



# CITY of NOVI CITY COUNCIL

**Agenda Item 4  
August 13, 2012**

**SUBJECT:** Approval to award a construction contract for the 2012 Capital Preventative Maintenance road program to Cadillac Asphalt LLC, the low bidder, in the amount of \$159,869.

**SUBMITTING DEPARTMENT:** Department of Public Services, Engineering Division *RA*

**CITY MANAGER APPROVAL:** *[Signature]*

<b>EXPENDITURE REQUIRED</b>	<b>\$ 159,869.00</b>
<b>AMOUNT BUDGETED</b>	<b>\$ 0 (rollover \$137,500 remaining in FY11-12 budget)</b>
<b>APPROPRIATION REQUIRED</b>	<b>\$ 175,582 (including engineering as a rollover from FY11-12)</b>
<b>LINE ITEM NUMBER</b>	<b>202-202.00-866.500 (Major Roads)</b>

**BACKGROUND INFORMATION:**

One of the primary goals of the Department of Public Services' asset management program is the preservation of the City's roadways to prevent costly reconstruction. Some preventative and most routine maintenance including crack sealing, road patching, curb repairs, and shoulder grading are routinely performed by in-house DPS staff to help keep the good roads in good condition. However, a key component of road preservation is capital preventative maintenance, which is maintenance that is more resource-intensive but less costly than reconstruction. The objective of preventative maintenance is to preserve good quality roads using lower-cost rehabilitation techniques, rather than allowing the roads to deteriorate to a point that requires road reconstruction involving much more effort at a higher cost. Novi's preventative maintenance program, in conjunction with the other road programs, is intended to result in an overall improvement in the quality of the City's roadways and increase the overall PASER rating for the roadway network. The City Council approved a Capital Preventative Maintenance Program (CPM) as part of the FY11-12 budget to help improve the City's local and major roadways to limit further deterioration of existing pavement defects and extend the service life of the pavement. Preventative maintenance typically addresses discrete areas or short segments of streets containing relatively minor pavement defects.

The FY11-12 CPM program originally included both major and local roadways, but the local roadways were later included with the neighborhood road program once it was determined that cost savings could be realized by combining with the similar neighborhood road work. The following major roadway segments have been selected for this year's program:

Road Segment	From	To	PASER
Wixom Road	Island Lake Drive	City Limits	7
Eleven Mile	Meadowbrook Road	Limits of Asphalt	4

Three different asphalt pavement treatment methods were proposed in this year's program: 1) traditional 2" mill and overlay, 2) 1-1/2" mill and overlay with a fabric interlayer to resist reflective cracking, and 3) a fiber-reinforced membrane to resist reflective cracking followed by a double micro-surface application. Construction bids for the third method were originally solicited without the other treatment options in June 2012; however, only one bid was received. That bid was ultimately rejected because some of the unit prices for the work could not be justified. Therefore, the bid package was modified to re-bid a project that includes the original treatment method along with the more traditional treatment methods with the intent to get more interest in the project and to invite more contractors to bid on the project.

Five bids were received and opened on August 1, 2012 following a public bid solicitation period. The lowest bidder is Cadillac Asphalt. Cadillac's bid is recommended as being in the best interest of the City as it is responsive (i.e., Cadillac has complied with all requirements of the bidding instructions) and it is the lowest price for the selected option. (SDA's award recommendation letter including the bid tabulation dated August 6, 2012 is attached.) A summary of the five bids is as follows:

<b>Contractor</b>	<b>OPTION 1 2" Mill/Overlay</b>	<b>OPTION 2 1.5" Mill/Overlay with Fabric</b>	<b>OPTION 3 Fiber-Reinforced Overlay with Micro-surface</b>
Cadillac Asphalt	\$144,692.00	<b>\$164,789.00</b>	No Bid
Florence Cement	\$158,232.50	\$168,344.50	No Bid
Ajax Paving	\$178,212.00	\$202,379.00	No Bid
Pavex Corp	\$202,972.00	No Bid	No Bid
Strawser Construction	No Bid	No Bid	\$174,952.00

\*Crew Days are included to compare bids, but are not included in the award.

After reviewing the bids received, Option 2 is being recommended. This rehabilitation treatment method involving a 1-1/2" mill and overlay combined with a fabric interlayer placed within the asphalt to resist reflective cracking is expected to yield the best long-term performance for this pavement. This type of fabric interlayer is an emerging technology being used more frequently in pavement cross-sections to resist cracking and provide a waterproof barrier within the pavement, ultimately extending the service life of the pavement.

This project was included in the FY2011-12 Capital Improvement Program (CIP) in the budgeted amount of \$150,000 for construction and engineering, of which \$9,947 was awarded for design engineering, \$159,869 is now being recommended for award to Cadillac for construction, and \$15,712.80 is also recommended for award to SDA for construction engineering services (a separate item on this agenda) for total contract awards in the amount of \$185,528.80.

Construction is scheduled to begin in fall 2012 and completion is anticipated this construction season.

**RECOMMENDED ACTION:** Approval to award a construction contract for the 2012 Capital Preventative Maintenance road program to Cadillac Asphalt LLC, the low bidder, in the amount of \$159,869.

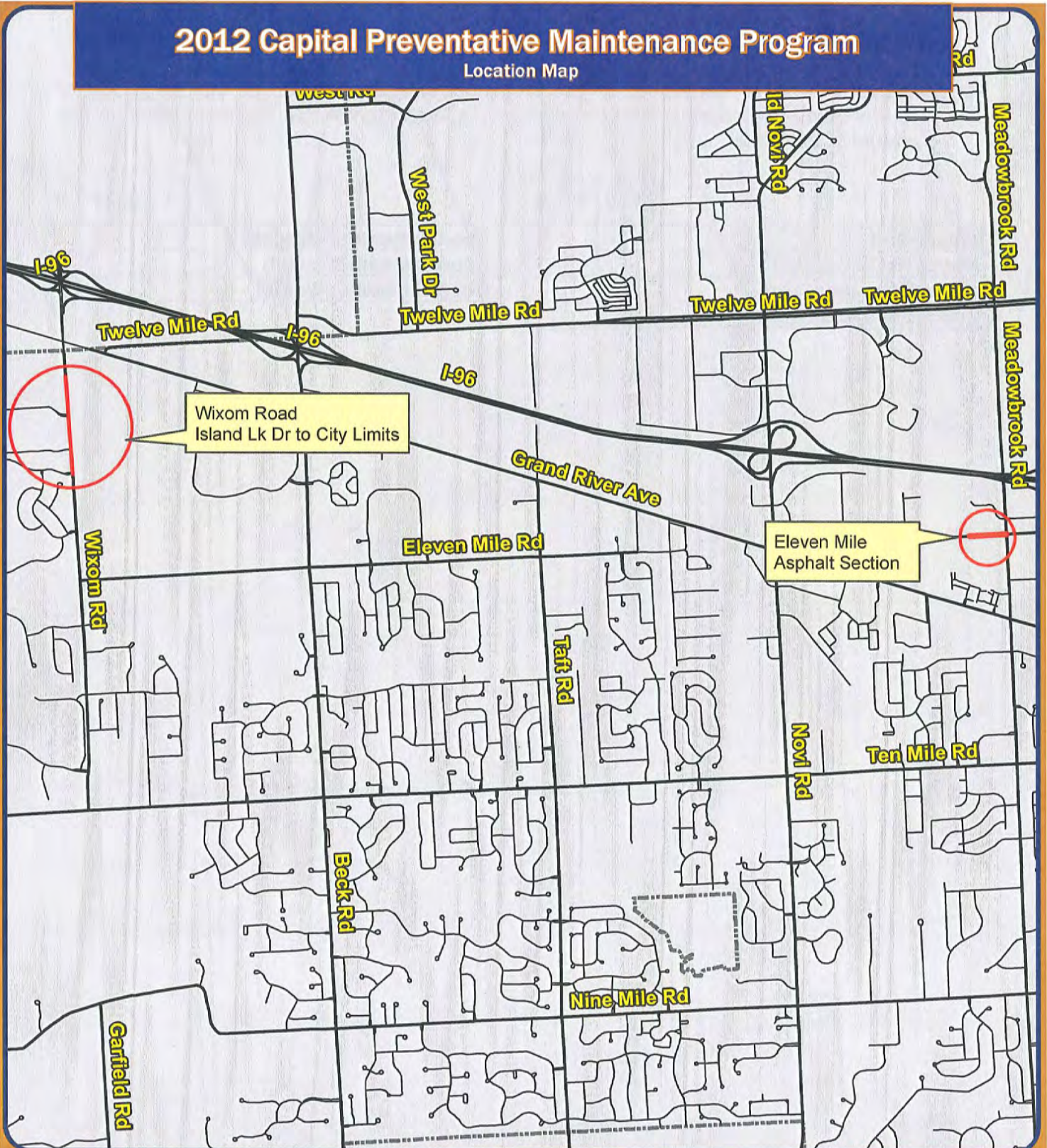
	1	2	Y	N
Mayor Galt				
Mayor Pro Tem Staudt				
Council Member Casey				
Council Member Fischer				

	1	2	Y	N
Council Member Margolis				
Council Member Mutch				
Council Member Wrobel				



# 2012 Capital Preventative Maintenance Program

Location Map



Map Author: Croy  
 Date: 7/25/12  
 Project: 2012 CPM  
 Version #: v2.0



**MAP INTERPRETATION NOTICE**

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.



1 inch = 3,000 feet



**City of Novi**  
 Engineering Division  
 Department of Public Services  
 26300 Delwal Drive  
 Novi, MI 48375  
 cityofnovi.org





August 6, 2012

Mr. Benjamin Croy, PE, Civil Engineer  
City of Novi  
26300 Lee BeGole Drive  
Novi, Michigan 48375

Re: **Recommendation for Award**  
2012 Major Road CPM – 11 Mile and Wixom Road  
SDA Project No.: NV12-001

Dear Mr. Croy:

On August 1, 2012 at 3:00 p.m. construction bids were opened and publicly read at the City of Novi Civic Center for the 2012 Major Roads CPM Project. The proposed work includes pavement rehabilitation on 11 Mile Road just west of Meadowbrook, and Wixom Road from Island Lake Drive to south of Grand River. Both of these roads have hot-mix asphalt (HMA) over an engineered gravel base. A summary of the project, bids received, evaluation of bids, and recommendations are included in this letter.

Both of the roadway sections are in fair to good condition, with Wixom Road having been fully reconstructed in 2002, and 11 Mile Road in 2007. However, both roads are exhibiting cracking which allows water to permeate into the gravel base, reducing stability, and ultimately more cracking and surface distress. Primary goals of the project were rehabilitation of the surface of the pavement, minimizing future maintenance, and extending the life of the overall pavement section (gravel base through top surfacing).

Bidder's were requested to submit bids on one or more of three proposed rehabilitation options, summarized as follows:

<u>Option</u>	<u>Description</u>
Option #1	Mill 2-inches and overlay 2-inches
Option #2	Mill 1.5-inches, place fabric interlayer, overlay 1.5-inches
Option #3	Place sprayed fiber-reinforced membrane, and two course micro-surfacing

The proposed options were developed to be roughly equivalent alternatives, with pro's and con's for each. Option #2 and #3 include placing a layer designed to help prevent existing cracks from reflecting through to the finished surface, reducing the formation of new cracks, and to block water from entering the gravel base. The layer in Option #2 is a non-woven fabric which is sprayed with asphalt prior to paving, and the layer in Option #3 is a sprayed material which includes fiberglass fibers for strength. Option #1 is a traditional "mill and fill" operation which would improve the surface, but would not be expected to reduce future cracking or maintenance requirements.

The City Clerk's office received five (5) sealed bids for this project, with each bidder submitting on either one or two of the options:

<u>Option</u>	<u>Bids</u>	<u>Low Bidder</u>	<u>Total Price</u>	<u>Estimated Price</u>
Option #1	4	Cadillac Asphalt	\$144,692.00	\$166,810.00
Option #2	3	Cadillac Asphalt	\$164,789.00	\$187,885.00
Option #3	1	Strawser Const.	\$174,952.00	\$166,180.00

Engineering Consultants

Infrastructure • Land Development • Surveying



Please see the included Bid Tabulation for detailed results for each option and bidder. In general, HMA paving prices were favorable and lead to lower than expected pricing for Options #1 and #2.

**It is our recommendation that the project be awarded to the low bidder for Option #2, Cadillac Asphalt, LLC, for the 2012 Major Roads CPM project in the amount of \$159,869.00, which is the total bid of \$164,789.00 minus \$4,920.00 for crew days bid.**

While Option #2 is 14% higher than Option #1, Spalding DeDecker Associates, Inc. (SDA) recommends that Option #2 be awarded as it has an apparent higher cost-to-benefit ratio, supported by the following:

- The interlayer will help prevent existing cracks from propagating to the finished surface, and will help prevent new cracks from forming in the surface requiring reduced maintenance.
- If cracks do appear and are not sealed quickly, the interlayer will resist water migration under the HMA surface and the resulting freeze-thaw action and potholes.
- The proposed fabric interlayer will provide additional structural integrity to the road section, with the equivalent load distribution of 1-inch of HMA thickness within the overall section. If Option #1 had called for 2.5-inches of mill and overlay, the price would be approximately the same as Option #2, but without the crack-reducing benefit.
- The life of the wearing course should be extended 3-5 years with routine maintenance.

The recommended alternative should reduce maintenance requirements, but it will not eliminate them. Routine crack sealing should still be carried out on an annual basis.

For Option #3, fiber membrane with two-course micro-surface, only one bid was received. While this rehabilitation method would be expected to result in reduced future maintenance and longer pavement life similar to Option #2, it does not warrant a premium to obtain it. For potential future applications of this method, a single-course micro-surface overlay could be proposed for lower volume roads which should allow the bidding to be more competitive.

Based on a review of experience and references provided by Cadillac and this contractor's past performance on City projects, SDA finds that Cadillac is qualified to perform the required construction. Upon award by the City Council, our office will coordinate the completion of the Contract Agreement, Bonds and Insurance information with Cadillac, and issue the Notice to Proceed upon execution of the contract documents.

Very Truly Yours,  
**SPALDING DEDECKER ASSOCIATES, INC.**

David P. Eno, P.E. – Project Manager

enclosures: bid tabulation, project details

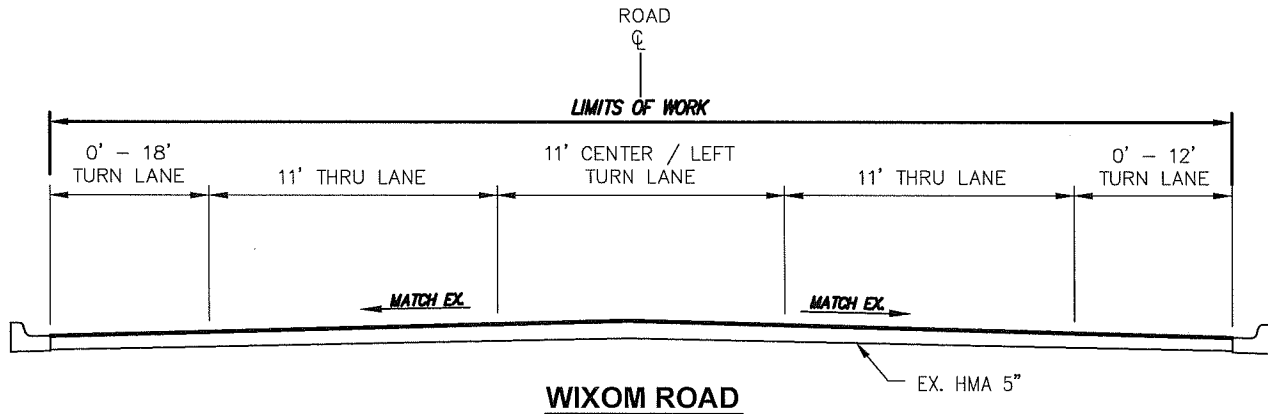
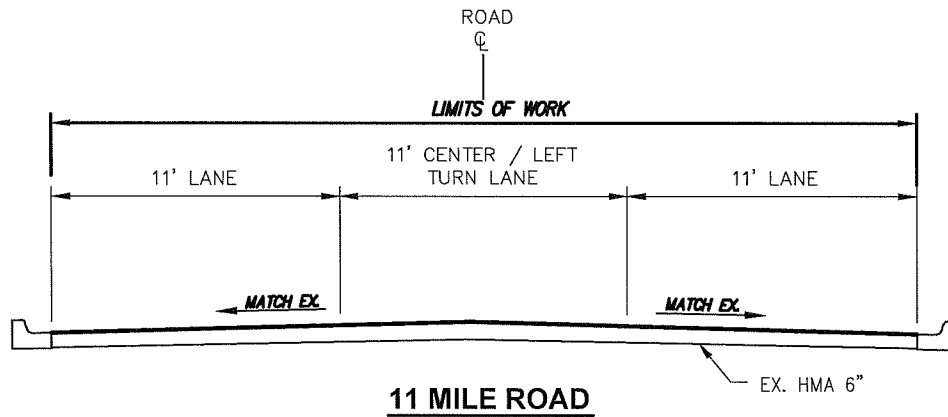
cc: Mr. Ahmed Osman, Division Manager – Cadillac Asphalt, LLC

Engineering Consultants

Infrastructure • Land Development • Surveying



# CITY OF NOVI 2012 MAJOR ROADS CPM PROGRAM TYPICAL CROSS SECTIONS



WORK INCLUDED BASED ON  
ALTERNATIVE SELECTED:

- ALT. NO. 1 - MILL 2", PAVE 1 COURSE OVERLAY
- ALT. NO. 2 - MILL 1-1/2", PLACE FABRIC INTERLAYER, PAVE OVERLAY
- ALT. NO. 3 - PLACE FIBER REINFORCED MEMBRANE AND MICRO-SURFACING



Spalding DeDecker  
Associates, Inc.



**SPALDING DeDECKER  
ASSOCIATES, INC.**  
ENGINEERS SURVEYORS  
905 SOUTH BLVD. EAST  
ROCHESTER HILLS, MI 48307  
PH: (248) 844-5400 FAX: (248) 844-5404  
www.spaldingdedecker.com

DRAWN: MT	DATE: 7/03/2012
CHECKED: DPE	DATE: 7/03/2012
MANAGER: CLG	SCALE: NONE
JOB No. NV12001	SHEET: 5
TOWN 1 NORTH RANGE 8 EAST	
CITY OF NOVI	OKALAND COUNTY, MI

Bid Tabulation - 2012 CPM  
 5 bids received, opened 8/01/2012  
 (bidders were not required to bid on all options)

Option #1 - 2-inch Mill and Overlay				Engineer's Estimate		Cadillac Asphalt		Florence Cement		Ajax Paving		Pavex Corp		Strawser Const.	
Item No.	Item Description	Est. Quantity	Unit	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)
1	Mobilization (10% max.)	1	LS	10,000.00	10,000.00	1,000.00	1,000.00	4,700.00	4,700.00	15,000.00	15,000.00	7,500.00	7,500.00		-
2	Pre-Construction Video Review	1	LS	2,500.00	2,500.00	1,300.00	1,300.00	1,500.00	1,500.00	1,250.00	1,250.00	1,300.00	1,300.00		-
3	Soil Erosion & Sedimentation Control	1	LS	2,000.00	2,000.00	1,200.00	1,200.00	1,000.00	1,000.00	500.00	500.00	1,800.00	1,800.00		-
4	Maintaining Traffic	1	LS	6,000.00	6,000.00	4,500.00	4,500.00	5,000.00	5,000.00	4,600.00	4,600.00	7,500.00	7,500.00		+
5	Cold Milling HMA Surface	13600	SYD	1.50	20,400.00	1.65	22,440.00	1.20	16,320.00	2.25	30,600.00	2.80	38,080.00		-
6	Concrete Valley Gutter, Rem and Replace	110	FT	25.00	2,750.00	35.00	3,850.00	80.00	8,800.00	70.00	7,700.00	50.00	5,500.00		-
7	HMA, 4C, 2 inch	13600	SYD	7.70	104,720.00	7.00	95,200.00	7.75	105,400.00	7.60	103,360.00	9.00	122,400.00		-
8	Permanent Pavement Markings	1	LS	12,000.00	12,000.00	8,147.00	8,147.00	8,150.00	8,150.00	8,147.00	8,147.00	8,147.00	8,147.00		-
9	Monument Adjustment Allowance	2500	DLR	1.00	2,500.00	1.00	2,500.00	1.00	2,500.00	1.00	2,500.00	1.00	2,500.00		-
10	Permit Allowance	250	DLR	1.00	250.00	1.00	250.00	1.00	250.00	1.00	250.00	1.00	250.00		-
11	Inspection Crew Days (\$615/day)	*	DAY	8	3,690.00	7	4,305.00	7.5	4,612.50	7	4,305.00	13	7,995.00		-
Option #1 - Total Bid:				\$	166,810.00	\$	144,692.00	\$	158,232.50	\$	178,212.00	\$	202,972.00		NO BID

Option #2 - 1.5" Mill, Fabric Interlayer, Overlay				Engineer's Estimate		Cadillac Asphalt		Florence Cement		Ajax Paving		Pavex Corp		Strawser Const.	
Item No.	Item Description	Est. Quantity	Unit	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)
1	Mobilization (10% max.)	1	LS	13,000.00	13,000.00	1,250.00	1,250.00	4,700.00	4,700.00	15,000.00	15,000.00		-		-
2	Pre-Construction Video Review	1	LS	2,500.00	2,500.00	1,300.00	1,300.00	1,500.00	1,500.00	1,250.00	1,250.00		-		-
3	Soil Erosion & Sedimentation Control	1	LS	2,000.00	2,000.00	1,200.00	1,200.00	1,000.00	1,000.00	500.00	500.00		-		-
4	Maintaining Traffic	1	LS	6,000.00	6,000.00	4,500.00	4,500.00	5,000.00	5,000.00	4,800.00	4,800.00		-		-
5	Cold Milling HMA Surface	13600	SYD	1.25	17,000.00	1.50	20,400.00	1.10	14,960.00	2.50	34,000.00		-		-
6	Concrete Valley Gutter, Rem and Replace	110	FT	25.00	2,750.00	35.00	3,850.00	80.00	8,800.00	70.00	7,700.00		-		-
7	Crack Sealing	1000	FT	2.50	2,500.00	4.00	4,000.00	1.00	1,000.00	2.00	2,000.00		-		-
8	Interlayer	13600	SYD	3.25	44,200.00	2.42	32,912.00	2.42	32,912.00	2.42	32,912.00		-		-
9	HMA, 4C, 1.5 inch	13600	SYD	5.80	78,880.00	5.85	79,560.00	6.10	82,960.00	6.50	88,400.00		-		-
10	Permanent Pavement Markings	1	LS	12,000.00	12,000.00	8,147.00	8,147.00	8,150.00	8,150.00	8,147.00	8,147.00		-		-
11	Monument Adjustment Allowance	2500	DLR	1.00	2,500.00	1.00	2,500.00	1.00	2,500.00	1.00	2,500.00		-		-
12	Permit Allowance	250	DLR	1.00	250.00	1.00	250.00	1.00	250.00	1.00	250.00		-		-
13	Inspection Crew Days (\$615/day)	*	DAY	7	4,305.00	8	4,920.00	7.5	4,612.50	8	4,920.00		-		-
Option #2 - Total Bid:				\$	187,885.00	\$	164,789.00	\$	168,344.50	\$	202,379.00		NO BID		NO BID

Option #3 - Fiber Membrane w/ Two Layer Micro-surface				Engineer's Estimate		Cadillac Asphalt		Florence Cement		Ajax Paving		Pavex Corp		Strawser Const.	
Item No.	Item Description	Est. Quantity	Unit	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)	Unit Price (\$)	Total Cost (\$)
1	Mobilization (10% max.)	1	LS	14,000.00	14,000.00		-		-		-		-	15,000.00	15,000.00
2	Pre-Construction Video Review	1	LS	2,500.00	2,500.00		-		-		-		-	2,100.00	2,100.00
3	Soil Erosion & Sedimentation Control	1	LS	2,000.00	2,000.00		-		-		-		-	1,600.00	1,600.00
4	Maintaining Traffic	1	LS	7,500.00	7,500.00		-		-		-		-	15,500.00	15,500.00
5	Pavement Marking Removal	1	LS	4,000.00	4,000.00		-		-		-		-	4,950.00	4,950.00
6	Concrete Valley Gutter, Rem and Replace	110	FT	25.00	2,750.00		-		-		-		-	82.00	9,020.00
7	Crack Sealing	2000	FT	2.50	5,000.00		-		-		-		-	2.33	4,660.00
8	Fiber Reinforced Membrane Interlayer	13600	SYD	3.75	51,000.00		-		-		-		-	3.67	49,912.00
9	Micro-surface, Two Course	13600	SYD	4.25	57,800.00		-		-		-		-	4.05	55,080.00
10	Pavement Markings	1	LS	12,000.00	12,000.00		-		-		-		-	9,600.00	9,600.00
11	Permit Allowance	250	DLR	1.00	250.00		-		-		-		-	1.00	250.00
12	Inspection Crew Days (\$615/day)	*	DAY	12	7,380.00		-		-		-		-	12	7,380.00
Option #3 - Total:				\$	166,180.00		NO BID		NO BID		NO BID		NO BID	\$	174,952.00

\* NOTE: Number of Construction Observation Days bid by contractor, entered in Unit Price column here for bid tabulation purposes

No errors in bid line items or totals, AS-read amount equals verified amount for all bidders and all items.