



CITY of NOVI CITY COUNCIL

Agenda Item H
December 7, 2015

SUBJECT: Approval to award engineering design services to URS Corporation (AECOM) for the 2016 Chip Seal Program in the amount of \$16,923.

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

CITY MANAGER APPROVAL: *[Signature]*

EXPENDITURE REQUIRED	\$ 16,923.00
AMOUNT BUDGETED	\$250,000.00
LINE ITEM NUMBER	203-203.00-870.016

BACKGROUND INFORMATION:

This project is the third year of a four-year program to rehabilitate the City's 6.7 miles of chip sealed roads.

As part of the City's ongoing asset management approach to maintaining roads, URS completed a report in 2013 that evaluated the streets that have a chip sealed surface treatment. (Chip sealing is the application of an asphalt emulsion to seal the road's surface, followed by placement and compaction of small diameter crushed gravel.) The report identified \$806,200 of capital improvements necessary to improve and maintain the chip seal streets in good condition. The attached memo and report provide additional information regarding the evaluation and recommended improvements.

The findings of the report show that a funding level of approximately \$200,000 each year specifically for chip seal capital maintenance should be maintained through the FY2016-17 budget to make the necessary improvements to chip sealed roads to get them back into good condition. The report recommends an annual budget of \$90,000 beginning in FY2017-18 for preventative maintenance, which includes crack sealing and patching in addition to reapplication of chip seal as needed to maintain the roads in good condition.

The scope of the 2016 Chip Seal Program includes capital preventative maintenance, such as drainage improvements, base repair and new chip seal on the following streets:

- Penhill
- Pickford
- South Lake Ct
- West Lake Dr
- Garfield Rd
- 11 Mile Rd (near Seeley)
- Taft Rd (n. of I-96)
- Austin
- Charlotte
- Duana
- Elm Ct

URS' engineering fees are based on the fixed fee schedule established in the Agreement for Professional Engineering Services for Public Projects. The design fees for this project will be \$16,923 (8.5% of the estimated construction cost of \$199,100). The construction phase engineering fees will be awarded at the time of construction award and will be based on the contractor's bid price and the fee percentage established in the Agreement for Professional Engineering Services for Public Projects. A draft of the Supplemental

Professional Engineering Services Agreement for this project is enclosed and includes the project scope and schedule.

It is anticipated that the project would be ready for construction in summer 2016.

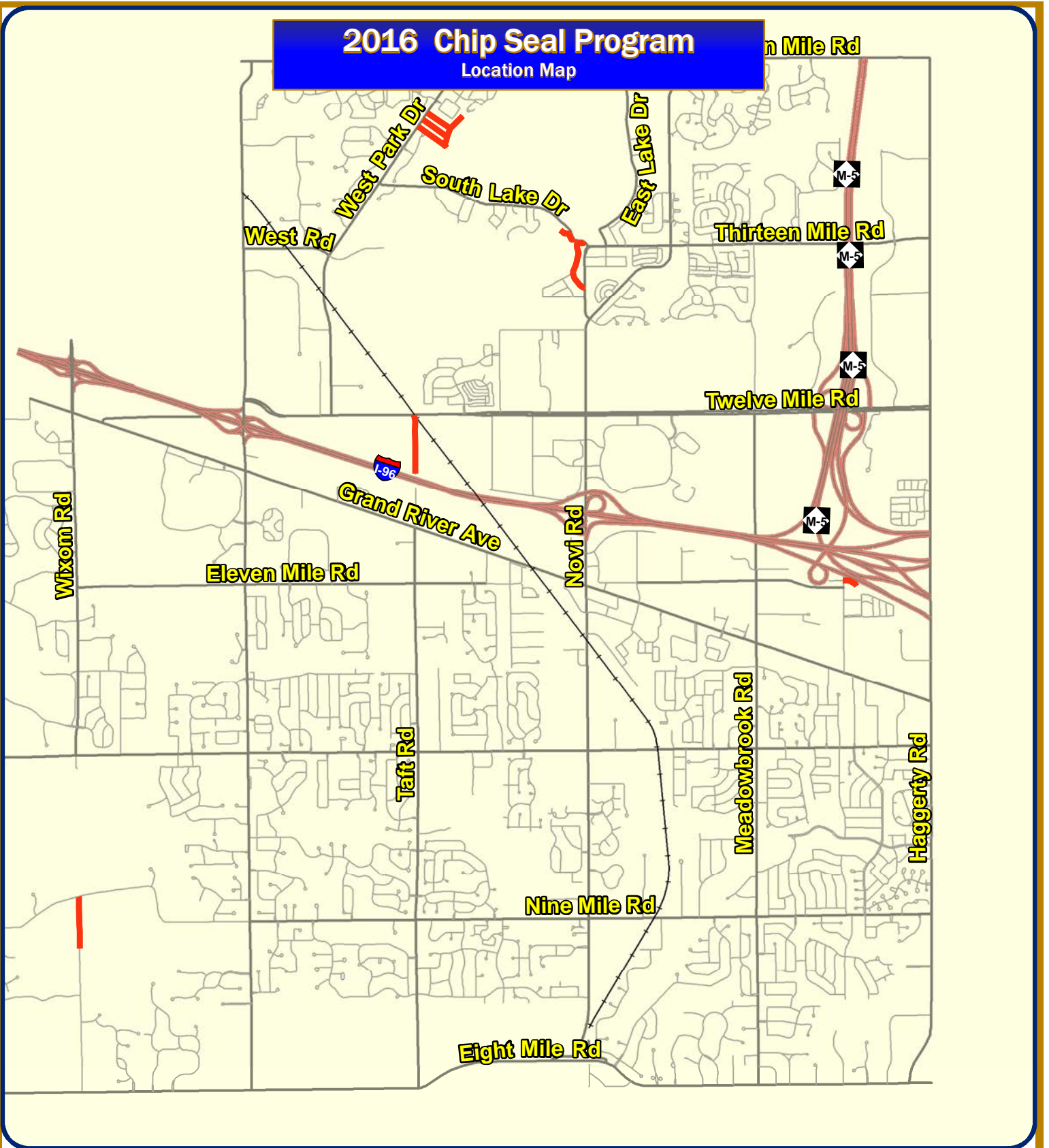
RECOMMENDED ACTION: Approval to award engineering design services to URS Corporation (AECOM) for the 2016 Chip Seal Program in the amount of \$16,923.

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Burke				
Council Member Casey				

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

2016 Chip Seal Program

Location Map



Map Author: A. Wayne
Date: 11/19/2015
Project:
Version #:

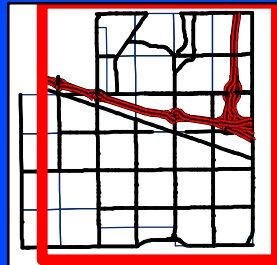
Amended By:
Date:
Department:

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.

Map Legend

- 2016 Chip Seal
- Freeway
- Major Streets
- Minor Streets
- Railroad



City of Novi

Engineering Division
Department of Public Services
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org



1 inch = 4,099 feet



SUPPLEMENTAL PROFESSIONAL ENGINEERING SERVICES AGREEMENT

2016 CHIP SEAL PROGRAM

This Agreement shall be considered as made and entered into as of the date of the last signature hereon, and is between the City of Novi, 45175 W. Ten Mile Road, Novi, MI 48375-3024, hereafter, "City," and AECOM Great Lakes, Inc., whose address is 27777 Franklin Road, Suite 2000, Southfield, MI 48034, hereafter, "Consultant."

RECITALS:

This Agreement shall be supplemental to, and hereby incorporates the terms and conditions of the AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES FOR PUBLIC PROJECTS, and attached exhibits, entered into between the City and the Consultant on December 18, 2012.

The project includes the design and the preparation of plans and specifications for the 2016 Chip Seal Program.

NOW, THEREFORE, in consideration of the foregoing, the City and Consultant agree as follows:

Section 1. Professional Engineering Services.

For and in consideration of payment by the City as provided under the "Payment for Engineering Services" section of this Agreement, Consultant shall perform the work described in the manner provided or required by the following Scope of Services, which is attached to and made a part of this Agreement as Exhibit A, all of said services to be done in a competent, efficient, timely, good and workmanlike manner and in compliance with all terms and conditions of this Agreement.

Exhibit A Scope of Services

Section 2. Payment for Professional Engineering Services.

1. Basic Fee.
 - a. Design Phase Services: The Consultant shall complete the design phase services as described herein for a lump sum fee of \$16,923, which is 8.50% of the estimated construction cost (\$199,100) as indicated on the design and construction engineering fee curve provided in Exhibit B of the Agreement for Professional Engineering Services for Public Projects.
 - b. Construction Phase Services will be awarded at the time of construction award, should it occur.
2. Payment Schedule for Professional Engineering Services Fee.

Consultant shall submit monthly statements for professional engineering services rendered. The statements shall be based on Consultant's estimate of the proportion of the total services actually completed for each task as set forth in Exhibit A at the time of billing. The City shall confirm the correctness of such estimates, and may use the City's own engineer for such purposes. The monthly statements should be accompanied by such properly completed reporting forms and such other evidence of progress as may be required by the City. Upon such confirmation, the City shall pay the amount owed within 30 days.

Final billing under this agreement shall be submitted in a timely manner but not later than three (3) months after completion of the services. Billings for work submitted later than three (3) months after completion of services will not be paid. Final payment will be made upon completion of audit by the City.

3. Payment Schedule for Expenses.

All expenses required to complete the scope of services described herein, including but not limited to costs related to mileage, vehicles, reproduction, computer use, etc., shall be included in the basic fee and shall not be paid separately. However, as compensation for expenses that are not included in the standard scope of services, when incurred in direct connection with the project, and approved by the City, the City shall pay the Consultant its actual cost times a factor of 1.15.

Section 4. Ownership of Plans and Documents; Records.

1. Upon completion or termination of this agreement, all documents prepared by the Consultant, including tracings, drawings, estimates, specifications, field notes, investigations, studies, etc., as instruments of service shall become the property of the City.

2. The City shall make copies, for the use of the Consultant, of all of its maps, records, laboratory tests, or other data pertinent to the work to be performed by the Consultant under this Agreement, and also make available any other maps, records, or other materials available to the City from any other public agency or body.

3. The Consultant shall furnish to the City, copies of all maps, records, field notes, and soil tests that were developed in the course of work for the City and for which compensation has been received by the Consultant.

Section 5. Termination.

1. This Agreement may be terminated by either party upon 7- days' prior written notice to the other party in the event of substantial failure by the other party to fulfill its obligations under this agreement through no fault of the terminating party.

2. This Agreement may be terminated by the City for its convenience upon 90 days' prior written notice to the Consultant.

3. In the event of termination, as provided in this Article, the Consultant shall be paid as compensation in full for services performed to the date of that termination, an amount calculated in accordance with Section 2 of this Agreement. Such amount shall be paid by the

City upon the Consultant's delivering or otherwise making available to the City, all data, drawings, specifications, reports, estimates, summaries, and that other information and materials as may have been accumulated by the Consultant in performing the services included in this Agreement, whether completed or in progress.

Section 6. Disclosure.

The Consultant affirms that it has not made or agreed to make any valuable gift whether in the form of service, loan, thing, or promise to any person or any of the person's immediate family, having the duty to recommend, the right to vote upon, or any other direct influence on the selection of consultants to provide professional engineering services to the City within the two years preceding the execution of this Agreement. A campaign contribution, as defined by Michigan law shall not be considered as a valuable gift for the purposes of this Agreement.

Section 7. Insurance Requirements.

1. The Consultant shall maintain at its expense during the term of this Agreement, the following insurance:

- A. Worker's Compensation insurance relative to all Personnel engaged in performing services pursuant to this Agreement, with coverage not less than that required by applicable law.
- B. Comprehensive General Liability insurance with maximum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate and minimum Property Damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- C. Automotive Liability insurance covering all owned, hired, and non-owned vehicles with Personal Protection insurance to comply with the provisions of the Michigan No Fault Insurance Law including Residual Liability insurance with minimum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate minimum property damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- D. The Consultant shall provide proof of Professional Liability coverage in the amount of not less than \$1,000,000 (One Million Dollars) per occurrence and/or aggregate, and Environmental Impairment coverage.

2. The Consultant shall be responsible for payment of all deductibles contained in any insurance required hereunder.

3. If during the term of this Agreement changed conditions or other pertinent factors should in the reasonable judgment of the City render inadequate insurance limits, the Consultant will furnish on demand such additional coverage as may reasonably be required under the circumstances. All such insurance shall be effected at the Consultant's expense, under valid and enforceable policies, issued by the insurers of recognized responsibility which are well-rated by national rating organizations and are acceptable to the City.

4. All policies shall name the Consultant as the insured and shall be accompanied by a commitment from the insurer that such policies shall not be canceled or reduced without at least thirty (30) days prior notice to the City.

With the exception of professional liability, all insurance policies shall name the City of Novi, its officers, agents, and employees as additional insured. Certificates of Insurance evidencing such coverage shall be submitted to Sue Morianti, Purchasing Manager, City of Novi, 45175 West Ten Mile Road, Novi, MI 48375-3024 prior to commencement of performance under this Agreement and at least fifteen (15) days prior to the expiration dates of expiring policies.

5. If any work is sublet in connection with this Agreement, the Consultant shall require each subconsultant to effect and maintain at least the same types and limits of insurance as fixed for the Consultant.

6. The provisions requiring the Consultant to carry said insurance shall not be construed in any manner as waiving or restricting the liability of the Consultant under this Agreement.

Section 8. Indemnity and Hold Harmless.

A. The Consultant agrees to indemnify and hold harmless the City, its elected and appointed officials and employees, from and against any and all claims, demands, suits, losses and settlements, including actual attorney fees incurred and all costs connected therewith, for any damages which may be asserted, claimed or recovered against the City by reason of personal injury, death and/or property damages which arises out of or is in any way connected or associated with the actions or inactions of the Consultant in performing or failing to perform the work.

The Consultant agrees that it is its responsibility and not the responsibility of the City to safeguard the property and materials used in performing this Agreement. Further, this Consultant agrees to hold the City harmless for any loss of such property and materials used pursuant to the Consultant's performance under this Agreement.

Section 9. Nondiscrimination.

The Consultant shall not discriminate against any employee, or applicant for employment because of race, color, sex, age or handicap, religion, ancestry, marital status, national origin, place of birth, or sexual preference. The Consultant further covenants that it will comply with the Civil Rights Act of 1973, as amended; and the Michigan Civil Rights Act of 1976 (78. Stat. 252 and 1976 PA 4563) and will require a similar covenant on the part of any consultant or subconsultant employed in the performance of this Agreement.

Section 10. Applicable Law.

This Agreement is to be governed by the laws of the State of Michigan and the City of Novi Charter and Ordinances.

Section 11. Approval; No Release.

Approval of the City shall not constitute nor be deemed release of the responsibility and liability of Consultant, its employees, associates, agents and subconsultants for the accuracy and competency of their designs, working drawings, and specifications, or other documents and services; nor shall that approval be deemed to be an assumption of that responsibility by the City for any defect in the designs, working drawings and specifications or other documents prepared by Consultant, its employees, subconsultants, and agents.

After acceptance of final plans and special provisions by the City, Consultant agrees, prior to and during the construction of this project, to perform those engineering services as may be required by City to correct errors or omissions on the original plans prepared by Consultant and to change the original design as required.

Section 12. Compliance With Laws.

This Contract and all of Consultants professional services and practices shall be subject to all applicable state, federal and local laws, rules or regulations, including without limitation, those which apply because the City is a public governmental agency or body. Consultant represents that it is in compliance with all such laws and eligible and qualified to enter into this Agreement.

Section 13. Notices.

Written notices under this Agreement shall be given to the parties at their addresses on page one by personal or registered mail delivery to the attention of the following persons:

City: Rob Hayes, P.E., Director of Public Services and Maryanne Cornelius, Clerk, with a copy to Thomas R. Schultz, City Attorney

Consultant: Sean Kelsch, P.E.

Section 14. Waivers.

No waiver of any term or condition of this Agreement shall be binding and effective unless in writing and signed by all parties, with any such waiver being limited to that circumstance only and not applicable to subsequent actions or events.

Section 15. Inspections, Notices, and Remedies Regarding Work.

During the performance of the professional services by Consultant, City shall have the right to inspect the services and its progress to assure that it complies with this Agreement. If such inspections reveal a defect in the work performed or other default in this Agreement, City shall provide Consultant with written notice to correct the defect or default within a specified number of days of the notice. Upon receiving such a notice, Consultant shall correct the specified defects or defaults within the time specified. Upon a failure to do so, the City may terminate this Agreement by written notice and finish the work through whatever method it deems appropriate, with the cost in doing so being a valid claim and charge against Consultant;

or, the City may preserve the claims of defects or defaults without termination by written notice to Consultant.

All questions which may arise as to the quality and acceptability of work, the manner of performance and rate of progress of the work, and the interpretation of plans and specifications shall be decided by the City. All questions as to the satisfactory and acceptable fulfillment of the terms of this agreement shall be decided by the City.

Section 16. Delays.

No charges or claims for damages shall be made by the Consultant for delays or hindrances from any cause whatsoever during the progress of any portions of the services specified in this agreement, except as hereinafter provided.

In case of a substantial delay on the part of the City in providing to the Consultant either the necessary information or approval to proceed with the work, resulting, through no fault of the Consultant, in delays of such extent as to require the Consultant to perform its work under changed conditions not contemplated by the parties, the City will consider supplemental compensation limited to increased costs incurred as a direct result of such delays. Any claim for supplemental compensation must be in writing and accompanied by substantiating data.

When delays are caused by circumstances or conditions beyond the control of the Consultant as determined by the City, the Consultant shall be granted an extension of time for such reasonable period as may be mutually agreed upon between the parties, it being understood, however, that the permitting of the Consultant to proceed to complete the services, or any part of them, after the date to which the time of completion may have been extended, shall in no way operate as a waiver on the part of the City of any of its rights herein set forth.

Section 17. Assignment.

No portion of the project work, heretofore defined, shall be sublet, assigned, or otherwise disposed of except as herein provided or with the prior written consent of the City. Consent to sublet, assign, or otherwise dispose of any portion of the services shall not be construed to relieve the Consultant of any responsibility for the fulfillment of this agreement.

Section 18. Dispute Resolution.

The parties agree to try to resolve any disputes as to professional engineering services or otherwise in good faith. In the event that the parties cannot resolve any reasonable dispute, the parties agree to seek alternative dispute resolution methods agreeable to both parties and which are legally permissive at the time of the dispute. The parties agree to use their best efforts to resolve any good faith dispute within 90 (ninety) days notice to the other party. In the event the parties cannot resolve that dispute as set forth above, they may seek such remedies as may be permitted by law.

WITNESSES

AECOM Great Lakes, Inc.

By:
Its:

The foregoing _____ was acknowledged before me this ____ day of _____,
20____, by _____ on behalf of
_____.

Notary Public
_____ County, Michigan
My Commission Expires: _____

WITNESSES

CITY OF NOVI

By: Robert J. Gatt
Its: Mayor

The foregoing _____ was acknowledged before me this ____ day of _____,
20____, by _____ on behalf of the City of Novi.

Notary Public
Oakland County, Michigan
My Commission Expires: _____



November 24, 2015

Mr. Adam Wayne, PE
City of Novi
Field Services Complex
26300 Lee Begole Drive
Novi, MI 48375

Reference: 2016 Chip Seal Program Project

Dear Mr. Wayne,

AECOM is pleased to submit this proposal for the above referenced project. We understand that the project includes the chip sealing of rehabilitation of twelve separate roadways at various locations in the City of Novi. We understand that the locations selected for the 2016 project are:

- Penhill St.
- South Lake Ct.
- West Lake Dr.
- Garfield Rd.
- 11 Mile Rd.
- Austin Dr.
- Charlotte St.
- Duana Ave.
- Elm Ct.
- Taft Rd.

We also understand that the limits and scope of work may need to be adjusted as design proceeds in order to match the project budget.

The following tasks will be completed for the project:

Initial Meeting and Scope Verification

The intent of this task is to meet with the City and verify the limits and scope of work for the project. We have assumed that soil borings and pavement cores will not be obtained for the project. The need for drainage improvements or work in addition to the chip sealing work will be identified and discussed at the meeting. Upon completion of this task, we will move forward with the surveying and preliminary design.

Survey and Base Plans

The intent of this task is to provide topographic survey and base mapping as needed for the proposed design work. Base drawings will be created using available aerial photos and a detailed field review of the site. Field surveys will also be used for specific areas, if required.

AECOM will prepare base plans (30%-40% complete) to identify the major design features. These plans will also be used to further the utility investigation. Base plans will include the results of the survey information, utility information from response to our solicitations, and a preliminary estimate.



Mr. Adam Wayne, PE
November 24, 2015
Page 2

AECOM will distribute the base plan design set to the utility companies that have indicated that they have facilities in the project area. We will incorporate the additional information that utility companies provide to AECOM into the plan set.

Preliminary Plans

Incorporating the information obtained from the above tasks, we will prepare the preliminary plan set (90%) in accordance with City requirements. This submittal will include items such as the typical cross sections, materials/quantities and details. A Project Manual and preliminary updated cost estimate will also be prepared and submitted.

Final Plans and Proposal

Incorporating comments from the City, AECOM will develop the final plans submittal, including the plan set, Project Manual, and cost estimate.

Advertising and Award

We will respond to any final comments received from the City and submit the Advertisement for Bids to the City for publication. Contract Documents will be made available to bidders by AECOM. AECOM will respond to bidder inquiries during the advertising period and prepare addenda as required. Following the bid opening, AECOM will submit the Bid Tabulation and a letter with recommendations regarding contract award

Construction

URS will provide full time inspection, contract administration, and staking as required for the project.

Schedule

Upon notification to proceed, it is estimated that the following schedule could be maintained:

Notice to Proceed	December 8, 2015
Base Plans Submittal	January 22, 2016
Preliminary Plans Submittal	February 18, 2016
Final Plans Submittal	March 11, 2016
Contract Award	Early May 2016
Begin Construction	June, 2016
End Construction	July, 2016

Estimated Cost of Construction and Design Fees

Construction cost is estimated at \$199,100. See attached estimate for details.

The design fee (using the Engineering Fee Chart for Roadway Rehabilitation work) is 8.50% of construction cost.

$$8.50\% \times \$199,100 = \mathbf{\$16,923.}$$

We understand that fees for construction phase services will be determined after a construction contract is awarded.



Mr. Adam Wayne, PE
November 24, 2015
Page 3

Please contact me if you have any questions or wish to discuss this submittal.

Sincerely,

AECOM Great Lakes, Inc.

A handwritten signature in blue ink that reads "Sean Kelsch".

Sean Kelsch, PE
Manager, Highway Engineering Services

City of Novi
2016 Chip Seal Program
Preliminary Cost Estimate Summary
11/24/2015

Location: All 2016 Chip Seal Program Locations
Length: 10525
Avg. Width: 20

Item No.	Item Description	Unit	Quantity	Unit Price (\$)	Total Cost (\$)
1	Maintaining Traffic	LS	1.00	\$12,000.00	\$ 12,000.00
2	Erosion Control, Silt Fence	Ft	150.00	\$4.00	\$ 600.00
3	Erosion Control, Inlet Protection, Fabric Drop	Ea	3.00	\$250.00	\$ 750.00
4	Shoulder, CI II	Ton	3.00	\$200.00	\$ 600.00
5	Spray Patch	Ton	30.00	\$425.00	\$ 12,750.00
6	Hand Patching	Ton	15.00	\$200.00	\$ 3,000.00
7	Single Chip Seal	Syd	23,206.00	\$2.75	\$ 63,816.50
8	Seal, Single Chip, Patching	Syd	9,282.40	\$3.50	\$ 32,488.40
9	Seal, Fog	Syd	23,207.00	\$0.80	\$ 18,565.60
10	Dr Structure Cover, Adj, Case 2	Ea	4.00	\$1,000.00	\$ 4,000.00
11	Point-up Drainage Structure	Ea	4.00	\$200.00	\$ 800.00
12	Reconstruct Dainage Structure	Ft	4.00	\$500.00	\$ 2,000.00
13	Stop Bar, 24 Inch, Cold Plastic	Ft	30.00	\$25.00	\$ 750.00
	Mobilization and Miscellaneous Items (15%)				\$ 25,975.58
	Total:				\$ 199,100.00

MEMORANDUM



TO: ROB HAYES, P.E.; DIRECTOR OF PUBLIC SERVICES/CITY ENGINEER
FROM: BRIAN COBURN, P.E.; ENGINEERING MANAGER *BTC*
SUBJECT: CHIP SEAL ROAD EVALUATION AND RECOMMENDATIONS
DATE: OCTOBER 14, 2013

There are approximately 6.7 miles of streets in the City of Novi that have a chip sealed surface, representing approximately 4% of the center line miles of roads under Novi's jurisdiction. These roads were gravel surfaced before the chip seal was applied during the time period between 2004 and 2008. Since that time, DPS' Field Operations staff have performed some routine maintenance, but no capital preventative maintenance (CPM) has been completed by the City to keep the chip seal roads in good condition. All of the City's chip sealed roads are classified as local streets on the Act 51 map and are shown on the attached location map.

In keeping with the City's asset management approach to roads, we contracted with URS Corporation to prepare the attached report on chip sealed roads. The report provides an inventory of chip sealed streets, documents existing conditions and deficiencies, provides recommendations for capital maintenance of the roads over the next four years, and provides recommendations and a budget for ongoing maintenance. In general, the chip seal has performed well where adequate drainage exists. The report provides recommendations to improve discrete locations with poor drainage, but generally recommends an additional chip seal treatment in most other areas. This report will serve as a guide to assist staff with budget requests and maintenance activities over the next several years.

In anticipation of this report and the deferred capital maintenance on chip sealed roads, the approved FY2013-14 budget for annual local street CPM was increased from \$50,000 to \$200,000 to include some chip seal improvements. The findings of the report show that a funding level of approximately \$200,000 each year specifically for chip seal capital maintenance should be maintained through the FY2016-17 budget to make the necessary improvements to chip sealed roads to get them back into good condition. The report recommends an annual budget of \$90,000 beginning in FY2017-18 for preventative maintenance, which includes crack sealing and patching in addition to reapplication of chip seal as needed to maintain the good condition of the road.

In addition to the existing chip sealed roads, the consultant was also asked to review three gravel road segments as candidates for chip seal: Dixon Road, 12-1/2 Mile Road, and Sixth Gate. Dixon Road and 12-1/2 Mile Roads were chip sealed around 2007. In 2012, the condition of the chip seal was no longer serviceable and the road was pulverized back to gravel. Sixth Gate was previously chip sealed, but is in very poor condition due to evident drainage problems that were noted in the report. The report included a review of these segments as possible candidates for chip seal, but recommends reconstruction as a paved road in the long term. Our past experience has shown that the poor drainage for these roads has contributed to the premature deterioration of the previously installed chip seal surface. A reconstructed paved roadway would have drainage improvements, including edge drain

and storm sewer, to extend the life of the roadway. The report suggests that a double application of chip seal could be applied as a short term solution for Dixon and 12-1/2 Mile, but would likely deteriorate again within a few years. Staff recommends that if a chip seal treatment is considered for Dixon or 12-1/2 Mile that it occur after the construction of Liberty Park is complete to limit the occurrence of heavier loads and prolong the life of the treatment.

The table on the next page summarizes the report's recommended schedule for making improvements to the chip sealed roads over the next four construction seasons beginning in 2014. The ranking was based on the consultant's observations, PASER ratings, resident complaints received by staff, and location (to complete all streets in a neighborhood in the same construction season). The proposed work for 2014 exceeds the current budget, but we will structure the bidding to include alternates so that decisions can be made later based on actual bid prices.

We will prepare the engineering design award for consideration by City Council at an upcoming meeting so the work can be bid this spring for late spring/early summer construction.

cc: Matt Wiktorowski, Field Operations Senior Manager
Ben Croy, P.E.; Civil Engineer

**Summary of Chip Seal Road Recommendations
4-year Schedule and Construction Cost Estimates**

2014 Construction Year (FY13-14)

Street Name	2013 PASER Rating	Cost Estimate
Buffington	5	\$13,000
Henning	3	\$13,700
Pembine	4	\$4,800
Summit Ct (overlay)	1	\$42,500
Summit Dr	3	\$60,000
Crown	4	\$12,200
Pleasant Cove Dr	4	\$30,800
Shamrock Hill	1	\$9,100
Shawood Drive	5	\$26,600
2014 Total Construction Cost Estimate		\$212,700

2015 Construction Year (FY14-15)

Street Name	2013 PASER Rating	Cost Estimate
Chapman	3	\$11,300
Endwell	2	\$11,900
Herman	4	\$4,400
Lashbrook	6	\$4,300
Monticello	2	\$8,100
Paramount	6	\$82,600
Parklow	5	\$4,100
Bernstadt	4	\$44,500
Eubank	5	\$13,500
Lemay	2	\$12,100
Maudlin	4	\$6,800
Owenton	5	\$6,200
2015 Total Construction Cost Estimate		\$209,800

2016 Construction Year (FY15-16)

Street Name	2013 PASER Rating	Cost Estimate
Penhill	6	\$13,800
Pickford	3	\$27,800
South Lake Ct	3	\$12,700
West Lake Dr	3	\$16,300
Garfield Rd	2	\$29,800
11 Mile Rd	4	\$8,400
Taft Rd	3	\$33,000
Austin	2	\$25,400
Charlotte	5	\$4,500
Duana	4	\$5,600
Elm Ct	2	\$5,000
2016 Total Construction Cost Estimate		\$182,300

2017 Construction Year (FY16-17)

Street Name	2013 PASER Rating	Cost Estimate
Burton Dr	5	\$19,100
Faywood	3	\$30,000
Lebenta	2	\$3,800
West Lake Dr	2	\$3,400
Amis	7	\$4,000
North Haven Dr	7	\$11,500
Rexton	7	\$7,600
Brenda Ln	4	\$4,600
Joseph Dr	4	\$16,400
Flint St	6	\$24,100
Delmont	3	\$18,200
Dinser	4	\$58,700
2017 Total Construction Cost Estimate		\$201,400

Other Report Recommendations for Gravel Roads

Gravel Road	Short Term Recommendations		Long Term Recommendations	
12-1/2 Mile Rd	Chip Seal*	\$46,900.00	Reconstruct as Paved Road	\$812,900
Dixon Rd	Chip Seal*	\$42,600.00	Reconstruct as Paved Road	\$746,700
Sixth Gate	n/a	n/a	Reconstruct as Paved Road	\$79,300

*Chip seal would have a limited life of only a few years

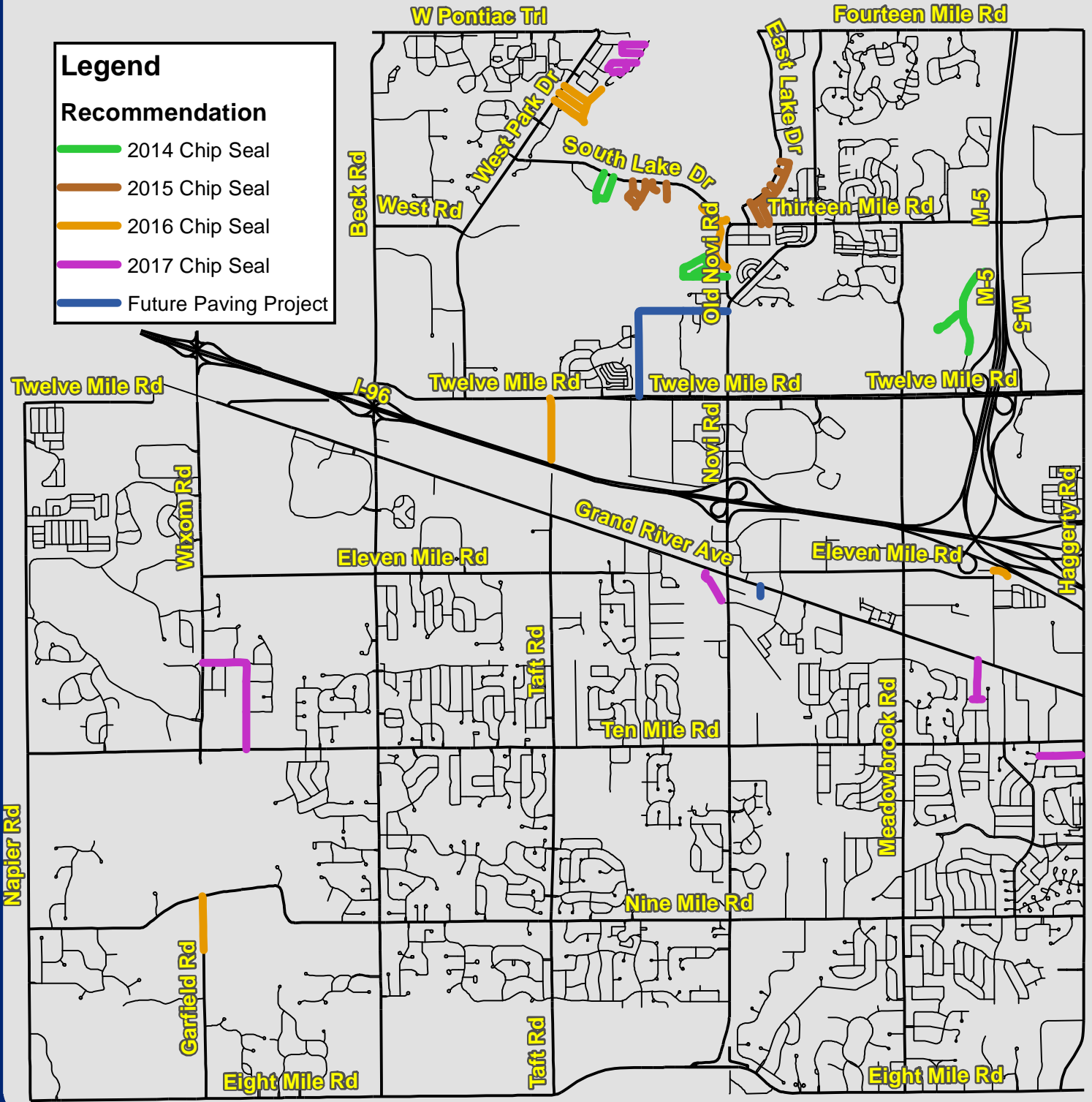
Chip Seal Recommendations

Location Map

Legend

Recommendation

- █ 2014 Chip Seal
- █ 2015 Chip Seal
- █ 2016 Chip Seal
- █ 2017 Chip Seal
- █ Future Paving Project



Map Author: Coburn
 Date: 10/15/13
 Project: 2013 Chip Seal
 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 = 4,255 feet



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

SCOPING REPORT

EXCERPT OF
REPORT

CHIP SEAL STREET EVALUATION

CITY OF NOVI
OAKLAND COUNTY, MICHIGAN

URS Project Number 12943934

Prepared For:

CITY OF NOVI ENGINEERING DEPARTMENT

Prepared By:

URS

GRAND RAPIDS – SOUTHFIELD – TRAVERSE CITY

October 7, 2013

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Section 1 Summary and Recommendations

1.1 Summary

The City of Novi is developing a chip seal program. 47 different roadway segments were identified by the City of Novi Engineering Department as candidates for the program. URS has performed a field inspection/review of each segment of roadway to determine specific needs and provide recommendations for each roadway.

1.2 Recommendations

A chip seal can preserve the condition of a good road for several more years. A chip seal does not fix problems in the pavement like potholes or large cracks, and it does not fix subgrade problems.

Most of the roads in this project are in good condition with potholes or failed pavements in spot locations. These roads are currently good candidates for a chip seal. For these roads, we recommend the following process:

1. Reconstruct pavement at potholes and other failed sections with new asphalt pavement and aggregate base (where needed).
2. Improve drainage where there is evidence that the existing drainage is inadequate and has contributed to pavement failures. Add edge drains in these areas where feasible.
3. Repair remaining cracks and clean the pavement.
4. Apply the chip seal.
5. Spray on a fog seal. The fog seal covers the surface of the chip seal aggregate with a thin layer of asphalt that helps hold the aggregate in place and provides an attractive finish.

Most of the roadways have been previously chip sealed and the chip seals are approaching the end of their life. Therefore, we recommend constructing a chip seal on most of the roads in 2014 and 2015. Delaying longer may result in the roadways needing a more expensive treatment than a chip seal. **Table 1** displays the roadways, recommended improvement, year of improvement, and the cost of that improvement. Cost are shown in 2014 dollars in the estimates in the appendix and in the writeup for each road section. **Table** includes a 3% per year inflation factor for 2015-2017, so cost estimates in the table will be greater than those found in the following sections.

More extensive work may be appropriate for some roadways. Recommendations and estimates for these improvements are summarized in **Table 2**.

Use of a Cape Seal in lieu of a chip seal was investigated for some roadways. A Cape Seal includes placing a layer of Fiberbat on the existing pavement followed by Microsurfacing. The Fiberbat layer includes polymer modified asphalt emulsion, chopped fiberglass strands and fine crushed aggregate. The Fiberbat provides many of the same benefits as a geotextile interlayer fabric. The microsurfacing layer is approximately 0.25 inches thick and consists of specially blended aggregate and asphalt emulsion.

The Cape Seal has a longer service life than a chip seal. Because specialized equipment would need to be mobilized and likely only one contractor will be able to bid the work, the cost for a Cape Seal would be substantially higher than with a chip seal, particularly if only a small amount is done. Several area contractors have the capability to do chip seals and competition in bidding would likely be better than with the Cape Seal process. For this reason, standard chip seals are proposed for this program.

TABLE 1: CHIP SEAL PROJECT SUMMARY

Roadway Name	Recommended Improvement	Construction Year/Estimated Cost			
		2014	2015	2016	2017
2.0 Bloomfield Subdivision and Bentley Subdivision					
2.1 Pickford St	Chip seal			\$ 13,800	
2.2 South Lake Ct	Chip seal			\$ 27,800	
2.3 Penhill St	Chip seal			\$ 12,700	
2.4 West Lake Dr	Chip seal			\$ 16,300	
3.0 CENAQUA SHORES SUBDIVISION, CHAPMANS WALLED LAKE SUBDIVISION, AND CZENKUSCH'S ADDITION					
3.1 Chapman Dr	Chip seal		\$ 11,300		
3.2 Endwell St	Chip seal		\$ 11,900		
3.3 Herman St	Chip seal		\$ 4,400		
3.4 Lashbrook St	Chip seal		\$ 4,300		
3.5 Monticello St	Chip seal		\$ 8,100		
3.6 Paramount Ave	Chip seal & Partial Reconst.		\$ 82,600		
3.7 Parklow St	Chip seal		\$ 4,100		
4.0 Delmont and Dinser Drives					
4.1 Delmont Dr	Chip seal				\$ 18,200
4.2 Dinser Dr	Chip Seal				\$ 58,700
5.0 Dixon and Twelve 1/2 Mile Roads					
5.1 Dixon Rd	Double Chipseal	\$ 42,600			
5.2 Twelve 1/2 Mile Rd	Double Chipseal	\$ 46,900			
6.0 Greys Subdivision					
6.1 Burton Dr	Chip seal				\$19,100
7.0 Idlemere Park					
7.1 Bernstadt St	Chip seal & Partial Reconst		\$ 44,500		
7.2 Eubank St	Chip seal		\$ 13,500		
7.3 Maudlin St	Chip seal		\$ 12,100		
7.4 Lemay St	Chip seal		\$ 6,800		
7.5 Owenton St	Chip seal		\$ 6,200		
8.0 Garfield Rd	Chip Seal			\$29,800	
9.0 JW Hawthorne's Sub #2					
9.1 Faywood St	HMA Overlay – see next table				
9.2 Lebenta St	Chip seal				\$ 3,800
9.3 West Lake Dr	Chip seal				\$ 3,400
10.0 Lakewall Subdivision					
10.1 Amis Ave	Chip seal				\$ 4,000
10.2 North Haven Dr	Chip seal				\$ 11,500
10.3 Rexton St	Chip seal				\$ 7,600
11.0 Lakewoods Subdivision					
11.1 Buffington Dr	Chip seal	\$13,000			
11.2 Henning Dr	Chip seal	\$13,700			
11.3 Pembine St	Chip seal	\$4,800			

Roadway Name	Recommended Improvement	Construction Year/Estimated Cost			
		2014	2015	2016	2017
12.0 Leslie Park Subdivision					
12.1 Brenda Ln	Chip seal				\$4,600
12.2 Joseph Dr	Chip seal				\$16,400
13.0 Novi Manor					
13.1 Sixth Gate Dr	Reconstruct – see next table				
14.0 Railroad Subdivision					
14.1 Flint St	Chip seal				\$24,100
15.0 Seeleys Golden Acres					
15.1 Eleven Mile Rd	Chip seal			\$ 8,400	
16.0 Shawood Walled Lake Heights, Pratt's Subdivision and Walled Lake Shores					
16.1 Austin Dr	Chip seal			\$ 25,400	
16.2 Charlotte St	Chip seal			\$ 4,500	
16.3 Crown Dr	Chip seal	\$ 12,200			
16.4 Duana Ave	Chip seal			\$ 5,600	
16.5 Elm Ct	Chip seal			\$ 5,000	
16.6 Pleasant Cove Dr	Chip seal	\$ 30,800			
16.7 Shamrock HI	Chip seal	\$ 9,100			
16.8 Shawood Dr	Chip seal	\$ 26,600			
17.0 Summit Hills, Spring Valley and Wildwood Hills					
17.1 Summit Dr	Chip seal	\$ 42,500			
17.2 Summit Ct	HMA Overlay – see next table				
18.0 Taft Road	Chip seal			\$ 33,000	
Total Escalated Yearly Cost		\$ 242,200	\$ 209,800	\$ 182,300	\$ 171,400
Total Yearly Cost in 2014 Dollars	All years \$ 774,800	\$ 242,200	\$ 203,700	\$ 171,900	\$ 157,000

Estimates are rounded

TABLE 2: LONG TERM IMPROVEMENTS

Roadway Name	Recommended Improvement	Estimated Cost
5.0 Dixon and Twelve 1/2 Mile Roads		
5.1 Dixon Rd	Reconstruct	\$746,700
5.2 Twelve 1/2 Mile Rd	Reconstruct	\$812,900
9.0 JW Hawthorne's Sub #2		
9.1 Faywood St	HMA Overlay	\$30,000
13.0 Novi Manor		
13.1 Sixth Gate Dr	Reconstruct	\$79,300
17.0 Summit Hills, Spring Valley and Wildwood Hills		
17.2 Summit Ct.	HMA Overlay	60,000

Long Term Improvement Estimates are rounded and are in 2014 dollars

1.2 Maintenance Schedule

Table 1 shows improvements recommended for the years 2014 through 2017. This work is needed to restore the roadways studied to good condition.

For future planning, beyond, 2018, a budget figure for an annual chip seal program needs to be developed. In order to do this, the roadways that should be included in the chip seal program need to be determined. All of the subject roadways appear to be candidates for this program, excepting for:

- Dixon Road
- 12 ½ Mile Road
- Sixth Gate Drive

Chip sealing could be expanded to cover all of the asphalt roadways in the City; however, this is not recommended. Neighborhoods that have roadways that have never been chip sealed would likely not be satisfied with the appearance, roughness, and loose gravel inherent in the chip seal process. For neighborhoods which are currently chip sealed, doing additional chip seals would not be viewed as lowering the quality of the roadway.

The total cost for the work needed to restore the studied roadways to good condition is \$774,800, as shown in Table 1. This figure includes base repair/reconstruction and drainage improvements totaling approximately \$90,000 for Paramount Road, Bernstadt Street, and Shawood Drive. This work should not need to be repeated in future years. The cost for the chip sealing work excluding this reconstruction and drainage improvement work is approximately \$700,000

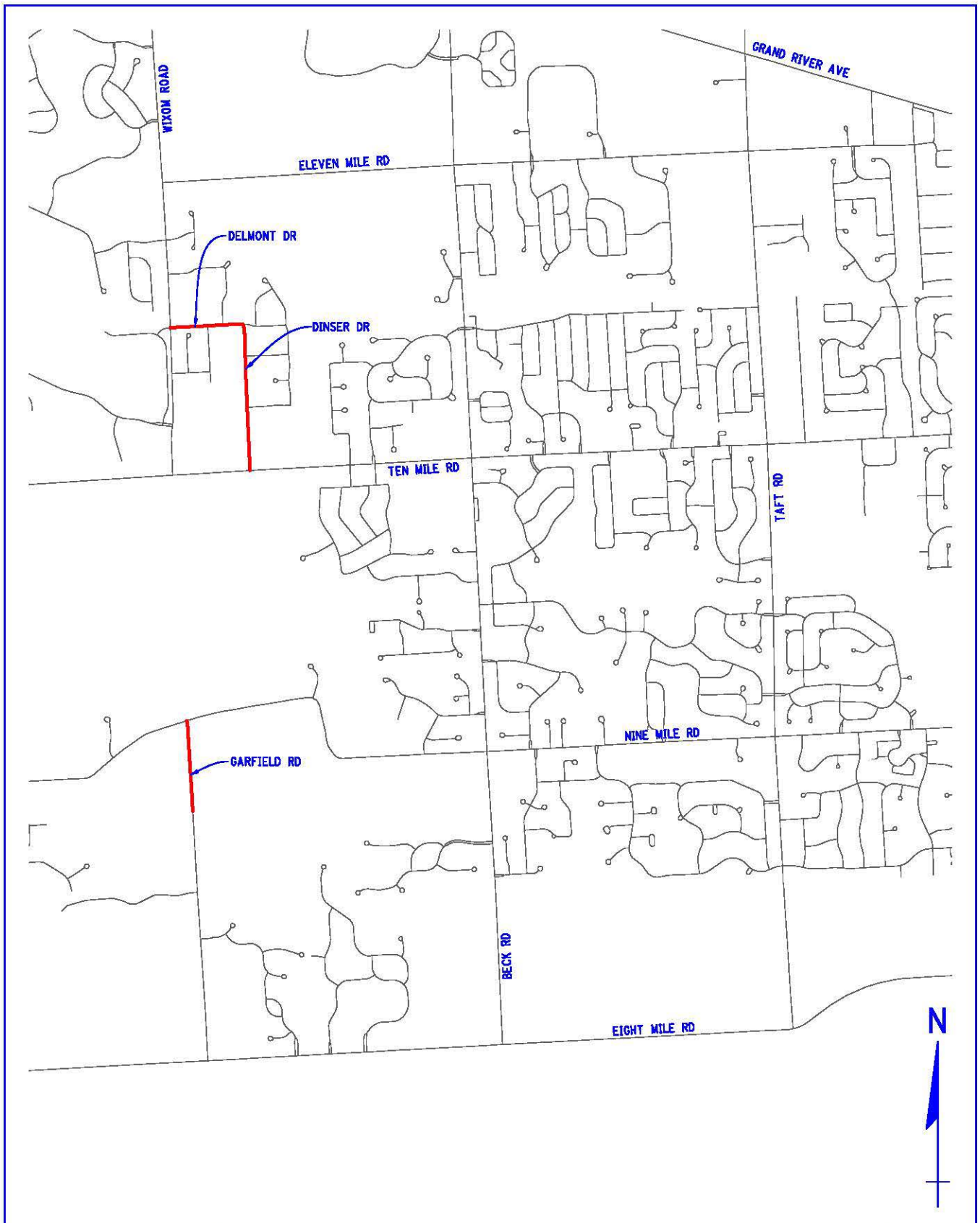
If 12 ½ Mile Road and Dixon Road are reconstructed with curb and gutter in the future, then they may not be good candidates for including in the Chip Seal program. The chip seal work on these roadways *and* included in Table 1 is \$89,500. The cost of improvements in Table 1 excluding the one-time base/drainage improvements and the one-time double chip seal work on Dixon and 12 ½ Mile Road comes to approximately \$610,000.

Other roadways not evaluated as part of this study, but which have previously been chip sealed also may be candidates for including into the chip seal program. If 10% is added to cover additional roadways, then total cost to chip seal all of the roadways in the program once would be perhaps \$700,000 (in 2014 dollars).

The design life of a chip seal is typically 4 to 6 years, but varies significantly depending upon the traffic volumes, truck volumes, and underlying soil/roadway conditions. The roadways evaluated for this project are in much better condition than what would be expected given the dates that the last chip seals were performed. This likely is due to the low traffic volumes and favorable underlying roadway conditions. 8 years between chip seals appears to be reasonable for keeping these roadways in good condition.

Using a cost for one cycle of \$700,000 and an 8 year cycle, an average annual budget of \$90,000 per year (in current dollars) should be adequate to establish a chip seal program once the initial improvements are completed. Each of the roadways included in the program should be evaluated at least once every two years. To maximize design life, crack sealing and patching should be done between chip seals.

To increase efficiency, large contracts with a large amount of chip sealing and/or crack sealing/patching should be used. To ensure this is done, a small contract with just crack sealing and patching could be done on odd numbered years (approximately \$10,000), and a larger contract with crack sealing and chip sealing (approximately \$170,000) done on even numbered years.



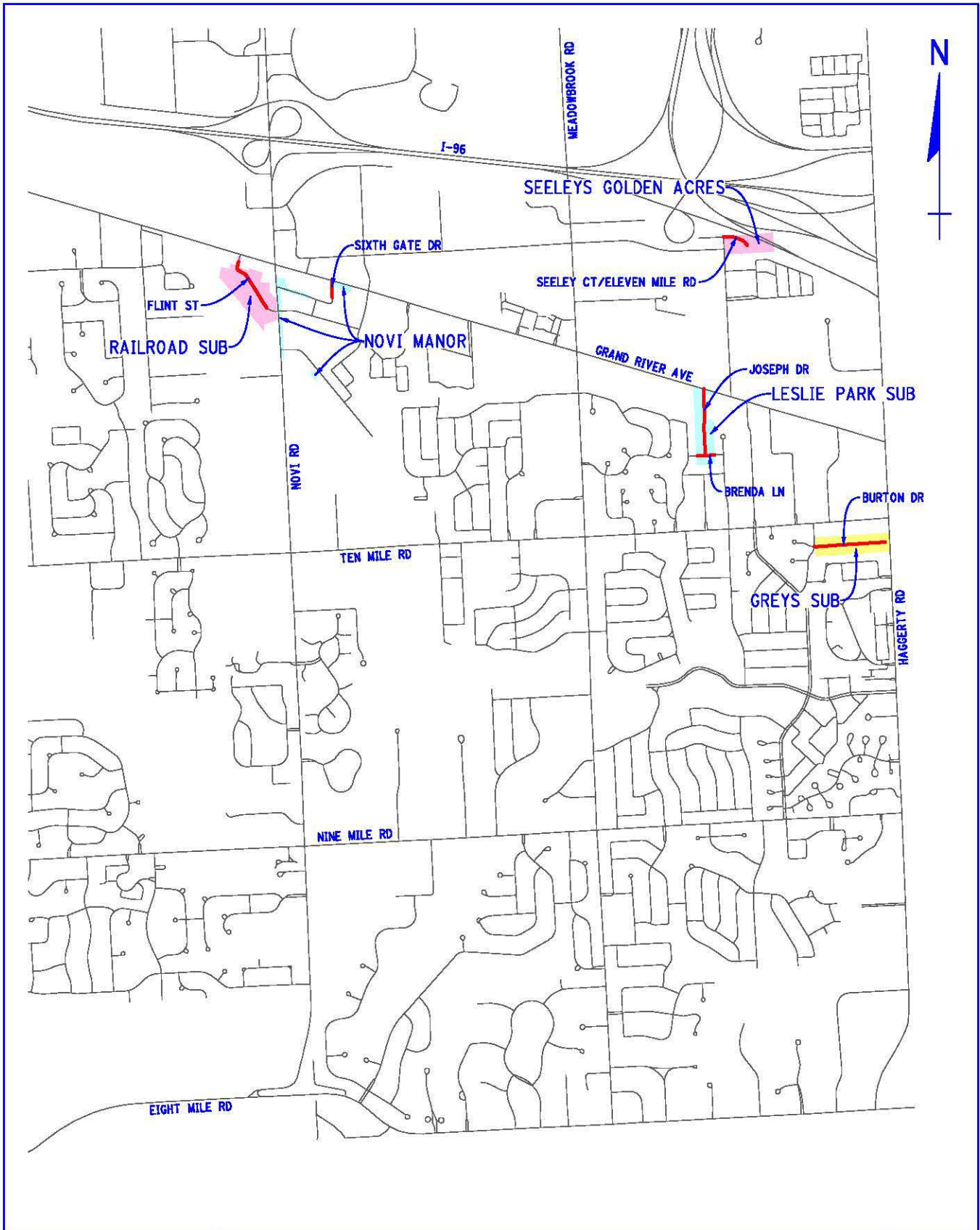
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CITY OF NOVI - 2013 CHIP SEAL STREET EVALUATION

SOUTHWEST LOCATION MAP

FIGURE

1

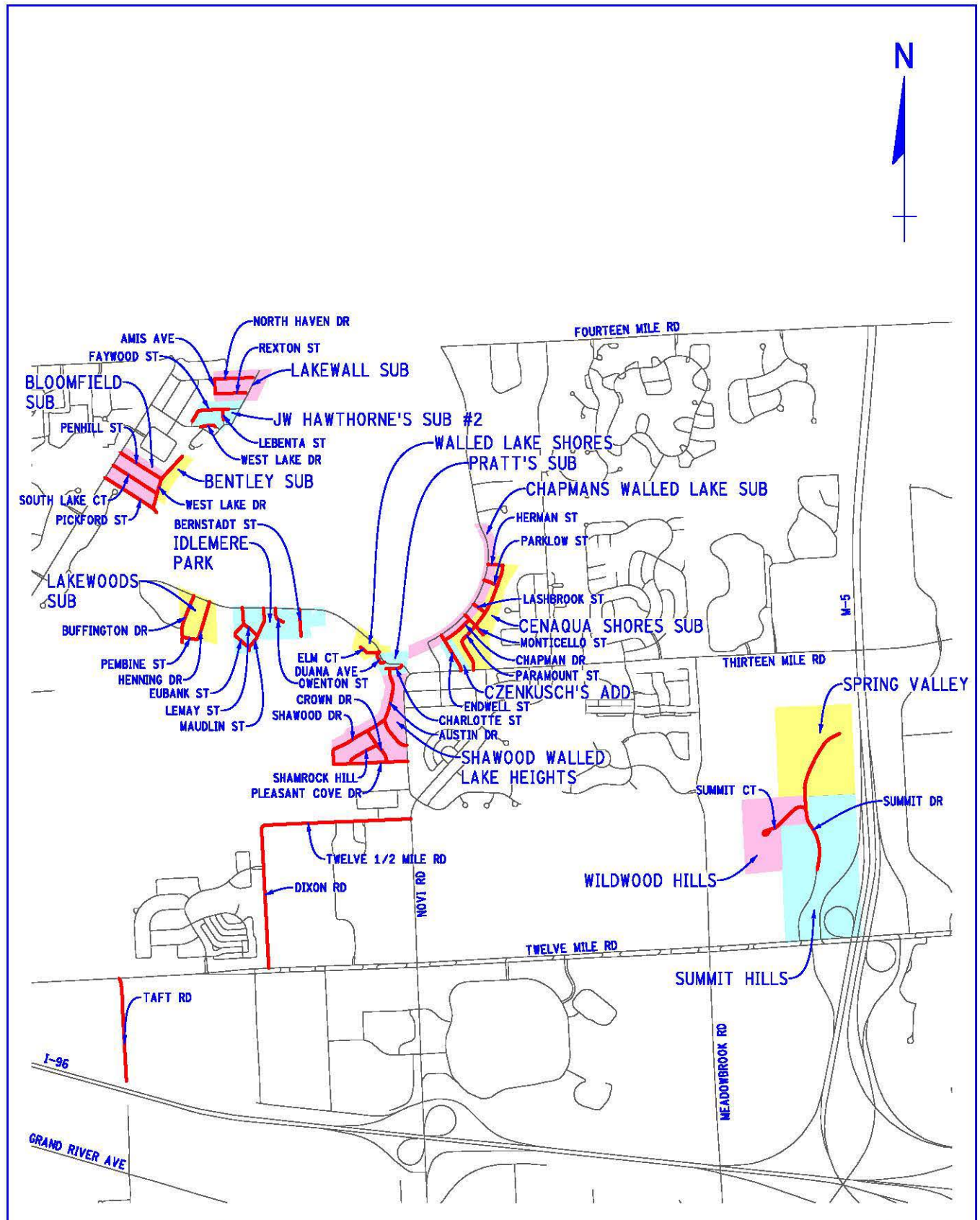


CITY OF NOVI - 2013 CHIP SEAL STREET EVALUATION

SOUTHEAST LOCATION MAP

FIGURE

2



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CITY OF NOVI - 2013 CHIP SEAL STREET EVALUATION

NORTHEAST LOCATION MAP

FIGURE

3