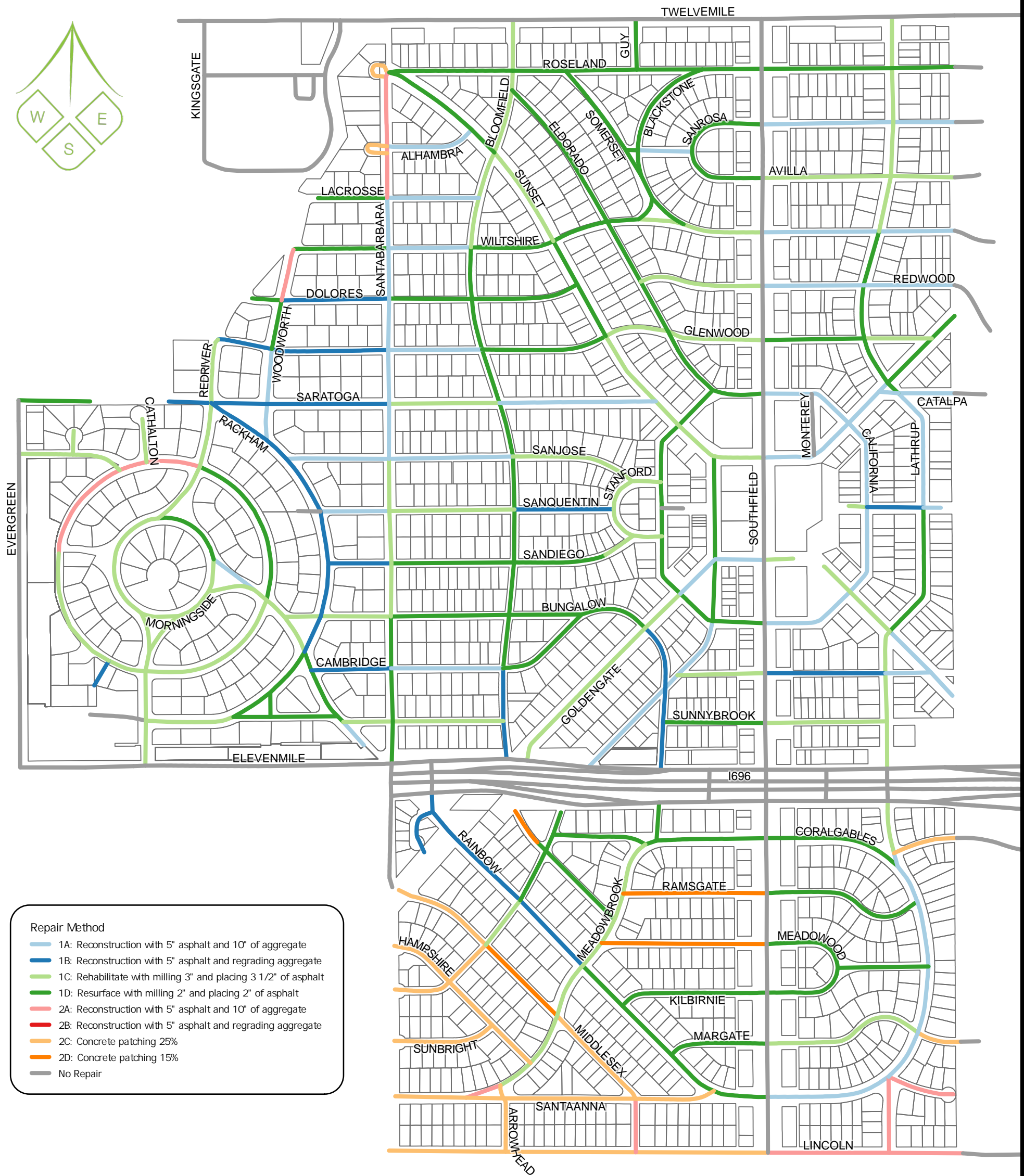
1025 E. Maple Road, Suite 100
 Birmingham, MI 48009
 P: (248) 852.3100
 F: (248) 852.6372
 www.giffelswebster.com
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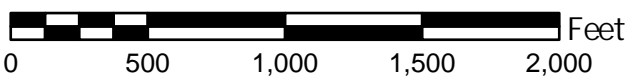
Developed For:
 27400 Southfield Road
 Lathrup Village
 Oakland County
 Michigan

Date:	06.06.2019
Scale:	1 inch = 700 feet
Project:	15850.52
Printing Scale:	11" x 17"

Lathrup Village 2019 Repair Methods



- Repair Method**
- 1A: Reconstruction with 5" asphalt and 10" of aggregate
 - 1B: Reconstruction with 5" asphalt and regrading aggregate
 - 1C: Rehabilitate with milling 3" and placing 3 1/2" of asphalt
 - 1D: Resurface with milling 2" and placing 2" of asphalt
 - 2A: Reconstruction with 5" asphalt and 10" of aggregate
 - 2B: Reconstruction with 5" asphalt and regrading aggregate
 - 2C: Concrete patching 25%
 - 2D: Concrete patching 15%
 - No Repair



1025 E. Maple Road, Suite 100
 Birmingham, MI 48009
 P: (248) 852.3100
 F: (313) 962.5068

Engineers
 Surveyors
 Planners
 Landscape Architects
 GIS Specialists

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\$21,000,000
COUNTY OF OAKLAND, STATE OF MICHIGAN
UNLIMITED TAX GENERAL OBLIGATION BONDS

**SCHEDULE OF DEBT SERVICE AND MILLAGE REQUIREMENTS
15 YEAR BOND ISSUES**

Fiscal Year Beginning	2020 BONDS				2022 BONDS				2024 BONDS				TOTAL		TOTAL MILLAGE REQ.		TOTAL	
	Principal Due April 1 NEXT	Interest Due October 1	Interest Due April 1 NEXT	Principal Due April 1 NEXT	Interest Due October 1	Interest Due April 1 NEXT	Principal Due April 1 NEXT	Interest Due October 1	Interest Due April 1 NEXT	Principal Due April 1 NEXT	Interest Due October 1	Interest Due April 1 NEXT	Principal Due April 1 NEXT	Interest Due October 1	Principal & Interest Requirements	Taxable Value in 1,000		July 1 Millage
2020	\$ 370,000	\$ 122,500	\$ 122,500	\$ 615,000	\$ 140,000	\$ 140,000	\$ 325,000	\$ 140,000	\$ 140,000	\$ 325,000	\$ 140,000	\$ 140,000	\$ 325,000	\$ 140,000	\$ 615,000	\$ 148,076	4.228%	\$ 7,000,000
2021	320,000	109,465	109,465	538,925	133,500	133,500	295,000	133,500	133,500	295,000	133,500	133,500	295,000	133,500	538,925	156,622	4.228%	12,210,000
2022	340,000	103,863	103,863	547,725	126,500	126,500	275,000	126,500	126,500	275,000	126,500	126,500	275,000	126,500	547,725	166,622	4.228%	13,265,000
2023	370,000	97,913	97,913	568,825	117,500	117,500	225,000	117,500	117,500	225,000	117,500	117,500	225,000	117,500	568,825	172,882	4.228%	14,210,000
2024	425,000	84,963	84,963	594,925	107,500	107,500	175,000	107,500	107,500	175,000	107,500	107,500	175,000	107,500	594,925	181,634	4.228%	15,165,000
2025	425,000	70,088	70,088	565,175	102,000	102,000	150,000	102,000	102,000	150,000	102,000	102,000	150,000	102,000	565,175	181,634	4.228%	16,120,000
2026	425,000	62,650	62,650	575,300	95,500	95,500	125,000	95,500	95,500	125,000	95,500	95,500	125,000	95,500	575,300	181,634	4.228%	17,075,000
2027	425,000	54,775	54,775	589,550	89,000	89,000	100,000	89,000	89,000	100,000	89,000	89,000	100,000	89,000	589,550	181,634	4.228%	18,030,000
2028	425,000	46,150	46,150	675,300	81,500	81,500	75,000	81,500	81,500	75,000	81,500	81,500	75,000	81,500	675,300	181,634	4.228%	18,985,000
2029	425,000	34,913	34,913	694,825	65,500	65,500	50,000	65,500	65,500	50,000	65,500	65,500	50,000	65,500	694,825	181,634	4.228%	19,940,000
2030	425,000	22,338	22,338	729,675	50,000	50,000	25,000	50,000	50,000	25,000	50,000	50,000	25,000	50,000	729,675	181,634	4.228%	20,895,000
2031	425,000	-	-	-	30,000	30,000	-	30,000	30,000	-	30,000	30,000	-	30,000	-	226,836	4.228%	21,850,000
2032	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232,507	4.228%	22,805,000
2033	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232,507	4.228%	23,760,000
2034	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232,507	4.228%	24,715,000
2035	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232,507	4.228%	25,670,000
2036	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232,507	4.228%	26,625,000
2037	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232,507	4.228%	27,580,000
2038	425,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	232,507	4.228%	28,535,000
																Average		

2020 Bond Assumptions:
Bonds Dated: 04/01/2020
First Interest Payment: 10/01/2020
Number of Days: 180
Subsequent Interest Payment: 04/01/2021
Number of Days: 180
First Principal Payment: 04/01/2023
Principal Rate: 3.50%
2019 Taxable Value (in 1,000s): \$145,440
Growth Rate in Taxable Value: 2.50%

2022 Bond Assumptions:
Bonds Dated: 04/01/2022
First Interest Payment: 10/01/2022
Number of Days: 180
Subsequent Interest Payment: 04/01/2023
Number of Days: 180
First Principal Payment: 04/01/2025
Principal Rate: 4.00%
2019 Taxable Value (in 1,000s): \$145,440
Growth Rate in Taxable Value: 2.50%

2024 Bond Assumptions:
Bonds Dated: 04/01/2024
First Interest Payment: 10/01/2024
Number of Days: 180
Subsequent Interest Payment: 04/01/2025
Number of Days: 180
First Principal Payment: 04/01/2027
Principal Rate: 4.50%
2019 Taxable Value (in 1,000s): \$145,440
Growth Rate in Taxable Value: 2.50%

17000 Kercheval Ave., Suite 230, Grosse Pointe, Michigan 48230
PHONE: (313) 961-8222 FAX: (313) 961-8220

The information contained herein was derived from sources generally recognized as reliable and does not constitute an offer of securities. It is not intended to constitute an offer of securities in any state where such offer is prohibited by law. Some information may be summarized, and in no way intended to be a solicitation for orders.

\$71,300,000
COUNTY OF OAKLAND, STATE OF MICHIGAN
UNLIMITED TAX GENERAL OBLIGATION BONDS

**SCHEDULE OF DEBT SERVICE AND MILLAGE REQUIREMENTS
15 YEAR BOND ISSUES**

Fiscal Year Beginning	2020 BONDS				2022 BONDS				2024 BONDS				TOTAL		TOTAL MILLAGE REQ.		TOTAL
	Principal Due April 1 NEXT	Interest Due October 1	Interest Due April 1 NEXT	Principal & Interest Requirements	Principal Due April 1 NEXT	Interest Due October 1	Interest Due April 1 NEXT	Principal & Interest Requirements	Principal Due April 1 NEXT	Interest Due October 1	Interest Due April 1 NEXT	Principal & Interest Requirements	Principal & Interest Requirements	July 1 Millage	Taxable Value in 1,000	July 1 Millage	
2020	\$ 420,000	\$ 124,250	\$ 124,250	\$ 668,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 988,500	4.5964	\$ 145,440	4.5964	\$ 7,100,000
2021	320,000	109,463	109,463	538,925	375,000	142,000	142,000	659,000	195,000	74,000	74,000	1,127,000	4.5964	152,802	4.5964	13,365,000	
2022	340,000	103,863	103,863	547,725	400,000	134,500	134,500	669,000	186,622	156,622	156,622	1,212,250	4.5964	162,802	4.5964	12,660,000	
2023	370,000	97,913	97,913	568,825	420,000	126,500	126,500	690,000	164,551	164,551	164,551	1,488,325	4.5964	166,622	4.5964	12,660,000	
2024	370,000	91,438	91,438	552,875	225,000	122,000	122,000	469,000	168,665	168,665	168,665	1,530,750	4.5964	164,551	4.5964	18,300,000	
2025	425,000	84,963	84,963	594,925	225,000	117,500	117,500	460,000	172,882	172,882	172,882	1,555,025	4.5964	168,665	4.5964	17,510,000	
2026	425,000	77,488	77,488	575,000	225,000	117,500	117,500	460,000	168,665	168,665	168,665	1,555,025	4.5964	168,665	4.5964	17,510,000	
2027	425,000	70,013	70,013	565,175	225,000	117,500	117,500	460,000	168,665	168,665	168,665	1,555,025	4.5964	168,665	4.5964	17,510,000	
2028	425,000	62,538	62,538	552,500	225,000	117,500	117,500	460,000	168,665	168,665	168,665	1,555,025	4.5964	168,665	4.5964	17,510,000	
2029	450,000	62,650	62,650	575,300	325,000	102,000	102,000	529,000	186,175	186,175	186,175	1,670,375	4.5964	177,204	4.5964	15,765,000	
2030	550,000	54,775	54,775	659,550	325,000	95,500	95,500	516,000	186,175	186,175	186,175	1,670,375	4.5964	181,634	4.5964	14,815,000	
2031	585,000	45,150	45,150	675,300	375,000	89,000	89,000	563,000	186,175	186,175	186,175	1,670,375	4.5964	186,175	4.5964	13,750,000	
2032	625,000	34,913	34,913	694,825	400,000	81,500	81,500	583,000	186,175	186,175	186,175	1,670,375	4.5964	190,629	4.5964	12,635,000	
2033	625,000	27,438	27,438	675,300	400,000	74,000	74,000	574,000	186,175	186,175	186,175	1,670,375	4.5964	195,088	4.5964	11,520,000	
2034	705,000	12,338	12,338	725,675	400,000	65,500	65,500	531,000	186,175	186,175	186,175	1,670,375	4.5964	205,540	4.5964	9,715,000	
2035	-	-	-	-	1,375,000	30,000	30,000	1,405,000	215,906	215,906	215,906	1,977,325	4.5964	210,640	4.5964	7,260,000	
2036	-	-	-	-	1,500,000	30,000	30,000	1,560,000	221,303	221,303	221,303	2,024,275	4.5964	215,906	4.5964	5,595,000	
2037	-	-	-	-	-	-	-	-	226,836	226,836	226,836	2,024,275	4.5964	221,303	4.5964	3,815,000	
2038	-	-	-	-	-	-	-	-	232,507	232,507	232,507	2,053,425	4.5964	226,836	4.5964	1,985,000	
									Average	Average	Average	\$3,072,875	Average	Average	Average		

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Subsequent Interest Payment: 04/01/2021
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First Interest Payment: 10/01/2022
Number of Days: 180
Subsequent Interest Payment: 04/01/2023
Number of Days: 180
First Principal Payment: 04/01/2022
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Growth Rate in Taxable Value: 2.50%

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First Interest Payment: 10/01/2024
Number of Days: 180
Subsequent Interest Payment: 04/01/2025
Number of Days: 180
First Principal Payment: 04/01/2024
Principal Rate: 4.50%
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COUNCIL COMMUNICATION:

TO: Mayor Garrett and City Council Members
 FR: Sheryl L. Mitchell, City Administrator
 DA: July 22, 2019

RE: MOTION TO APPROVE AN AGREEMENT WITH LATHRUP SERVICES

The City of Lathrup Village contracts with Lathrup Services for the operation of the Department of Public Services. Historically, the contract is approved for a one (1) year extension. In approving the Fiscal Year 2019-20 Budget, Council approved an increase that reflects a four (4%) percent increase (\$13,075) and the addition of another staff person (\$56,000) and increase the scope of services that are provided.

CONTRACTUAL SERVICES	ACTUAL FY 17-18	BUDGETED FY 18-19	BUDGET FY 19-20	INCREASE (DECREASE)
General- Public Services	102,336	102,336	123,999	21,663
General- Refuse	-	-	0	0
Major Streets	52,853	52,853	64,019	11,166
Local Streets	52,853	52,853	64,019	11,166
Water	59,397	59,397	71,937	12,540
Sewer	59,397	59,397	71,937	12,540
General- Govt. Services-Insurance	0	0	0	0
TOTAL	326,836	326,836	395,911	69,075

The costs for the services are spread across various funds:

Local Road: 16.17%
 Major Roads: 16.17%
 Water 18.17%
 Sewer: 18.17%
 General 31.32%
 100.00%

Suggested Motion:

To Approve the Master Services Agreement with Lathrup Services LLC for the budgeted amount of \$395,911 authorize the Mayor to sign on behalf of the City.

Motion by _____, Seconded by _____,

Motion by _____, Seconded by _____,

SeeClickFix ***Case Studies***





Houston, TX

Cost Reduction for 311



Pinellas County, FL

A Regional Solution



Carbondale, IL

Managing Public Works



Detroit, MI

Driving Change with Data

Case Study : **Houston, TX**

As Assistant Director of 311, Frank Carmody had a seemingly impossible task: improve the service level in call centers while reducing cost. 311 had been a huge success for the Mayor's Office, but it came at a cost. Frank saw a solution in SeeClickFix — what he now calls a “force multiplier”.

Citizen Engagement



Service Management



311 Call Center

Houston receives more than 30,000 requests via SeeClickFix.

This saves call takers time, enabling them to spend more time on each call without increasing cost: what Frank calls the “force multiplier” of SeeClickFix.

Integration



311

Custom integration to Kana Lagan that maps all requests direct to Houston departments.

Data Analysis

ESRI

Case Study : **Pinellas County, FL**

County - municipal boundaries can be complex, or overlapping, with different services provided in different locations. Often citizens are left completely unaware of the role played by the County. To address this problem for Pinellas County, Michael Roiland used SeeClickFix to build an intelligent, multi-agency service plan — engaging surround municipalities to deploy a shared service.

Citizen Engagement



Request Collection

Multi-agency, geodynamic request collection.

Pinellas County has introduced St Pete, Pinellas Park, Treasure Island and Belleair to SeeClickFix.

Inspired by this model, Sarasota County is now using a similar approach.

Service Management



Request & Work

Pinellas County uses SeeClickFix to distribute request across the organization — managing internal communication and work management.

Data Analysis

Pinellas uses SeeClickFix data to conduct regular audits on service level and customer satisfaction.

Integration



Asset Management

Like many orgs, Pinellas is expanding use of Asset Management and is considering an integration into these systems.

Data Analysis

ESRI

Excel

Microsoft Power BI

Case Study : **Carbondale, IL**

As Carbondale Public Works directors, Sean Henry was responsible not just for the efficient utilization of his workforce, fleet, and city assets, he was also increasingly measured by his ability to improve citizen satisfaction.

Citizen Engagement



Request Collection

Mobile Apps and City Website submissions reduce phone calls and give improved location data and photos.

Call takers are able to add all inbound calls and walk-ins as well so everything is in the same place.

Service Management



Request & Work

Carbondale is using SeeClickFix for 100% of its Public Works workflow, including request, planned and ad hoc work.

Data Analysis

Having a record of the quantity and type of work performed helps Sean to report to council and build budgets.

Integration



Sean is able to use SeeClickFix from top to bottom without need for integration.

Asset management systems he has evaluated are too heavy and expensive for cities the size of Carbondale (20,000).

Data Analysis

Excel

Case Study : **City of Detroit, MI**

When Mike Duggan took over as Mayor, the City of Detroit was facing an historic bancruptcy. The City needed a quick, public win to prove that the City was on the rebound, but more importantly, it need to build trust and fix infrastructure as efficiently as possible.

Citizen Engagement



Request Collection

SeeClickFix whitelabel Android & iOS Apps are central asset to the “Improve Detroit” brand.

10,000 requests were submitted in the first 6 months.

Service Management



Request Management

After recovering from bankruptcy, SeeClickFix was an integral part of turnaround

Work Order Management

>80% of workflow is managed directly in SeeClickFix

Data Analysis

SeeClickFix reports are weekly status check for Mayor Duggan

Integration

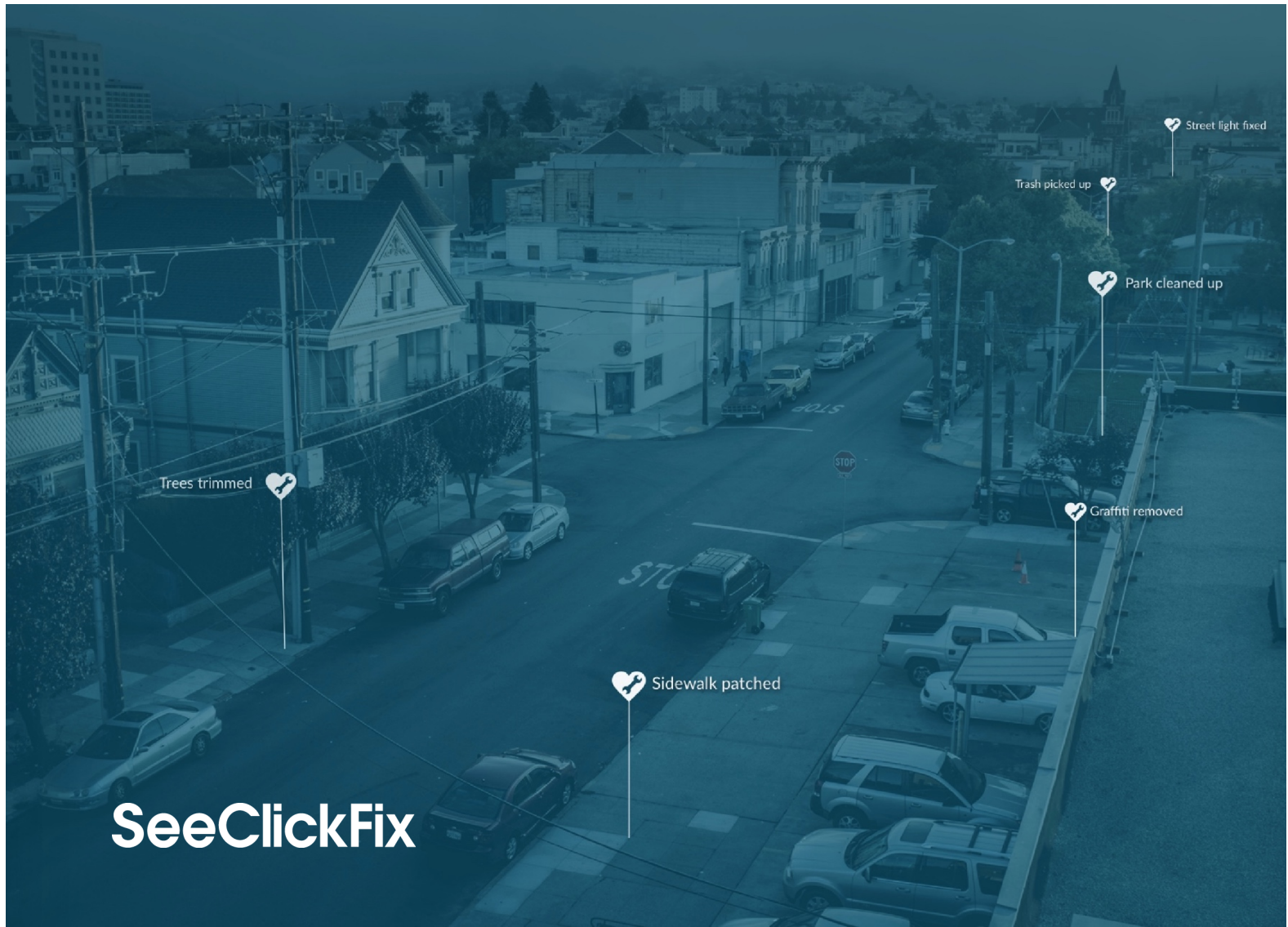


Asset Management

HP built custom integration to RightNow for DWSD

Data Analysis

Socrata
Tableau



Scope of Services Proposal

SeeClickFix Inc
770 Chapel Street
New Haven, CT 06510

Prepared for:

Lathrup Village, Michigan, City

Prepared by:

*Carlos Galo, AE
SeeClickFix, Inc.
carlos@seeclickfix.com
203-349-6615*



Scope of Services Proposal

SeeClickFix Inc
770 Chapel Street
New Haven, CT 06510

Prepared for:

Lathrup Village, Michigan, City

Prepared by:

Carlos Galo, AE
SeeClickFix, Inc.
carlos@seeclickfix.com
203-349-6615

Issue Date: 7/1/2019
Pricing Expires: 7/1/2019
30 days

RECURRING ANNUAL PRODUCT SUBSCRIPTIONS		Quantity
Request	Collect requests and manage workflow all in one place with intuitive web and mobile apps that maximize your efficiency and streamline operations.	1
TOTAL ANNUAL SUBSCRIPTION FEES		\$4,800.00

TOTAL FEES	
Initial Term of Contract	12 Months
DUE AT CONTRACT SIGNING	\$2,400.00

The undersigned agree to the following Terms and Conditions and have caused this Contract to be executed as of the date signed by the Customer which will be the Effective Date: <http://legal.seeclickfix.com/terms-and-conditions/>

SeeClickFix will invoice \$2,400 upon effective date. The remainder of the annual fee (\$2,400) will be invoiced the earlier of 65 days after the effective date or completion of implementation.

SeeClickFix, Inc.

Lathrup Village, Michigan, City

Name

Name

Title

Title

Date

Date

Signature

Signature

SeeClickFix's W9 information is available here: <https://drive.google.com/file/d/1Y7cgnYXQh2DUYMxMLEycZ5L3vazL7xO/view>