



## CITY of NOVI CITY COUNCIL

Agenda Item I  
February 29, 2016

**SUBJECT:** Approval to award an amendment to the professional services agreement with The Corradino Group of Michigan, Inc., for the Thoroughfare Master Plan, in the amount of \$18,079 to complete an updated Scoping Study for Beck Road Widening (Eight Mile to Grand River).

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

**CITY MANAGER APPROVAL:** *DA*

EXPENDITURE REQUIRED	\$ 18,079
AMOUNT BUDGETED	\$ 18,100
APPROPRIATION REQUIRED	\$ 0
LINE ITEM NUMBER	204-204.00-805.091

### BACKGROUND INFORMATION:

One of the short term goals from the early budget input session with City Council on January 9, 2016 was to accelerate the future widening of and other improvements to Beck Road. The goals from the early budget input session are used by the City Manager in the development of the 2016-17 proposed budget. The first step in meeting this short term goal is to update the Beck Road Scoping Study that was completed in 2006 to determine current project costs, identify right-of-way and easements that are needed for the project, and to re-evaluate the proposed cross-section for the road. Staff was able to identify funding in the current fiscal year for an updated scoping study using savings from winter road maintenance, which is trending under budget.

This scope of work is in-line with the work on the Thoroughfare Master Plan that is being completed by The Corradino Group (awarded by City Council on October 12, 2015). Since Corradino is already reviewing data and running models for the rest of the City, staff believes that there would be savings in having Corradino complete the Beck Road Study update.

Once awarded, the study will be complete within two months and will be a useful tool to identify the amount of funding needed to meet the short term goal.

**RECOMMENDED ACTION:** Approval to award an amendment to the professional services agreement with The Corradino Group of Michigan, Inc., for the Thoroughfare Master Plan, in the amount of \$18,079 to complete an updated Scoping Study for Beck Road Widening (Eight Mile to Grand River).

	1	2	Y	N
<b>Mayor Gatt</b>				
<b>Mayor Pro Tem Staudt</b>				
<b>Council Member Burke</b>				
<b>Council Member Casey</b>				

	1	2	Y	N
<b>Council Member Markham</b>				
<b>Council Member Mutch</b>				
<b>Council Member Wrobel</b>				

**City of Novi, Michigan**  
**Authorization for Additional Services # 1**

Project: **Engineering Services for:**  
Novi Thoroughfare Master Plan

Date: 2/29/16

**Description of Additional Services**

Update 2006 Beck Road Scoping Study

**Original scope of work:**

Thoroughfare Master Plan as awarded by City Council on October 12, 2015 and per the agreement between the Corradino Group and the City.

Amount authorized for original scope: \$119,480

**Proposed scope of work:**

**See attached.**

Proposed budget amount for revised scope: \$137,559

Based on the revised scope of services, we request authorization for an increase of \$18,079 to the amount authorized under the previous scope of services.

**The Corradino Group**

Requested by: \_\_\_\_\_ Date: \_\_\_\_\_  
Name and Title

**CITY OF NOVI**

Reviewed by: \_\_\_\_\_ Date: \_\_\_\_\_  
Brian Coburn, Engineering Manager

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Rob Hayes, Director of Public Services

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Sue Morianti, Purchasing Manager

## SCOPE OF WORK

**Project:** Beck Road Improvements Cost Update  
**Route:** Beck Road  
**County:** Oakland, MI  
**Termini:** 8-Mile Road to Grand River Avenue  
**Length:** 3.7 Miles  
**Consultant:** The Corradino Group  
**Consultant PM:** Joe C. Corradino  
 jccorradino@corradino.com  
 Mobile: 5026455732  
**Date:** 2/3/16

### WORK TO BE PERFORMED:

The following scope of work is offered to the City of Novi by The Corradino Group (Corradino) to update cost information presented in the report “Scoping Study Beck Road Eight Mile Road to Grand River Avenue”, prepared for the City of Novi Engineering Department in December 2006 (Project No. G06496). The purpose of that project was to provide the City with options for future improvements along Beck Road between Eight Mile Road and Grand River Avenue. The improvements recommended in the study were listed as Short-Term or Long-Term. This proposal only addresses the Long-Term improvements by widening Beck Road from the existing two lanes to a 5-lane cross section or a 4-lane boulevard, depending on location. The recommended improvements are provided in Table 1.

**TABLE 1 – LONG-TERM CAPACITY IMPROVEMENTS**

Segment	Cross Section	Estimate (2006 dollars)	Parcels Affected (ROW needs)	Notes
8 to 9 Mile	5 lanes	\$3,215,000	28	The eastern half of the southern half mile is in the City of Northville
9 to 10 Mile	5 lanes at the mile roads, with a 4-lane boulevard for middle 3,200 feet	\$3,153,500	18	
10 to 11 Mile	5 lanes at the mile roads, with a 4-lane boulevard for the middle 3,500 feet	\$3,418,000	6	
11 Mile to Grand River	5 lanes	\$1,826,000	13	

Source: Table 3 Scoping Study Beck Road Eight Mile Road to Grand River Avenue (2006)

Because of the time that has passed since the original scoping study, updates to the cost estimates are needed. The work items to do that are as follows and are to be performed by Corradino:



## I. UPDATE CONSTRUCTION COST ESTIMATES

Task I includes updating construction and right-of-way costs for Long-Term Improvements to the current year. Utility relocation costs do not appear to be included in the 2006 Beck Road Scoping Study. Corradino will include anticipated utility relocation costs in the updated estimates, if desired by the City. If so, underground utilities will be identified by the City of Novi. The individual tasks are as follows:

1. Corradino will update to 2016 the construction cost estimates for long-term improvements cited in the 2006 Beck Road Scoping Study utilizing the average unit prices of construction materials and right-of-way costs estimated in coordination with the City of Novi. The Long-Term Improvements listed in Table 1 will be updated. As in the scoping study, this will be done to a planning level, with no survey or design services.
2. Corradino will develop a Cost Update Technical Memorandum.
3. The draft Cost Update Technical Memorandum will be submitted for review, and comments by the City of Novi will be addressed by Corradino in finalizing the memo.

## II. TRAFFIC STUDY

***It should be noted that the recommendations in the 2006 Scoping Study still appear valid. Average Daily Traffic volumes have not increased significantly in the area, and there have been few new developments along the Beck Road Corridor. Therefore, the City may determine Task II to be unnecessary.***

Task II includes a traffic study using field-collected turning movement counts to determine appropriate turn-lane lengths and other improvements similar to those proposed in the 2006 Beck Road Scoping Study. Corradino will develop “before” and “after” traffic simulation models of traffic operations. Through Corradino’s work on the Major Thoroughfare Plan, it has been determined that the PM Peak Hour is the critical traffic period. Therefore, the analysis will be based on the PM Peak Hour. The individual tasks to be developed by Corradino are as follows:

1. Collect turning movement traffic counts from 3-6 PM, when school is in session, any Tuesday, Wednesday, or Thursday for the intersections listed below. Bicycle and pedestrian activity will be collected, also.
  - a. Beck Road at 8-Mile Road
  - b. Beck Road at 9-Mile Road
  - c. Beck Road at 10-Mile Road
  - d. Beck Road at 11-Mile Road
  - e. Beck Road at Grand River Avenue
2. Develop Synchro Models with existing traffic counts, existing roadway geometry, and with proposed improvements. Corradino will develop PM peak hour models.
3. Develop future year traffic turning movement projections.
4. Develop PM peak hour Synchro Models with future (projected) traffic data, existing roadway geometry, and with proposed improvements.
5. Develop GIS Investigation of right-of-way constraints (Wetlands, etc.)
6. Prepare a draft report for review and comment by the City of Novi. Corradino will address all comments in preparing the final version of the document.

### III. SCHEDULE

Submittal of the Draft Construction Cost Update Memorandum (Task I) shall be within 4 weeks from receiving the notice to proceed. The Draft Traffic Study (Task II), if desired, shall be submitted within 8 weeks from receiving the notice to proceed. This schedule is dependent upon Corradino's timely receipt from the City of requested information.

### IV. MANPOWER ESTIMATE AND FEE

*Because the City may determine that only Task I is needed, its fee is provided separately*

- *The fee for Task I Update Cost Estimates tasks is \$5,922.29.*
- *The fee for Task I and II combined is \$18,079.09. This includes \$2,030.00 for field data collection by a vendor.*

**TABLE 2: MANPOWER ESTIMATE**

Novi Michigan Beck Road Improvement Update							
Manpower Estimate for Cost Update & Traffic Study							
COUNTY: Oakland	ROUTE: Beck Rd.	LENGTH:	3.7				
TERMINI: Eight Mile to Grand River	DATE OF ESTIMATE:	2/3/2016					
CONSULTANT: The Corradino Group	ESTIMATE PREPARED BY:	JHS					
SCOPE: (See attached)							
Hours per Personnel Class							Task Total
PM	PE	JR ENG	TECH	PLAN	CL		
<b>I. Update Cost Estimates</b>							<b>36</b>
1	Update Cost Estimates*	16					
2	Develop Update Memo	16					
3	Address Client Comments	4					
<b>II. Traffic Study</b>							<b>64</b>
1	Traffic Counts (by Count Firm)						
2	Develop Synchro Models Existing Counts, Existing Geometry, Proposed Improvements, PM Peak Hour	8					
3	Develop Future Projections	12					
4	Develop Synchro Models Future (Projected) Volumes, Existing Geometry, Proposed Improvements, PM Peak Hour	4					
5	GIS Investigation of Environmental Constraints (Wetlands, etc.)			8			
6	Develop Report with Figures	24					
7	Address Client Comments	8					
<b>HOURS PER CLASSIFICATION</b>		<b>0</b>	<b>92</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>
<b>TOTAL HOURS</b>		<b>100</b>					
<b>TOTAL DAYS</b>		<b>12.5</b>					

Class: PM = Project Manager, PE = Engineer, JR ENG = Junior Engineer, TECH = Technician, PLAN = Planner, CL = Clerical

TABLE 4: FEE ESTIMATE – TASKS I & II (COST UPDATE AND TRAFFIC STUDY)

Novi Michigan Beck Road Improvement Update							
Fee Estimate for Cost Update & Traffic Study							
COUNTY: Oakland	ROUTE: Beck Rd.	LENGTH: 3.7					
TERMINI: Eight Mile to Grand River							
CONSULTANT: The Corradino Group							
SCOPE: (See attached)	DATE OF ESTIMATE: 2/3/2016						
	<b>Hours per personnel class</b>						
<b>LABOR COST ESTIMATES</b>	<b>PM/PIC</b>	<b>PE</b>	<b>JR ENG</b>	<b>Bowers</b>	<b>PLAN</b>	<b>CL</b>	
Total Hours from Estimate	0	92	0	8	0	0	
Direct Labor Rate / Class		\$ 54.59		\$ 37.00			\$ -
Direct Labor Cost / Class	\$ -	\$ 5,022.28	\$ -	\$ 296.00	\$ -	\$ -	\$ -
Total Direct Labor							\$ 5,318.28
Overhead (Fed: 171.88%, State: 145.00%)							\$ 9,141.06
Fee (12%)							\$ 1,499.75
<b>Total Labor Charges</b>							<b>\$ 15,959.09</b>
<b>CORRADINO DIRECT COST ESTIMATES</b>							
Mileage (1 site trips + local agencies + misc.)	0	miles @	\$ 0.47	/ mile =	\$ -		
Hotel (n/a)	0	Rooms @	\$ 89.00	/room =	\$ -		
Travel Day Per Diem (n/a)	0	Travel Days	\$ 38.25	/day/person	\$ -		
Full Day Per Diem (n/a)	0	Full Days	\$ 51.00	/day/person	\$ -		
Printing Report	600	sheets @	\$ 0.10	/ sheet =	\$ 60.00		
Printing Functional Plans	60	sheets @	\$ 0.50	/ sheet =	\$ 30.00		
Tax Maps	0	maps @	\$ 8.00	/ map =	\$ -		
<b>CORRADINO Total Direct Expenses</b>							<b>\$ 90.00</b>
<b>SUBCONSULTANT DIRECT COST ESTIMATES</b>							
Count Firm (Assume Quality Counts)	\$						2,030.00
	\$						-
<b>Subconsultant Total</b>							<b>\$ 2,030.00</b>
<b>TOTAL DIRECT COST ESTIMATE (CORRADINO DIRECT COSTS + SUBCONSULTANTS)</b>							<b>\$ 2,120.00</b>
<b>ESTIMATE OF COSTS AND FEES FOR STUDY PREPARATION</b>							<b>\$ 18,079.09</b>

COUNT FIRM ESTIMATE:

# Estimate



**Estimate Date:** 2/3/2016

**Order Date:** 2/1/2016

**Bill To:** Corradino Group  
278 Franklin Road, Building IV, Suite 238  
Brentwood, TN 37027  
(615) 372-6972

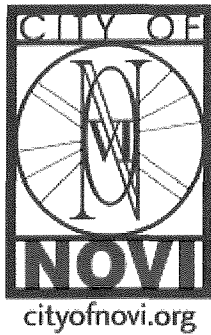
ORDER NO	ORDER DATE	PROJECT NAME	PAYMENT TERMS	ORDER BY
137056	2/1/2016	Novi, MI	Net 60 Days	Jon Storey

QTY	DESCRIPTION		TOTAL
4	2-Person Turn Count	330.00	1320.00
	4 Location(s) for time period(s): 3:00 PM -- 6:00 PM (Midweek)		
	- Beck Rd -- 10 Mile Rd, Novi, MI		
	- Beck Rd -- 11 Mile Rd, Novi, MI		
	- Beck Rd -- 8 Mile Rd, Northville, MI		
	- Beck Rd -- Grand River Ave, Novi, MI		
1	1-Person Turn Count	215.00	215.00
	1 Location(s) for time period(s): 3:00 PM -- 6:00 PM (Midweek)		
	- Beck Rd -- 9 Mile Rd, Novi, MI		
1	Travel	495.00	495.00
		<b>TOTAL</b>	<b>2,030.00</b>

Balances unpaid by end of Payment Term (listed above) will be charged 1.5% interest per month

Quality Counts, LLC  
7409 SW Tech Center Dr, STE 150  
Tigard, OR 97223  
(877) 580-2212  
qualitycounts.net

# MEMORANDUM



**TO:** PETE AUGER, CITY MANAGER  
**FROM:** VICTOR CARDENAS, ASSISTANT CITY MANAGER  
**SUBJECT:** EARLY INPUT BUDGET SESSION  
**DATE:** JANUARY 14, 2016

---

On Saturday, January 9, 2016 City Council held their early budget input session at the Police Training Center. This year City Council used a real-time online collaborative brainstorming application to anonymously brainstorm and prioritize goals into short-term goals (1-4 years) and long-term goals (5 or more years). The results of City Council's strategic session are attached. The goals that received a majority will be used to aid the City Manager in the creation of the 2016-17 Proposed Budget. The goals that received a majority from City Council are:

## **Nurture public services that residents want and value.**

### *Short Term*

- Make Improvements at Lakeshore Park
- Accelerate Beck Road widening and other improvements.
- Create a committee to study senior housing needs in Novi
- Complete the final segment of the 8 Mile Trail in the 2016-17 Budget
- Create a committee to study 10 Mile Road improvements and to approach the County
- Create Corridor Authority for Grand River Meadowbrook to Wixom and 12 Mile from Haggerty to Wixom

### *Long Term*

- Create a plan for Beck Road
- Act as a facilitator to get the Main Street development back on track

- Work with Road Commission to create a plan for the entire 10 Mile Road corridor that improves traffic flow while respecting residential areas
- Complete ITC Trail
- Evaluate need for additional senior citizen housing and determine if Novi wants to continue to provide these types of facilities or leave to private companies

### **Operate a world-class sustainable local government.**

#### *Short Term*

- Create a permeant, dedicated CIP millage
- Have ordinance review committee review all city ordinances in a systematic manner
- Create and develop Novi Cable Commission
- Pursue additional shared services where we can save money or increase revenue through working with other governments to reduce redundancies

#### *Long Term*

- Manage operational equipment and buildings via data driven decision making. Streamline turnover of large capital items such as Fire Trucks through strategic planning for obsolescence and wear, to even out year-to-year replacement costs.
- Analyze land uses to identify which developments generate the most taxes and encourage those through zoning changes and incentives.
- Develop CIP-like plan for other financial obligations (pension fund, etc.)

### **Value and build a desirable and vibrant community for residents and businesses alike now and into the future.**

#### *Short Term*

- DPS Facility improvements
- Evaluate and modernize the senior transportation system to maximize efficiency
- Amend ordinances to require new residential developments to provide neighborhood parks

- Create Economic Advisory Board consisting of City Officials, community members,
- Enhance promotion of local businesses to help drive further economic development Stakeholders

#### *Long Term*

- Adopt a multi-year plan for upgrading all of our major commercial corridors (Grand River, Novi Road, 12 Mile) with streetlights, landscaping, etc. Make our main roads look good!
- Encourage and support in incubator or co-working space for small business start-ups
- Encourage development around Adell property
- Establish plan to revitalize Meadowbrook & Ten Mile retail area
- Revamp drain millage to expand purpose to include funding preservation of natural areas and acquisition of park land

### **Invest properly in being a Safe Community at all times for all people.**

#### *Short Term*

- Create a committee that designs the plan to relocate Fire Station # 1
- Increase Public Safety Millage to 2.0 mil
- Add 1 Police Officer and 1 Fire Fighter in current budget year and next budget year
- Fund safety improvements for at least 2 of the top 10 dangerous intersections in 2016 -17 budget

#### *Long Term*

- Develop plan to relocate Fire Station 1
- Determine targets for police staffing levels for next 10 years
- Increase staffing and support for overnight fire services.
- Fund safety improvements at all top 10 dangerous intersections



**Scoping Study  
Beck Road  
Eight Mile Road to Grand River Avenue**

**Prepared for:  
City of Novi Engineering Department**



**December 2006  
Project No. G06496**

**ftc&h**

**Fishbeck, Thompson, Carr & Huber  
engineers • scientists • architects • constructors**

**SCOPING STUDY**  
**BECK ROAD**  
**EIGHT MILE ROAD TO GRAND RIVER AVENUE**

**PREPARED FOR:**  
**CITY OF NOVI ENGINEERING DEPARTMENT**  
**NOVI, MICHIGAN**

**DECEMBER 1, 2006**  
**PROJECT NO. G06496**

# TABLE OF CONTENTS

FREQUENTLY USED ABBEVIATIONS AND ACRONYMS .....	IV
1.0 EXECUTIVE SUMMARY .....	1
1.1 Purpose and Goals of Scoping Study .....	1
1.2 Background Information .....	1
1.3 Short-Term Capacity Improvements .....	2
1.4 Short-Term Condition Improvements .....	4
1.5 Long-Term Capacity Improvements .....	4
1.6 Recommended actions .....	5
2.0 REGIONAL AND LOCAL BACKGROUND AND PERSPECTIVE .....	7
2.1 Traffic Volumes and Accidents .....	7
2.2 City Planning Information .....	9
2.3 regional planning Information .....	9
3.0 RESIDENT INPUT AND FEEDBACK .....	11
4.0 ENGINEERING EVALUATION .....	12
4.1 Short-Term Capacity Evaluation .....	12
4.2 Long-Term Capacity Evaluation .....	13
4.3 ROW Impacts .....	14
4.4 Utility information .....	14
4.5 Geotechnical information .....	15
5.0 SHORT-TERM CAPACITY IMPROVEMENTS .....	16
5.1 Eight Mile Road Intersection .....	16
5.2 Nine Mile Road Intersection .....	17
5.3 Ten Mile Road Intersection .....	17
5.4 Eleven Mile Road Intersection .....	18
6.0 SHORT-TERM CONDITION IMPROVEMENTS .....	19
7.0 LONG-TERM CAPACITY IMPROVEMENTS .....	20
7.1 Eight Mile Road to Nine Mile Road .....	21
7.1.1 Roadway Section .....	21
7.1.2 Environmental Concerns .....	21
7.1.3 Geotechnical Information .....	21
7.1.4 ROW Impacts .....	22
7.1.5 Pathways .....	22
7.1.6 Design and Construction Concerns .....	22
7.2 Nine Mile Road to Ten Mile Road .....	23
7.2.1 Roadway Section .....	23
7.2.2 Environmental Concerns .....	23
7.2.3 Geotechnical Information .....	23
7.2.4 ROW Impacts .....	24
7.2.5 Pathways .....	24
7.2.6 Design and Construction Concerns .....	24
7.3 Ten Mile Road to Eleven Mile Road .....	24
7.3.1 Roadway Section .....	24
7.3.2 Environmental Concerns .....	25
7.3.3 Geotechnical Information .....	25
7.3.4 ROW Impacts .....	25
7.3.5 Pathways .....	25
7.3.6 Design and Construction Concerns .....	26

## TABLE OF CONTENTS

7.4	Eleven Mile Road to South of Grand River Avenue.....	26
7.4.1	Roadway Section .....	26
7.4.2	Environmental Concerns.....	26
7.4.3	Geotechnical Information .....	26
7.4.4	ROW Impacts.....	27
7.4.5	Pathways.....	27
7.4.6	Design and Construction Concerns .....	27
8.0	IMPLEMENTATION PLAN.....	28
8.1	Short-Term Activities.....	28
8.2	Long-Term.....	28

## LIST OF FIGURES

Figure 1	Regional and Site Location Map
Figure 2	Beck Road Traffic Count
Figure 3	8 Mile Road to Grand River Accidents 8/1/2005 – 7/31/2006
Figure 4	Beck Road Accidents by Hour 8 Mile to Grand River 8/1/2005 – 7/31/2006
Figure 5	Comments and Questions from Public Information Session October 3, 2006
Figure 6	Summary of Preferred Options from Public Information Session October 3, 2006
Figure 7	Summary of Comments by Response October 3, 2006
Figure 8	Comments and Questions from Public Information Session November 2, 2006
Figure 9	Beck Road at 8 Mile Intersection Short-Term Capacity Improvements
Figure 10	Beck Road at 9 Mile Intersection Short-Term Capacity Improvements
Figure 11	Beck Road at 10 Mile Intersection Short-Term Capacity Improvements
Figure 12	Beck Road at 11 Mile Intersection Short-Term Capacity Improvements
Figure 13A	Beck Road 8 Mile to 9 Mile Long-Term Capacity Improvements
Figure 13B	Beck Road 8 Mile to 9 Mile Long-Term Capacity Improvements
Figure 13A	Beck Road 8 Mile to 9 Mile Long-Term Capacity Improvements
Figure 14A	Beck Road 9 Mile to 10 Mile Long-Term Capacity Improvements
Figure 14B	Beck Road 9 Mile to 10 Mile Long-Term Capacity Improvements
Figure 15A	Beck Road 10 Mile to 11 Mile Long-Term Capacity Improvements
Figure 15B	Beck Road 10 Mile to 11 Mile Long-Term Capacity Improvements
Figure 16	Beck Road 11 Mile to Grand River Long-Term Capacity Improvements

## LIST OF TABLES

Table 1	Short-Term Condition Improvements .....	3
Table 2	Short-Term Intersection Capacity Improvements.....	4
Table 3	Long-Term Capacity Improvements .....	5
Table 4	8 Mile to Grand River Two-Way ADT Counts and Projections.....	8
Table 5	Short-Term Intersection Capacity Improvements.....	13
Table 6	Long-Term Capacity Improvements .....	16
Table 7	Comparative Analysis of Long-Term Capacity Sections .....	20

## TABLE OF CONTENTS

### LIST OF APPENDICES

Appendix 1	SEMCOG Letter
Appendix 2	1992 Birchler/Arroyo Associates Thoroughfare Update (Excerpt)
Appendix 3	1998 Birchler/Arroyo Associates Thoroughfare Update (Excerpt)
Appendix 4	Community Plans and Projections (Novi Master Plan Excerpt)
Appendix 5	SEMCOG RTP 2030 (Excerpt)
Appendix 6	Cost Estimates
Appendix 7	Annual Inflation Rate Factors
Appendix 8	Wetlands Information
Appendix 9	Public Information Meeting No. 1 Comment Cards*
Appendix 10	Utility Information*
Appendix 11	Geotechnical Information*
Appendix 12	Beck Existing ROW Review*

\*included on compact disc in PDF file format

## TABLE OF CONTENTS

### FREQUENTLY USED ABBEVIATIONS AND ACRONYMS

ADT	average daily traffic
Birchler-Arroyo	Birchler-Arroyo Associates
City	City of Novi
CMAQ	Congestion Mitigation and Air Quality Improvement Program
Council	Novi City Council
DPS	Department of Public Services
DPW	Department of Public Works
EB	eastbound
FTC&H	Fishbeck, Thompson, Carr & Huber, Inc.
FY	fiscal year
Grand River	Grand River Avenue
HMA	hot-mix asphalt
MDEQ	Michigan Department of Environmental Quality
MDOT	Michigan Department of Transportation
mph	miles per hour
NB	northbound
NE	northeast
NW	northwest
PASER	Pavement Surface Evaluation and Rating
RCOC	Road Commission for Oakland County
RFP	Request for Proposals
ROW	right-of-way
RTP	<i>Regional Transportation Plan</i>
SB	southbound
SE	southeast
SEMCOG	Southeast Michigan Council of Governments
SW	southwest
TIP	Transportation Improvement Program
VPD	vehicles per day
WB	westbound

## **1.0 EXECUTIVE SUMMARY**

### **1.1 PURPOSE AND GOALS OF SCOPING STUDY**

In August, 2006, FTC&H was selected to perform the *Beck Road Scoping Study* based on a proposal in response to the Request for Proposals (RFP) issued by the City of Novi. The stated purpose of the project is to provide Council with options for potential future improvements on Beck Road from Eight Mile Road to Grand River Avenue. The scope of services included review, estimates, and geotechnical services to be used in the planning, budgeting, and engineering of future work on the Beck Road corridor.

Services completed as a part of this study include:

- Pavement cores and soil borings and a full geotechnical report with recommendations.
- Locating and identifying type of wetland and woodland areas within the influence of Beck Road.
- Review of several alternatives for condition and capacity improvements.
- Incorporating non-motorized pathways.
- Presenting preliminary and developed information to the public at two open meetings.
- Reviewing of traffic counts, growth forecasts, and accident information.
- Developing of potential typical cross sections and layout options.
- Determining potential ROW impacts.
- Preparing cost estimates for each alternative.
- Conducting several meetings and communicating with a scoping committee comprised of City staff.

### **1.2 BACKGROUND INFORMATION**

During the initial stages of the study, it was determined that Beck Road should be evaluated from a regional perspective. The roadway is a direct connection between M-14 to the south and the new interchange at I-96 and Grand River Avenue. The study area, as well as the areas directly north and south of the City limits, is still experiencing growth and development. The portion of Beck Road south of Six Mile Road in Northville Township has been reconstructed to a four-lane boulevard and, according to the Regional Transportation Plan (RTP) prepared by the Southeast Council of Governments (SEMCOG), the portion of Beck Road from Six Mile Road to Eight Mile Road is slated to be a five-lane section, as is the portion of Beck Road north of Grand River Avenue in the City of Wixom. The RTP covers the anticipated needs of the region to 2030 and, according to the plan, the expansion of Beck Road outside Novi is planned to occur during the next 10 to 20 years.

Within the City, Beck Road's current pavement condition ranges from a PASER rating of 3 to 9 (10 being new). In the areas where pavement condition is poor, excessive noise is generated by trucks passing



over the cracked and pot-holed surface. Several areas of Beck are adjacent to wetland areas, making it likely that subgrade soils are poor. As part of this study, 39 pavement cores and soil borings were collected and evaluated; and an additional 9 borings were obtained outside the existing roadway to evaluate soils in areas where widening could occur. In 18 of the 48 borings, fill soils considered unsuitable for the support of pavement were encountered; 13 of these were within the existing paved roadway.

Traffic counts and observations indicate that during peak periods, most intersections along Beck Road back up with motorists experiencing moderate to long delays. Increasing the capacity of Beck Road to handle the current and projected demands will require planning to ensure that project budgeting and scheduling align with the RTP, as well as the needs and desires of the City and its residents.

At an October 3, 2006, public information meeting, residents were presented with several short- and long-term options to improve the capacity of the roadway. The residents in attendance were asked to provide feedback on the long-term options presented.

At the second public meeting on November 2, 2006, the preferred short- and long-term options were presented and more clearly detailed. It was emphasized that the short-term options may occur during the next one to six years, and the long-term options would depend on actual growth. Many residents were interested in the potential scope of the work and expressed an interest in being involved and informed in the process. Any changes to the Beck Road corridor will need to balance the needs of neighboring residents with the recognition that the vast majority of users are primarily passing through this noncommercial area.

The following pages present an area-specific summary of the options and staging for potential projects. The following sections contain detailed descriptions and items of concern for each area of Beck Road.

### **1.3 SHORT-TERM CAPACITY IMPROVEMENTS**

At each mile road intersection along Beck Road there is a traffic signal and various accommodations for turning movements. For example, lack of a NB right-turn lane at Ten Mile leads to delays for both through traffic and turning vehicles during peak periods. If Beck Road were to be widened, there would likely be a minimum of two lanes each NB and SB, in addition to a center left-turn lane at each intersection. In the interim, congestion relief at the intersections can be realized by adding or upgrading turn lanes. Table 1 summarizes the recommended intersection improvements that will increase capacity and should be implemented prior to considering expansion along the entire corridor.

Based on comments received during the public meetings, upgrading the intersections prior to considering expanding the rest of Beck Road is very favorably viewed since current congestion can be mitigated by intersection improvements. After intersection improvements are implemented, the effect of the improvements can be reviewed, and a more accurate assessment of the time frame for further potential expansion of Beck Road can be performed. The proposed intersection modifications will align with future widening of Beck Road if or as it occurs.

**Table 1 - Short-Term Intersection Capacity Improvements**

Intersection	Time Frame (years)	Improvements	Estimate (2006 dollars)	Notes
10 Mile	1 – 4	Add dedicated right-turn lanes to NB, SB, and EB legs; extend WB right-turn and EB left-turn lanes. Replace traffic signal.	\$405,600	ROW impacts in all four quadrants; four parcels affected
9 Mile	2 – 5	Extend existing dedicated NB right-turn lane.	\$36,000	ROW impact on two parcels
11 Mile	5 – 10	Add dedicated right-turn lanes to EB and WB legs.	\$238,000	ROW impact in SW quadrant
8 Mile	5 – 15	Add dedicated right-turn lane to SB leg.	\$216,000	To coordinate with section south of 8 Mile

For future-year inflation factor estimates refer to Appendix 7.

Estimate includes approximate cost of ROW acquisition.

Refer to Short-Term Capacity Improvements in Section 5 for detailed information.

## 1.4 SHORT-TERM CONDITION IMPROVEMENTS

Based on the assumption that any expansion of Beck Road within the City will be coordinated with the timing of improvements in Northville Township and/or the City of Wixom (in 15 to 20 years), preservation of the existing roadway will be required. The exact type of rehabilitation of each roadway segment will need to be evaluated closer to the time at which the work will be performed, however, for planning purposes, Table 2 provides a summary of short-term (1 to 6 years) condition improvements.

**Table 2 - Short-Term Condition Improvements**

Segment	Time Frame (years)	Work Type	Estimate (2006 dollars)	Notes
11 Mile to Grand River	1 – 4	Mill and overlay	\$218,000	Replace wearing course from 10 Mile to new pavement near Providence Hospital.
10 to 11 Mile	1 – 4	Repair and overlay	\$466,000	Existing pavement is thin; overlay will result in longer life section.
9 to 10 Mile	2 – 5	Mill and overlay	\$495,000	North half is in good condition; aggregate shoulder requires grading to flatten in locations
8 to 9 Mile	3 – 6	Repair and overlay	\$464,000	Thin pavement, poor base; overlay to thicken section.

For future-year inflation factor estimates refer to Appendix 7.

Refer to Short-Term Condition Improvements in Section 6 for detailed information.

## 1.5 LONG-TERM CAPACITY IMPROVEMENTS

According to the SEMCOG 2030 RTP, it is planned that Beck Road be five lanes at the northern and southern borders of the City, within the City of Wixom and Northville Township, respectively (Appendix 5). The portion of Beck Road within the City is not currently in the 2030 RTP, however, the City engineering department is working with SEMCOG to add this and other roadways to the regional plan. As part of updating the City's master plan, Birchler-Arroyo performed studies in 1992 and 1998; all City roadways were examined. The reports recommended that Beck Road be upgraded to a four-lane divided section or a five-lane roadway throughout the corridor at "build-out" conditions, which, at the time the reports were written, was expected to occur between 2010 and 2020. An excerpt of the 1992 Birchler-Arroyo study is included as Appendix 2; an excerpt of the 1998 study is included as Appendix 3.

Based on Novi's traffic count predictions and the plans for the surrounding communities, Beck Road will need two lanes in each direction to convey the traffic coming from beyond the City limit, as well as to serve the residents as a major north-south road in conjunction with Novi, Haggerty, and Napier Roads, which are arterials spaced every other mile. This need for this widening appears to be 15 years distant

and, depending when Beck is improved outside the City and the results of intersection capacity improvements, may be as much as 20 to 25 years in the future.

In contemplating the potential widening of Beck Road, consideration was given to the fact that along several segments, successful access management and planning have resulted in very few minor road intersections and private driveways. These segments are candidates for a narrow (20-foot) boulevard section resulting in a four-lane divided roadway, which would allow for the addition of some landscaping to the corridor. Table 3 summarizes the recommended option for each segment.

**Table 3 - Long-Term Capacity Improvements**

Segment	Cross Section	Estimate (2006 dollars)	Parcels Affected (ROW needs)	Notes
8 to 9 Mile	5 lanes	\$3,215,000	28	The eastern half of the southern half mile is in the City of Northville
9 to 10 Mile	5 lanes at the mile roads, with a 4-lane boulevard for middle 3,200 feet	\$3,153,500	18	
10 to 11 Mile	5 lanes at the mile roads, with a 4-lane boulevard for the middle 3,500 feet	\$3,418,000	6	
11 Mile to Grand River	5 lanes	\$1,826,000	13	

For future-year inflation factor estimates refer to Appendix 7.

Estimates include the approximate cost of ROW acquisitions.

Refer to Long-Term Capacity Improvements in Section 7 for detailed information.

## 1.6 RECOMMENDED ACTIONS

The short-term condition and capacity improvements should be implemented within the next one to six years. A new wearing surface will help prevent damage from failing pavement and will greatly reduce the noise from trucks, which is a common resident complaint. Among the first steps is to get Beck Road listed on the 2030 RTP with the Oakland County Federal Aid Committee and SEMCOG to ensure the timing of upgrades is coordinated with surrounding areas. The described intersection improvements can be funded 80/20 (80% grant, 20% match) or better through the Congestion Mitigation and Air Quality Improvement Program (CMAQ) which is funding earmarked to reduce congestion and the corresponding pollution and ozone impacts; however, the application must be made through SEMCOG. Also, responding to the RCOG 2010-11 *Call for Projects* will put Beck Road “in line” for 80/20 federal funding for intersection improvements.

Requesting that SEMCOG add Beck Road to the 2030 RTP will ensure that as funding becomes available, it is considered in turn with other projects of merit. Grants received can be used for all aspects of roadway improvements, including ROW acquisition.

This scoping report can be the background for initial funding requests and may be expanded in the future. The proposed work in this study should be examined in the future, as standards may have changed; the estimates should also be reviewed based on construction material trends, real estate costs, and general inflation.

## 2.0 REGIONAL AND LOCAL BACKGROUND AND PERSPECTIVE

At the initial kickoff meeting for the scoping and engineering study, the discussion turned from existing capacity issues to a review of what has been done on Beck Road outside the study area. North of Grand River Avenue, the interchange with I-96 has been improved and reopened as a single-point urban interchange, increasing capacity to/from the freeway. Grand River Avenue has been upgraded to five lanes, and Providence Hospital is continuing to expand at Grand River Avenue. North of I-96, Beck Road is within the City of Wixom and, other than improvements related to the interchange reconstruction, has not been widened beyond two lanes.

South of Eight Mile, Beck Road is within Northville Township and under the jurisdiction of the Wayne County DPS. M-14 has an interchange with Beck Road south of Five Mile. From M-14 to Five Mile, Beck Road is five lanes, and from Five Mile to Six Mile it is four lanes with a narrow (20-foot) boulevard. The section of Beck Road from Six Mile to Eight Mile Road is two lanes with passing flares and turn lanes, similar to the sections in the City.

Further south, Beck Road crosses M-153 (Ford Road), and US-12 (Michigan Avenue). Beck Road is the only non-freeway route that is continuous from south of US-12 to north of I-96. The location of Beck Road in relation to these other roadways is depicted on Figure 1.

### 2.1 TRAFFIC VOLUMES AND ACCIDENTS

Currently, motorists traveling Beck Road experience delays at most intersections during peak periods (Monday through Friday, 7-9 a.m. and 4-6 p.m.) Traffic counts were obtained at the intersections from Eight Mile Road through Grand River Avenue. At Eight Mile Road, the counts were obtained by City DPW traffic collectors for a week in late August 2006. The other intersections have signals that are monitored under the RCOC FAST-TRAC system which utilizes camera-like sensors to detect traffic flow and adjusts the signal timing accordingly. These sensors are able to count vehicles; the RCOC supplied data for a week in May 2006. After reviewing the counts, Thursday was selected as being representative of a typical week. The counts were summarized by intersection with daily and peak-hour flows depicted on Figure 2. Raw traffic data are included in Appendix 13.

Directional traffic (just NB or SB) on Beck Road ranges from approximately 8,000 VPD to more than 12,000 VPD. The peak-hour flows are generally higher for NB traffic, with hourly totals exceeding 1,000 vehicles at NB Nine, Ten, and Eleven Mile Road and at SB Eleven Mile Road. The traffic counting devices are only able to distinguish between through and turning vehicles at locations where there is an existing turn lane. Nine Mile Road, for example, has right-turn lanes both NB and SB, while Ten Mile Road does not. Traffic counts at Nine Mile Road indicate that during peak periods, as many as to 300

vehicles per hour (of 1,000 total for the hour) make a right turn from Beck Road. Based on field observations during peak and off-peak travel times, NB Beck Road at Ten Mile Road experiences similar right-turn volume as a percentage of total traffic. However, at Ten Mile Road the right-turning vehicles impede through movement and most right-turning vehicles are unable to proceed on a red traffic signal as they can at Nine Mile Road, leading to longer backups at Ten Mile Road. Once a vehicle entered the queue, delays of 4 to 5 minutes to clear the intersection were observed.

Based on the recent traffic counts, the total ADT for Beck Road ranges from 17,000 to 24,000 VPD. Although this portion of Beck Road is primarily residential and developed, it can be assumed that traffic will continue to increase as development occurs north and south of the corridor. A traffic impact study for Providence Hospital by Tetra-Tech MPS, Inc., in January 2005, indicated an anticipated annual traffic increase of 4%. Data provided by SEMCOG indicates that traffic is expected to increase at a 1% annual rate (see Appendix 1 for the SEMCOG letter). The Providence study is useful for the area in immediately proximity to the hospital and is based on short-term projections through 2010, while the SEMCOG numbers reflect a regional perspective and are applicable over a longer term. For the purposes of this study, an annual growth rate of 1% was assumed, as recommended by SEMCOG. A summary of historical and current traffic counts, as well as estimates based on 1% and 4% growth factors are presented in Table 4.

**Table 4 - 8 Mile to Grand River Two-Way ADT Counts and Projections**

Year	Count/Projection	Source
1991	5,000 – 8,500	1992 Birchler/Arroyo Associates study
1997	13,500 – 17,000	1998 Birchler/Arroyo Associates study
2006	17,000 – 24,000	RCOC and City traffic counts
2010	18,000 – 25,000 (at 1%) 20,000 – 28,000 (at 4%)	
2020	19,500 – 28,000 (at 1%)	
2030	21,500 – 30,500 (at 1%)	

For an excerpt of the 1992 Birchler/Arroyo Study refer to Appendix 2.

For an excerpt of the 1998 Birchler/Arroyo Study refer to Appendix 3.

With assistance of the Novi Police Department, accident and citation data for a 12-month period (August 2005 through July 2006) were reviewed and are summarized in Figure 3. The accident information broken down by hour is presented in Figure 4. The data indicates a concentration of accidents near the Ten Mile Road intersection. The individual accident information sheets (UD-10 forms) were reviewed for this area and the majority of accidents (21 of 35) involved a rear-end collision. The reasons given by drivers and officers for hitting the car ahead of them varied, however, in many cases, the following vehicle did not stop in time when the leading vehicle slowed to turn right or slowed to stop for the signal. No geometric factors (curves, crests of hills, etc.) appear to contribute to the accidents.



## 2.2 CITY PLANNING INFORMATION

In 2005, the Novi City Council set several short- and long-term goals. In the fourth priority ranking of long-term goals is “Set Timetable for Beck Road Improvement - 8 Mile to Grand River.” The goal does not list what sorts of improvements are sought. Based upon discussions with the City Engineering Department, there is no specific cross-section or plan in mind, however, it was felt that Beck Road needed to be managed and planned to avoid issues that have occurred on other roads in the City and around the region.

In Novi, Beck Road is designated “major arterial”, indicating it is considered a principal route through the City. The City receives Act 51 funding from the State of Michigan which can be used for maintenance of any roadway within the City, provided that “major” roadways receive the highest priority. The funding does not dictate how many lanes a road will have, speed limit, or any other aspect of managing a road, other than that it shall be maintained in such a manner that costly repairs are not due to a lack of maintenance.

The City has established a “thoroughfare plan” as part of the Master Plan for Land Use. The plan describes the requirements and rationale for non-motorized pathways, access management, and driveway regulations. As portions of Beck Road were developed before the thoroughfare plan was in place, there are areas that lack access control and pathways, while areas developed later exhibit good access control as well as pathways, as described in the plan. The thoroughfare plan and associated figures from the current City Master Plan are included for reference in Appendix 4.

## 2.3 REGIONAL PLANNING INFORMATION

SEMCOG is the major regional planning organization in SE Michigan. The counties included in SEMCOG are: Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne. Membership in SEMCOG is open to all counties, cities, villages, townships, community colleges, and public universities within these counties. The group is primarily focused on the areas of regional economic development, environmental issues, and transportation planning, with the intent that shared goals can be achieved with mutual benefit.

Regarding transportation planning, SEMCOG compiles and maintains traffic count data, pavement condition surveys, and lists of current, planned, and potential roadway projects. The TIP is a listing of currently approved and potential projects intended for short-term funding and construction (2 to 5 years). SEMCOG also created and maintains a long-range RTP, currently the *2030 Regional Transportation Plan for Southeast Michigan*. The projects listed in the RTP have intended time frames divided into five-year increments, ranging from 2006 to 2010 to 2026 to 2030. It contains \$41 billion in federal, state, and local funding for road and transit projects for FYs 2005 to 2030, as well as policies and initiatives designed to guide the region forward.

SEMCOG acts as a gatekeeper and sets the requirements to be considered for funding as well as initially reviewing and ranking the projects before requests are submitted to the Federal Aid Taskforce. The Federal Aid Taskforce determines whether a project is funded; the projects are administered through MDOT. This provides the greatest benefit to the region as a whole, with SEMCOG helping to allocate the limited funding among the member counties while allowing communities to set realistic time frames and determine local match requirements.

Appendix 5 contains an excerpt from the 2030 RTP, as well as copies of web pages listing three specific projects for Beck Road in Northville Township and the City of Wixom. For example, from page 39 of the RTP, the project with ID No. 1167 is Beck Road from I-96 to Pontiac Trail in the City of Wixom. It shows a Time Code of 4, which is defined as occurring in the FY range of 2016 to 2020. The web page lists details of the project; it is indicated to have an estimated total cost of \$13.3 million, with 80% federal funding requested, and 20% non-federal (a blend of state and local funds).

Beck Road in the City of Novi is not listed in the 2030 RTP or current TIP. Determining what improvements may be needed and being placed on the RTP, even if the projects never actually occur, is an important step in ensuring that the City gets a fair shot at available funding should Beck Road need to be widened in the future.

### 3.0 RESIDENT INPUT AND FEEDBACK

There were two public informational sessions held during the preparation of this report. An open-house style meeting was held on October 3, 2006, at the Police Training Center; a more formal presentation was given on November 2, 2006, in the Council Chambers. During the first meeting, a slideshow was presented detailing the current and predicted traffic counts, as well as potential short- and long-term geometric configurations being considered for Beck Road.

At the October 3, 2006 meeting, feedback was solicited regarding which long-term cross sections were most appealing to the residents. FTC&H and the City received feedback, input, insightful comments, and recommendations from residents. In general, it was felt that pavement condition and intersection improvement should be carried out over the next several years, with any major widening of Beck Road to be evaluated in the future, after the effect of intersection improvements and actual growth were better known.

Figures 5, 6, and 7, as well as Appendix 9 include information from the October 3, 2006, public meeting.

The November 2, 2006, meeting presented more detailed short- and long-term options, with paving and intersection upgrades emphasized as the preferred short-term recommendation, while the long-term capacity improvements (adding lanes between intersections) were presented as potential options to be reexamined in the future, after the short-term improvement impacts are gauged and actual area growth known. The time frame for the short-term improvements was given as 1 to 6 years, and the long-term options as 15 to 25 years. Several concerns were raised regarding impact the long-term improvements would or might have on the residents in the area; these concerns are summarized in Figure 8. Overall, residents are in favor of short-term condition and capacity improvements as presented.

Sections 5 through 7 of this report detail the short-term condition recommendations, short-term capacity recommendations, and long-term capacity options.

## 4.0 ENGINEERING EVALUATION

The long-term roadway cross sections listed in Table 3 are referred to as options, as they are some of several possibilities proposed to improve capacity. They are listed as the preferred options because, within the framework of this study, they make the most sense from an engineering and planning perspective: a section with two through lanes in each direction offers greater capacity per dollar spent than other options reviewed.

The short term condition and capacity options presented are known as “3R” work by MDOT and SEMCOG, which stands for resurfacing, restoration, and rehabilitation. Full reconstruction that modifies the cross section of the roadway, such as adding lanes, is known as “4R” work; 4R is not an acronym; rather it stands for the “4<sup>th</sup> R”, reconstruction. All short- and long-term improvements listed are eligible for funding; a funding application must be submitted, and it can take time to receive the funds.

During the preliminary stages of the study, the scoping committee met and various potential options for the future of Beck Road were discussed and evaluated. Major options reviewed were also presented at the October 3, 2006, public information meeting. The residents in attendance reported that while congestion was bad at times, they desired that options other than expansion be explored as well. Options such as: finding ways to reduce traffic, reducing the speed limit, eliminating trucks, noise reduction, and other quality of life items were posed at the meeting. These are goals that can be explored, although the purpose of this study is long-range planning and assumes that current trends and traffic needs on Beck Road will continue. A reduction of vehicles would be dependant on shifting traffic to other roadways, which would require a separate study and evaluation of the residents along that corridor.

### 4.1 SHORT-TERM CAPACITY EVALUATION

In the earliest discussions, intersection improvements were part of the long-term capacity options. The scoping committee determined that the short- and long-term options be considered separately, which would allow for a staged implementation of the improvements. This would spread the costs over several years, and allow for improvements to be made in the interim without waiting until the full sections were needed in 15 to 25 years.

The primary benefit of intersection improvements is an increase in overall capacity through the intersection; turning movements as well as through vehicles clear the intersection faster. The improvements considered the intersection as a whole; not just Beck Road. By providing a right-turn lane on the intersecting street (e.g., Eleven Mile), traffic from the side road clears the intersection faster, allowing for increased green traffic signal time on Beck Road, which in turn further increases the capacity of the Beck legs of the intersection.

## 4.2 LONG-TERM CAPACITY EVALUATION

To narrow the range of options and possible iterations of this study for the long-range options, the intent was clarified: “plan for providing the needed capacity on Beck Road before congestion becomes so great the community is forced to make unplanned changes.” This does not mean that other options should not be explored, however, those investigations are beyond the limits of this study. The desired end result of this study is to present possible long-term capacity options, plan for potential funding, and be prepared for future changes. Whether or not the long-term options presented herein are implemented, the information presented can be used in future decision-making discussions.

The congestion on Beck Road during peak periods is becoming excessive; trends indicate the congestion will continue to worsen. If forecasted trends transpire, Beck Road will have an ADT at the current levels of Grand River Avenue, Novi Road, and Haggerty Road; delays due to congestion will become excessive. South and north of the City, the roadway will be widened to five lanes in approximately 15 to 25 years.

There are sections of Beck Road for which a 3- or 4-lane segment would be viable; ultimately, however, these segments would be restrictive if adjoining sections of Beck Road were improved to 5 lanes or a 4-lane boulevard. As this study is envisioning the eventual widening of the corridor, sections with two through lanes and either a center turn lane or median were developed schematically and estimates prepared. The schematic drawings were developed depicting 12-foot-wide lanes, which is desired but not required under current guidelines; 11-foot lanes are acceptable and, while not a major reduction in cross section impact or expense, could be considered as they maintain the same capacity while generally at a lower speed. Table 5 summarizes the process used in evaluating the various long-term cross sections.

**Table 5 – Comparative Analysis of Long-Term Capacity Sections**

Cross Section	Capacity	Implementation	Cost (\$)
No Change	No improvement	None	Maintain existing
3 lanes (center turn)	No gain in through capacity; reduce left-turn passing flares.	Can likely construct road within existing ROW, pathways will require additional ROW.	Moderate
4 lanes	Improvement in through capacity, but left-turning vehicles present a hazard.	Requires additional ROW to accommodate road and pathways, public support is moderate.	Moderate-High
5 lanes	Greatest increase in through capacity, clears left-turning vehicles.	Requires most additional ROW, lowest public support.	High
4-lane boulevard	Same through capacity as 5 lanes, limited application; median requires turn islands.	Requires most additional ROW, slightly better public support.	Highest

### 4.3 ROW IMPACTS

It is understood that the City's long-range plan is to have pathways on both sides of Beck Road. If any widening of the roadway occurs, additional ROW will be needed across several parcels. In reviewing the potential ROW impacts, the final desired ROW width was assumed to be 120 feet total. For most parcels impacted, this would affect a relatively small portion of the front yard, although for other parcels the take is a relatively large percentage of the total property. The relative impacts were not evaluated as part of this study, however, the impact on the use or overall value of a property would be required in performing a property assessment.

The necessary steps in obtaining ROW can be summarized as follows:

1. Determine the ROW requirements.
2. Survey the area, if necessary.
3. Prepare the easement/ROW descriptions and exhibits.
4. Draft the legal documents (attorney input required).
5. Negotiate with the property owners.
6. Convey/purchase the property.
7. File the recorded documents.

This can be a very long process as owner support or resistance can determine whether a project proceeds. Once it has been determined that ROW will be needed, the process should be initiated as quickly as possible.

### 4.4 UTILITY INFORMATION

Utility information was requested and received from known aboveground and underground utility companies with facilities in the area. There are electric, cable television, and telephone utilities with facilities mounted on poles, and natural gas and telephone utilities underground within or adjacent to the Beck Road ROW. Refer to Appendix 10 for a listing of known utility companies, sample information request correspondence, and information received from each company.

Based on the information received, it appears that a majority of the utilities that would be impacted by proposed work are within the existing ROW. This is important to consider because if a company is required (or wishes) to relocate their utility due to roadway construction or expansion, and the utility is located within the public ROW, the relocation is generally at the utility's expense. If the utility is located outside of the existing ROW in an easement, and is required to be relocated, the expense would be the responsibility of the City.

Any utility relocation requires extensive planning on the part of the City and the utility involved. Involving the utility companies as early as possible in the design phase of any project helps to establish a timeline for relocation and ensure the project can proceed without delays.

#### **4.5 GEOTECHNICAL INFORMATION**

As part of this scoping study, pavement corings and soil borings were obtained by SOMAT Engineering, Inc., and a geotechnical report was prepared. The report was referenced in preparing the cost estimates in this study, and will be utilized for future design and estimating purposes.

In general, the existing aggregate base, subbase, and subgrade do not meet guidelines for new construction, but should be adequate for reconstruction provided areas of poor soils are replaced as they are encountered during construction, and underdrains are added to any widened areas. This area is characterized by silty and clayey soils, which perform poorly when not drained. Specific comments are provided in the long-term capacity improvement section of this report, as well as in the geotechnical report in Appendix 11.

The following sections present a discussion of the preferred short- and long-term condition and capacity options for Beck Road from Eight Mile Road to south of Grand River Avenue. Cost estimates can be found in Appendix 6; Figures 9 through 16A present schematic drawings of the potential capacity improvements.

## 5.0 SHORT-TERM CAPACITY IMPROVEMENTS

The recommended intersection improvements will help alleviate the backups currently experienced during morning and evening peaks. This will result in less delay, reduced driver frustration, and fewer accidents by separating turning vehicles from the through lanes.

For each intersection, the existing lane configuration is different – some have a combined through and right-turn lane, and others have separate right-turn lanes. All intersections currently have a left-turn lane. The recommended improvements presented in Table 2 are repeated in Table 6 below.

The figures for each intersection depict the approximate lane configurations and ROW impacts, and the estimates list the anticipated work items and current year costs.

**Table 6 - Short-Term Intersection Capacity Improvements**

Intersection	Time frame (years)	Improvements	Estimate (2006 dollars)	Notes
10 Mile	1-4	Add dedicated right-turn lanes to NB, SB, and EB legs; extend WB right-turn and EB left-turn lanes.	\$405,600	ROW impacts in all four quadrants.
9 Mile	2-5	Extend existing dedicated NB right-turn lane.	\$36,000	ROW impact on two parcels.
11 Mile	5-10	Add dedicated right-turn lanes to EB and WB legs.	\$238,000	ROW impact in SW quadrant.
8 Mile	5-15	Add dedicated right-turn lane to SB leg.	\$216,000	To coordinate with section south of 8 Mile.

For future-year inflation factor estimates refer to Appendix 7.  
Estimate includes approximate cost of ROW acquisition.

### 5.1 EIGHT MILE ROAD INTERSECTION

The west half of the north leg of the Eight Mile Road intersection is within the City; the eastern half within the City of Northville, and the leg south of Eight Mile Road within Northville Township. The City of Northville has previously been receptive to participating in improvements to the portion of Beck Road that lies within their jurisdiction; however, the level of participation will need to be confirmed in the future once a project scope has been approved.

Beck Road south of Eight Mile Road is under the control of the Wayne County DPS. In the SEMCOG 2030 RTP, Beck Road south of Eight Mile Road is indicated to become five lanes. This was discussed with Mr. Ken Kucel of the Wayne County DPS and the proposed plan was confirmed. The timeline of this expansion is unknown, other than to be more than 10 years in the future. There are significant ROW



needs and some challenging terrain that will have to be addressed before the roadway is designed and issued for construction.

Eight Mile Road itself is under the control of the RCOC; any improvements to this road will be completed under their authority. The upgrades within the City should be discussed and coordinated with the RCOC and the City of Northville. As this is a shared jurisdiction, the costs for upgrades can be shared as well.

The proposed improvements to the north leg of the intersection include adding a SB right-turn lane, and increasing the radius of the NE quadrant. Traffic counts obtained for this intersection did not include turning movements; however, based on observations, SB backups at Eight Mile Road are primarily due to through vehicles, not turning movements.

Refer to Figure 9 for a schematic of the proposed intersection improvements and traffic movements.

## **5.2 NINE MILE ROAD INTERSECTION**

NB and SB Beck Road at Nine Mile Road already have dedicated right-turn lanes. The EB and WB legs are three lanes without dedicated right-turn lanes.

Based on traffic counts and observation, Beck Road flows fairly well through Nine Mile Road; however, the NB right-turn lane is very short, causing some delay, and should be extended. Based on MDOT Geometric Guidelines, the turn lane should be 250 feet with a 130-foot taper.

Based on observation, vehicles on the EB and WB legs of Nine Mile Road primarily turn north or south. The addition of a dedicated right-turn lane does not appear warranted.

Refer to Figure 10 for a schematic of the proposed intersection improvements and traffic movements.

## **5.3 TEN MILE ROAD INTERSECTION**

The Ten Mile Road and Beck Road intersection has high volume for both north-south and east-west traffic. Only the WB leg has a dedicated right-turn lane and backups occur during peak as well as non-peak periods, primarily on the north and south legs of the intersection.

The three legs that do not have right-turn lanes (NB, SB, and EB) should have full-length turn lanes and tapers added. The existing right-turn lane on the WB leg has a short taper due to a commercial drive just east of the intersection. This turn lane should be extended through the commercial drive entrance to allow for greater storage.

The signal at the intersection will need to be relocated due to the widening of three quadrants and should be replaced with a controller and heads providing exclusive left- and right-turning signals. Improvements at this location would achieve a significant reduction in delay through the intersection, however, the increase in flow may require signal modifications at adjacent intersections to accommodate larger groups of vehicles at a time.

Refer to Figure 11 for a schematic of the proposed intersection improvements and traffic movements.

#### **5.4 ELEVEN MILE ROAD INTERSECTION**

On average, the EB and WB movements through the Beck Road at Eleven Mile Road intersection are not as heavy as at Ten Mile Road. The morning and evening peak periods, however, are significant, particularly in the WB direction, through traffic and right-turning vehicles queue for several minutes.

The NB and SB legs have existing right-turn lanes, but the EB and WB legs do not. Dedicated right-turn lanes should be added to the EB and WB lanes to alleviate congestion and reduce wait times.

Refer to Figure 12 for a schematic of the proposed intersection improvements and traffic movements.

## 6.0 SHORT-TERM CONDITION IMPROVEMENTS

Based on the likelihood that any expansion of Beck Road inside or outside the City will not occur for 10 to 15 years, the existing road surface must be repaired and maintained. The work necessary for each section will need to be evaluated at the time the work is proposed to occur. The work type and estimates presented in Table 2 (on page 4 of this report) are sorted based upon current pavement condition and expected work.

Beck Road from Eight to Nine Mile Road has a PASER rating of 2 (poor) and has relatively thin (3- to 4-inch) pavement in poor condition with poor underlying base material. The northern half of this section received a thin overlay in 2005, which improved the appearance and reduced noise levels, but a useful life of only 5 years is expected. Beck Road from Ten Mile to Eleven Mile Road has a similar pavement section and has a PASER rating of 2-3 for the southern 0.75 mile, and a rating of 7 for the northern portion, which was paved within the last 5 years. Surface repairs and a full depth overlay should be performed for these sections of Beck Road, resulting in a 15 to 20 year lifespan, provided regular maintenance is performed.

The remaining sections, Nine to Ten Mile Road, and Eleven to Grand River Avenue are generally in better condition, have been recently improved, and/or have thicker (4- to 6-inch) pavement sections. These sections can be milled and overlaid with good results expected to last 15-20 years.

## 7.0 LONG-TERM CAPACITY IMPROVEMENTS

Within the City, continual development and growth has lead to the point where the City is approaching “build-out”, where much less growth is possible due to most of the available land having been developed for commercial or residential uses. At build-out, increased traffic on Beck Road would not be due to changes within the City, but rather growth occurring in other communities and a result of commuter and pass-through traffic. If Beck Road is widened to five lanes in communities north and south of the City to meet the demand, it can be assumed that demands within the City will also increase, regardless of development within Novi.

For the purposes of this study, it was assumed that, at some point, it will be desired for the capacity of Beck Road to be increased, and various options were reviewed. Other options, such as reducing capacity or improving other corridors could also be evaluated, but are beyond the focus of this study. For planning purposes, sections that provided two through lanes in each direction were developed with schematic plans and estimates prepared. This information can be used to establish Beck Road with the City on the SEMCOG 2030 RTP.

Table 3 from the Executive Summary is repeated below as Table 7 and summarizes the recommended option for each segment.

**Table 7 - Long-Term Capacity Improvements**

Segment	Section	Estimate (2006 dollars)	Parcels affected (ROW needs)	Notes
8 to 9 Mile	5 lanes	\$3,215,000	28	The eastern half of the southern half mile is in the City of Northville
9 to 10 Mile	5 lanes at the mile roads, a 4-lane boulevard for the middle 3,200 feet	\$3,153,500	18	
10 to 11 Mile	5 lanes at the mile roads, a 4-lane boulevard for the middle 3,500 feet	\$3,418,000	6	
11 Mile to Grand River	5 lanes	\$1,826,000	13	

For future-year inflation factor estimates refer to Appendix 7. Estimates include the approximate cost of ROW acquisitions.

The following sections present a discussion of each portion of Beck Road from Eight Mile Road to south of Grand River Avenue. Cost estimates can be found in Appendix 6 and Figures 13A through 16 present schematic drawings of the preferred long-range options.

## **7.1 EIGHT MILE ROAD TO NINE MILE ROAD**

This portion of Beck Road is characterized by flat to gently rolling terrain; it is generally open with few trees adjacent to the roadway. The eastern portion of the southern half mile is within the City of Northville; approximately 25% of the estimated cost may be shared with Northville depending on the work proposed and agreements between the cities. The pavement in the southern portion is very poor with a 2004 PASER rating of 3. The northern half mile received a thin overlay by the Novi DPW in the fall of 2005. The overlay is performing well and the roadway appears to be stable despite the poor base material encountered in the geotechnical review.

### **7.1.1 ROADWAY SECTION**

There are several (approximately 20) private drives and 2 subdivision entrances along Beck Road. The number and spacing of drives would make for a choppy boulevard section; therefore, a continuous 5-lane section is recommended.

### **7.1.2 ENVIRONMENTAL CONCERNS**

There were three areas identified as wetlands within the project limits. It appears that at least two areas could be affected by roadway reconstruction, all three could be affected if pathway construction is considered. Refer to the schematic drawings for locations and Appendix 8 for descriptions of the wetland areas.

### **7.1.3 GEOTECHNICAL INFORMATION**

The soil borings for this portion of Beck Road generally show 3 to 4 inches of HMA over compacted base material. The base material is not a typical road base material (crushed stone, sand, and small amounts of silt), rather, it is native or imported material with concentrations of silt, clay, and organic material (topsoil or peat) considered too high for road base material. This material holds excessive moisture; several borings indicate moisture content (percentage of total weight) in the vicinity of 20%, more than double what is considered the high end of acceptable.

There are also some areas with organic material at the bottom of the boring which is likely to have originated from native material left in place. In general, it is recommended that the existing base material be removed and replaced with 8-inches of MDOT 22A (or similar), and the subgrade removed and replaced with embankment, and with 18-inches of subbase in areas where organic materials are present or water content is very high. Refer to the full geotechnical report in Appendix 11.

Near Nine Mile Road, there is a wetland area on the west side that will be of concern during design and construction. Full-depth subgrade undercut (4 to 5 feet in depth) and backfill should be assumed for this area.

#### **7.1.4 ROW IMPACTS**

Approximately 28 parcels will be impacted. The ROW adjacent to unplatted areas is generally 33 feet from the section line (66 feet total); the ROW adjacent to platted areas is 60 foot (120 feet total). To obtain the desired 120-foot-total-width for all areas, a 27-foot-wide strip would need to be acquired from most affected parcels. Approximate areas of affected parcels are shown on the schematic drawings, and an analysis of the existing ROW can be found in Appendix 12.

#### **7.1.5 PATHWAYS**

On the west side of the roadway, the 8-foot-wide pathway would be built primarily in acquired ROW. There are several areas of landscaping and wooded areas which may require some alignment shifts. It is assumed that the 5-foot pathway will not be constructed on the Northville portion of Beck Road. There is existing pathway along the southern half of the remaining 0.5 mile; the remainder would be constructed in acquired ROW.

#### **7.1.6 DESIGN AND CONSTRUCTION CONCERNS**

There is a series of three cross culverts just south of Stratford Lane, which is just north of the halfway point between Eight Mile Road and Nine Mile Road. The culverts appear to be 2-foot by 3-foot corrugated metal; however, they were buried in such a manner that positive measurement was impossible. These culverts will need to be replaced; based on their proximity to wetland areas, an MDEQ wetlands permit may be required. It appears these are equalization culverts and not flowing at most times, so a hydraulic study may not be required.

Because the existing section is two lanes with a narrow shoulder, maintaining traffic while working will require a lane closures and potentially detours. Deep undercut areas will be safety concerns, and dust generated by vehicles may be a nuisance to adjacent homeowners. Noise and lack of access will be a concern to residents as well.

## **7.2 NINE MILE ROAD TO TEN MILE ROAD**

This portion of Beck Road is characterized by rolling terrain and varies from open with few trees adjacent to the roadway, to wooded areas close by. The pavement in the southern 0.75 mile is poor with a 2004 PASER rating of 3; most of the remainder is in good condition with a PASER of 7.

### **7.2.1 ROADWAY SECTION**

There are approximately eight private drives and seven subdivision entrances along Beck Road. The private drives are fairly close together in the center portion of this section and could be served by one or two crossovers, therefore, this section is considered a candidate for a narrow (20-foot) median boulevard section. The boulevard would begin north of the Beckenham Boulevard subdivision entrance and continue north to just south of Totenham Court. This allows for free access to the subdivisions served by those roads, and for the left-turn tapers and lanes at the mile roads.

### **7.2.2 ENVIRONMENTAL CONCERNS**

There were four areas identified as wetlands which may potentially be impacted within the project limits. It appears at least two of the areas could be affected by roadway reconstruction as well as pathway construction. Refer to the schematic drawings for locations and Appendix 8 for descriptions of the wetland areas.

### **7.2.3 GEOTECHNICAL INFORMATION**

The soil borings for this portion of Beck Road generally show 4 to 6 inches of HMA over compacted base material. It appears engineered fill was used as base material in most locations, but is typically placed directly over native dense clay base material. This section of the roadway is likely trapping water in some locations, although with adequate underdrain, the existing base material can perform well. It should be anticipated that the top 6 to 8 inches of base material will be removed and replaced with subbase undercuts in areas of organic concentration. Refer to the full geotechnical report in Appendix 11.

There are several wetland areas near or within the proposed ROW area. Full-depth subgrade undercut and swamp backfill should be assumed for the widening in these areas.

## **7.2.4 ROW IMPACTS**

Approximately 18 parcels will be impacted. The ROW adjacent to unplatted areas is generally 33 feet from the section line; the ROW adjacent to platted areas is 60 feet. To obtain the desired 60 feet for all areas, a 27-foot-wide strip would need to be acquired from most affected parcels. Approximate areas of affected parcels are detailed on the schematic drawings, and an analysis of the existing ROW can be found in Appendix 12.

## **7.2.5 PATHWAYS**

On the west side of Beck Road, the existing 8-foot-wide pathway ends approximately 0.25 mile north of Nine Mile Road. The remaining portion would be constructed across several acquired parcels and adjacent to or over two wetland areas (likely to be boardwalks). The 5-foot-pathway on the east side is almost complete for the entire mile, the only gap being the northernmost 250 feet. This portion would be constructed in acquired ROW.

## **7.2.6 DESIGN AND CONSTRUCTION CONCERNS**

Maintaining traffic will be a challenge and will require several stages to construct the widened areas of the roadway first, removing the existing roadway to form the median last. Areas of undercut, while not expected to be as extensive as those south of Nine Mile Road, will need to be brought back close to grade before traffic can operate without requiring concrete barrier. Noise and lack of access will be a concern to residents as well.

## **7.3 TEN MILE ROAD TO ELEVEN MILE ROAD**

This portion of Beck Road is characterized by gently rolling terrain and varies from open with few trees adjacent to the roadway, to wooded areas close by. The pavement in the southern 0.75 mile is poor, with a 2004 PASER rating of 3; most of the remainder is in good condition with a PASER of 7.

### **7.3.1 ROADWAY SECTION**

There are approximately 12 private drives, 5 subdivision entrances, and 2 commercial drives along Beck Road. The private drives are fairly close together in the northern portion of this section and could be served by one or two crossovers; therefore, this section is considered a candidate for a narrow (20-foot) median boulevard section. The boulevard would begin north of the Ashley Boulevard subdivision entrance and continue north to just south of Sierra Drive. This allows for free access to the subdivisions served by those roads and for the left-turn tapers and lanes at the mile roads.



### **7.3.2 ENVIRONMENTAL CONCERNS**

There were three individual areas identified as wetlands within the project limits. One connects to a larger wetland on the west side of Beck Road and the remaining two are part of wetland areas larger than five acres. It appears at least two areas could be affected by roadway reconstruction; all four could be affected if pathway construction is considered. Refer to the schematic drawings for locations and Appendix 8 for descriptions of the wetland areas.

### **7.3.3 GEOTECHNICAL INFORMATION**

The borings for this portion of Beck Road generally show 3.5 to 4 inches of HMA over compacted base material. It appears that engineered fill was used as base and subbase material in most locations. The existing aggregate base and subbase can mostly remain in place, with widening adjacent to the existing roadway section. It should be anticipated that there will be subbase undercuts in areas of organic concentration. Refer to the full geotechnical report in Appendix 11.

There are several wetland areas near or within the proposed ROW area. Full-depth subgrade undercut and swamp backfill should be assumed for the widening in these areas.

### **7.3.4 ROW IMPACTS**

Approximately 6 parcels will be impacted; most are large parcels and not individual houses. The ROW adjacent to unplatted areas is generally 33 feet from the section line; the ROW adjacent to platted areas is 60 feet. To obtain the desired 60 feet for all areas, a 27-foot-wide strip would need to be acquired from most affected parcels. Approximate areas of affected parcels are detailed on the schematic drawings, and an analysis of the existing ROW can be found in Appendix 12.

### **7.3.5 PATHWAYS**

The west side of Beck Road has a partially-constructed 8-foot-wide pathway. There is an 800-foot-gap at Ten Mile Road; a 400-foot break in the middle, due to wetland and ROW conflicts; and the northern 1,300 feet is incomplete due to a lack of ROW. The proposed path would be built in acquired ROW. It should be noted that a portion of an existing boardwalk would need to be removed and reconstructed to clear the proposed widening.

### **7.3.6 DESIGN AND CONSTRUCTION CONCERNS**

Maintaining traffic will be a challenge and will require several stages to construct the widened areas of the roadway first, removing the existing roadway to form the median last. A partial or complete detour will likely be required during undercut operations or construction adjacent to wetland areas. Noise and lack of access will be a concern to residents as well.

## **7.4 ELEVEN MILE ROAD TO SOUTH OF GRAND RIVER AVENUE**

This portion of Beck Road is flat and open adjacent to the roadway. From Eleven Mile Road to Grand River Avenue is approximately 3,500 feet; the northern 1,100 feet has been newly widened to five or more lanes due to construction at the Providence Hospital site and the construction of the interchange with I-96. The pavement in the southern 2,400 feet of Beck Road is fair to poor with a 2004 PASER rating of 4.

### **7.4.1 ROADWAY SECTION**

This portion of Beck Road is fairly short and, after allowing for turning movements at Eleven Mile Road and the influence of development at Providence Park, any boulevard section would be very short. A continuous 5-lane section is recommended.

### **7.4.2 ENVIRONMENTAL CONCERNS**

There were five wetland areas identified; it appears two wetland areas on the west side of Beck Road could be potentially impacted within the project limits. It appears both of the areas could be affected by roadway reconstruction as well as pathway construction. Refer to the schematic drawings for locations and Appendix 8 for descriptions of the wetland areas.

### **7.4.3 GEOTECHNICAL INFORMATION**

The soil borings for this portion of Beck Road generally show 4 to 7 inches of HMA over compacted base material. It appears engineered fill was used as base and subbase material in most locations. The existing aggregate base and subbase can mostly remain in place, with widening adjacent to the existing roadway section. Refer to the full geotechnical report in Appendix 11.

There are several wetland areas near or within the proposed ROW area. Full-depth subgrade undercut and swamp backfill should be assumed for the widening in these areas.

#### **7.4.4 ROW IMPACTS**

Approximately 13 parcels will be impacted. The ROW is generally 33 feet from the section line on both sides of the road, with the exception of several adjacent parcels near Eleven Mile Road. To obtain the desired 60 feet for all areas, a 27-foot-wide strip would need to be acquired from most affected parcels. Approximate areas of affected parcels are detailed on the schematic drawings, and an analysis of the existing ROW can be found in Appendix 12.

#### **7.4.5 PATHWAYS**

On the west side of Beck Road, the proposed 8-foot-pathway would be constructed across several acquired parcels and adjacent to or over two wetland areas (likely to be boardwalks). The 5-foot pathway on the east side is incomplete with the southern 1,300 feet not constructed. This portion would be constructed in acquired ROW.

#### **7.4.6 DESIGN AND CONSTRUCTION CONCERNS**

Maintaining traffic will not be as significant a concern as some of the other segments. The existing roadway base appears stable and should not require many undercuts or removals; additionally, there are not as many residents along this area. However, dust and delays will still be a concern and should be planned for during design.

## **8.0 IMPLEMENTATION PLAN**

### **8.1 SHORT-TERM ACTIVITIES**

The first step includes getting Beck Road on the RTP with the Oakland County Federal Aid Committee and SEMCOG to ensure the timing of upgrades are coordinated with surrounding areas. The short-term condition and capacity improvements should be explored immediately. Paving the existing roadway is a maintenance issue; in the interest of preserving the existing roadbed and in response to resident complaints should occur as soon as possible.

A safety upgrade that could be considered for most sections of Beck Road is to add a 3-foot-wide paved shoulder. In many locations the lane line is at the edge of the pavement. Adding a paved shoulder will contribute to the overall stability of the roadway, and enhance the safety for slightly errant vehicles.

The intersection improvements described can be funded 80/20 (80% grant, 20% local match) through the CMAQ. This funding is earmarked to reduce congestion, as well as the corresponding pollution and ozone impacts; however, the application must be made through SEMCOG. Another initial step is to respond to the RCOC 2010-11 Call for Projects, which will put Beck Road "in line" for 80/20 federal funding. These grants can be used for all aspects of the roadway improvements, including ROW acquisition.

This scoping report can be the background for initial funding requests, and may be expanded in the future. The proposed work in this study should be examined in the future, as standards may have changed; the estimates should also be reviewed based on construction material trends, real estate costs, and general inflation.

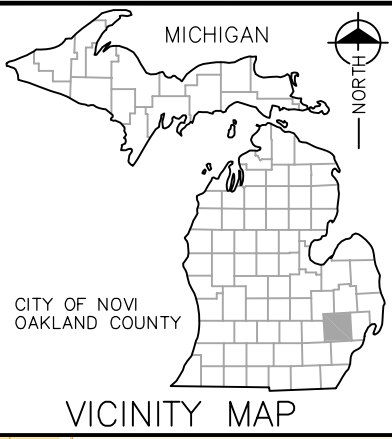
### **8.2 LONG-TERM**

Assuming that the short-term intersection improvements are implemented, congestion at intersections during peak periods will be reduced; however, the effect will diminish over time as more traffic uses Beck Road. When it is felt that the overall capacity of the Beck Road corridor may need to be increased, a full traffic impact study should be performed. This will evaluate Beck Road in relation to other surrounding roads, growth trends in and around the City, and potential improvements that could be performed elsewhere to alleviate some of the Beck Road congestion.

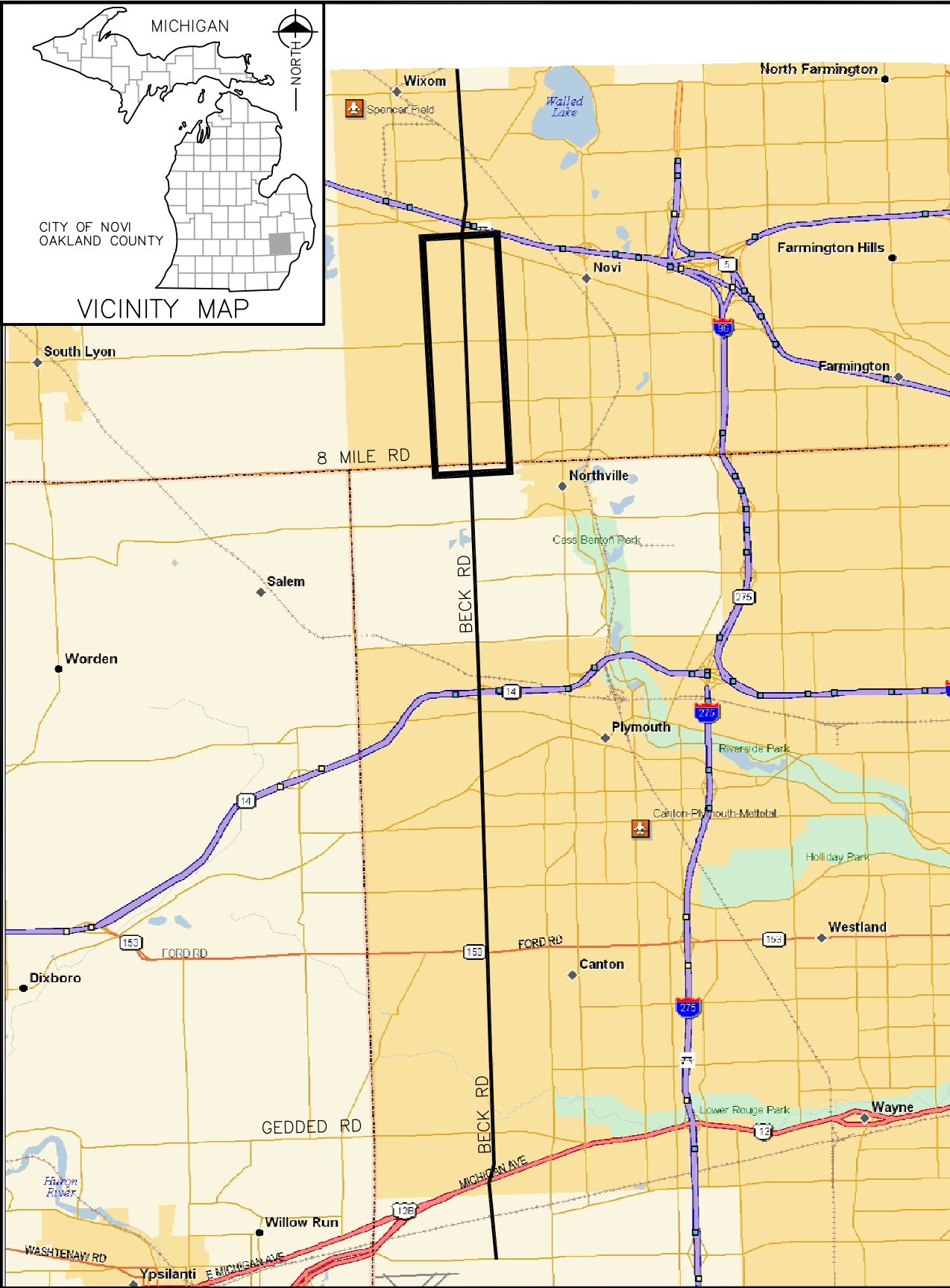
Keeping the corridor on the long-range RTP is critical. If the time frame for potential improvements changes, the roadway plan in the RTP should be updated every five years, or as directed by SEMCOG. At regular intervals, the performance of previous improvements should be monitored and reflected in the

SEMCOG RTP, as well as in City budgeting sessions. Keeping the road in the planning documents ensures that other communities are aware of what the City is considering and keeps the project(s) in line for available funding. This study should be referenced in the future, updated, and kept as current as possible to reflect the current position and opinion of the Engineering Department, City Council, and residents of Novi.

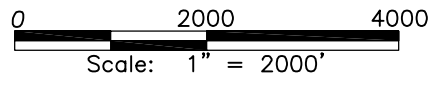
# Figures



engineers  
scientists  
architects  
constructors



**City of Novi**  
Novi, Michigan  
**Beck Road Scoping Project**



REFERENCE:  
DeLORME STREET ATLAS  
USA - 2006

**REGIONAL AND SITE LOCATION MAP**

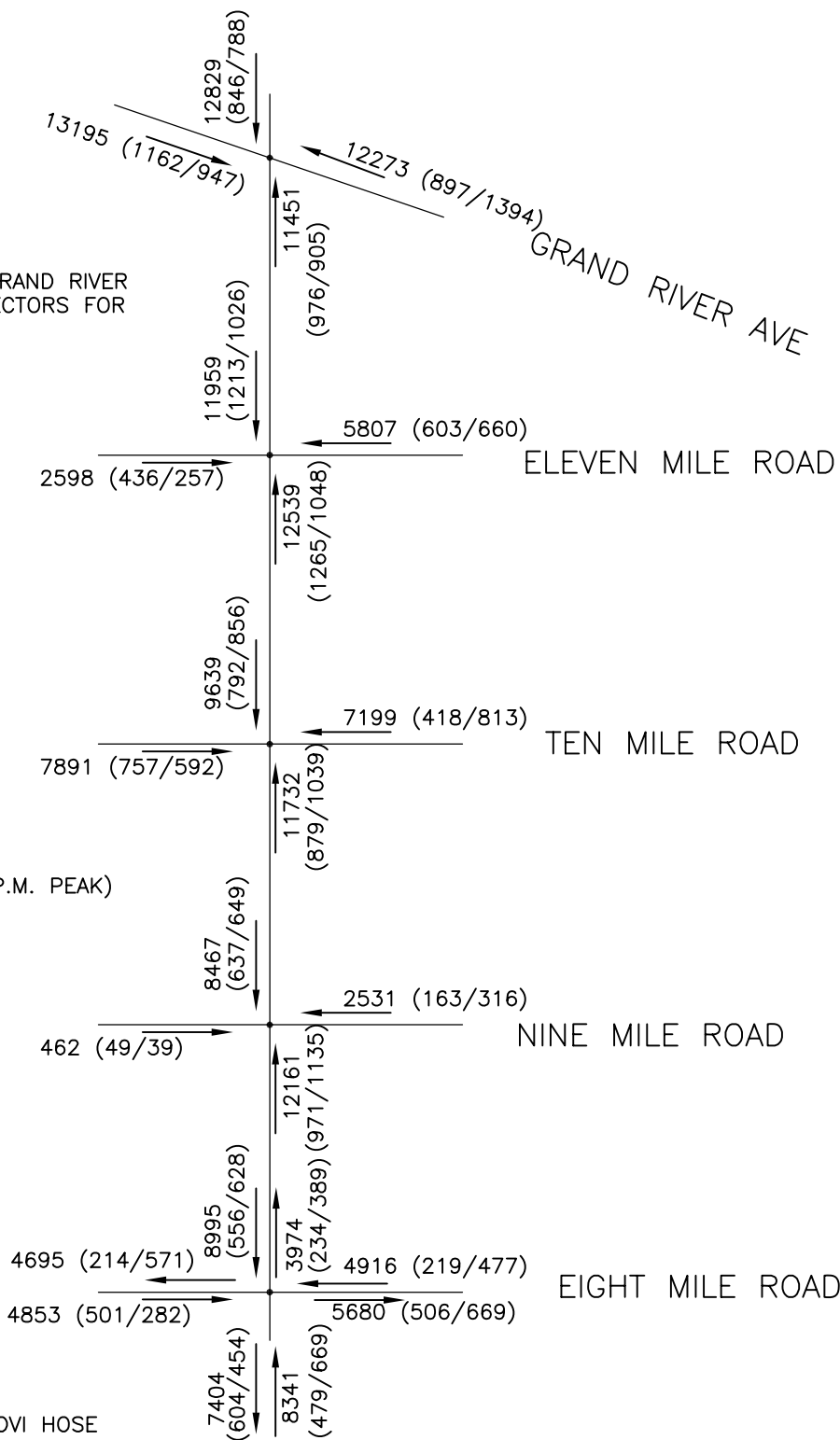
PROJECT NO.	G06496
FIGURE NO.	1

PLOT INFO: N:\06496\CD\FIG-1.DWG DATE: 10/26/2006 TIME: 9:27:56 AM USER: BDR



engineers  
scientists  
architects  
constructors

NINE MILE NORTH THRU GRAND RIVER  
COUNTS FROM OCRC DETECTORS FOR  
THURSDAY, MAY 18, 2006



KEY:  
24HR TOTAL (A.M. PEAK/P.M. PEAK)

EIGHT MILE AT BECK  
COUNTS FROM CITY OF NOVI HOSE  
DETECTORS FOR  
THURSDAY, AUGUST 24, 2006



# BECK ROAD TRAFFIC COUNT

NO SCALE

CITY OF NOVI  
BECK ROAD SCOPING  
EXISTING TRAFFIC DATA

PROJECT NO.

G06496

FIGURE NO.

2



FIGURE 3

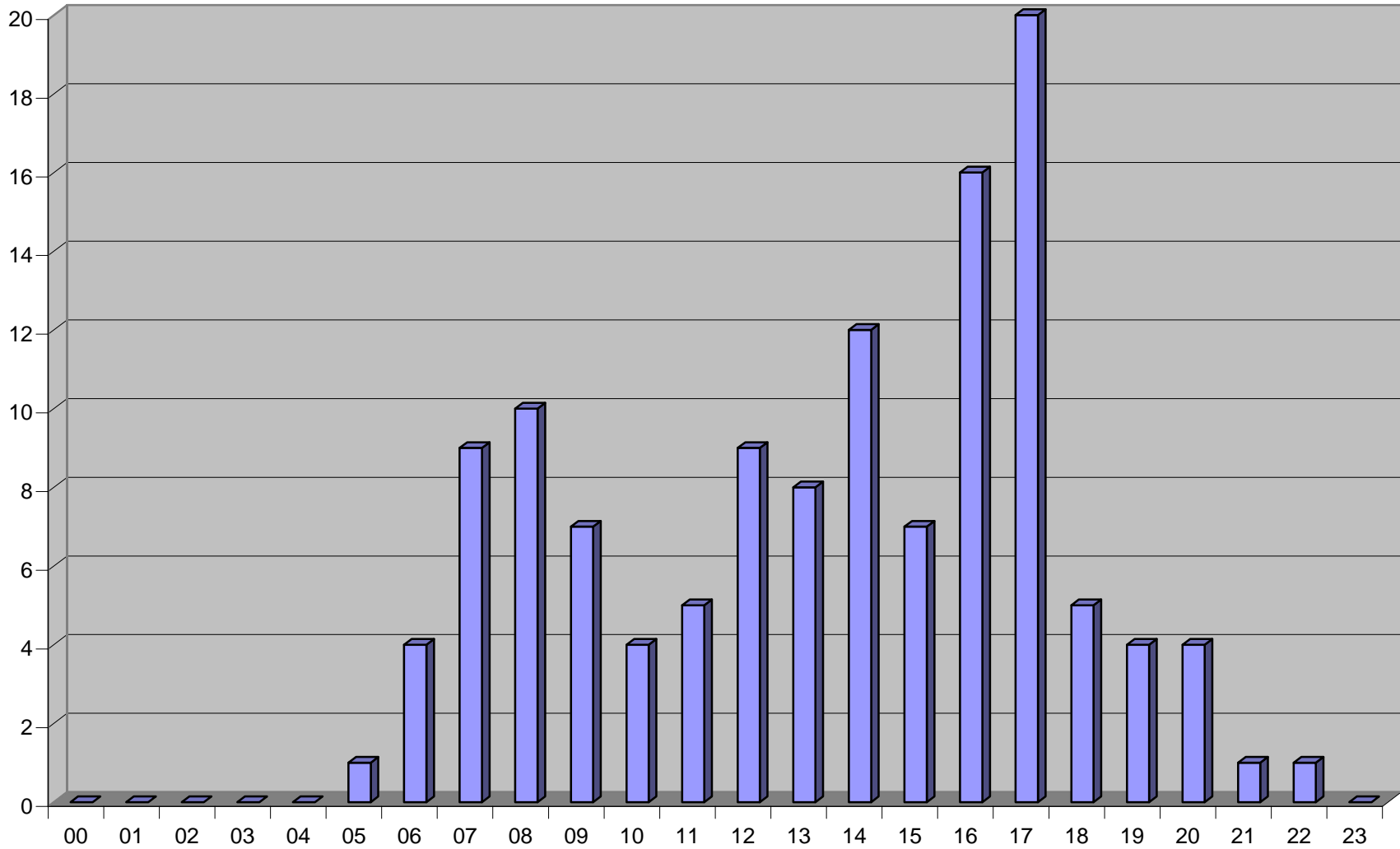


**BECK ROAD  
8 MILE - GRAND RIVER  
ACCIDENTS  
SPEEDING/COMMERCIAL VEHICLE CITATIONS  
August 1, 2005 - July 31, 2006**

	ACCIDENT	INJURY ACCIDENT	CAR/BIKE	CAR/DEER	HIT & RUN	TOTAL	SPEEDING CITATIONS	COMMERCIAL VEHICLE CITATIONS	TOTAL
8 MILE	7	2	0	0	0	9	67	19	86
STRATFORD	0	0	0	2	0	2	111	38	149
BELLAGIO	0	0	0	0	0	0	45	7	52
9 MILE	5	2	1	0	1	9	138	84	222
BECKENHAM	0	0	0	0	0	0	39	3	42
SUNNYBROOK	0	0	0	0	0	0	30	0	30
CHELTENHAM	0	0	0	0	0	0	47	15	62
WHITE PINES	1	0	0	0	0	1	63	40	103
EDINBOROUGH	0	0	0	0	0	0	26	4	30
IROQUOIS	0	0	0	0	0	0	1	0	1
TOTTENHAM	0	0	0	0	0	0	26	4	30
BAKER	1	0	0	0	0	1	9	10	19
10 MILE	26	6	0	1	2	35	171	46	217
ASHLEY	0	0	0	0	0	0	7	0	7
CIDER MILL	2	1	0	2	0	5	49	8	57
KIRKWAY	0	0	0	1	0	1	3	0	3
SANFORD	0	0	0	0	0	0	20	2	22
SIERRA	0	0	0	0	0	0	2	0	2
11 MILE	6	2	0	1	0	9	178	16	194
CENTRAL PARK	1	0	0	0	0	1	2	0	2
GRAND RIVER	43	10	0	0	1	54	76	14	90
<b>TOTAL</b>	<b>92</b>	<b>23</b>	<b>1</b>	<b>7</b>	<b>4</b>	<b>127</b>	<b>1,110</b>	<b>310</b>	<b>1,420</b>

FIGURE 4

BECK ROAD ACCIDENTS BY HOUR  
8 MILE - GRAND RIVER 8/1/05-7/31/06



12/1/2006

J:\06496\REPT\FINAL\FIG03-04\_Accidents.xls

**FIGURE 5****COMMENTS AND QUESTIONS OBSERVED  
DURING BECK ROAD PUBLIC INPUT SESSION  
October 3, 2006**

- Was there an analysis of traffic trending for the past five years?
- What was the impact of the M-14/Beck closure and the I-96 interchange opening?
- Is Beck Road a truck route? Why are there so many trucks?
- The issue of speed limits was identified and discussed several time, usually in favor of a lower speed limit.
- Who decides what the cross-section of Beck Road will be?
- There was a discussion of the past proposal to widen Ten Mile Road.
- Why does the data show a decrease in traffic on Ten Mile Road?
- A resident suggested additional traffic signals to decrease accidents.
- A concern was expressed about widening Beck Road in front of Pioneer Meadows because of the number of homes impacted on Beck.
- Why weren't citizens asked to be on the committee? How can they get on the committee?
- Reduce the speed limit to 30 mph on Beck Road.
- Impose weight and truck restrictions.
- The amount of noise from the road must be controlled.
- Wouldn't a three lane road add capacity by allowing turning movements?
- There will never be commercial at Ten Mile and Beck Road.
- What is the objective statement of this study?
- A resident stated that the residents on Beck Road do not want it widened but most others do.
- Why is Beck Road designated as a major road?

By: Brian Coburn 10/4/06

**SUMMARY OF PREFERRED OPTIONS**  
**Beck Road Public Input Session**  
**October 3, 2006**

<u>Response Selection</u>	<u>Number of Responses</u>
3 lanes (1 lane each direction with center turn lane)	4
5 lanes (2 lanes each direction with center turn lane)	5
4 lane narrow boulevard (2 lanes each direction with median)	4
Intersection upgrades (1 lane each direction with safety widening)	13
No improvement other than repaving existing road	1
Multiple responses*	14
No response	6
<b>TOTAL RESPONSES</b>	<b>47</b>

<u>*Of multiple responses, the following were chosen:</u>	<u>Number of Responses</u>
3 lanes (1 lane each direction with center turn lane)	9
5 lanes (2 lanes each direction with center turn lane)	2
4 lane narrow boulevard (2 lanes each direction with median)	4
Intersection upgrades (1 lane each direction with safety widening)	14
No improvement other than repaving existing road	7

<u>Response Selection</u>	<u>Total Responses including those with multiple selections</u>
3 lanes (1 lane each direction with center turn lane)	13
5 lanes (2 lanes each direction with center turn lane)	7
4 lane narrow boulevard (2 lanes each direction with median)	8
Intersection upgrades (1 lane each direction with safety widening)	27
No improvement other than repaving existing road	8

**FIGURE 7**



**SUMMARY OF COMMENTS  
CATEGORIZED BY RESPONSE**  
Public Information Meeting - October 3, 2006

Comments	Preferred Alternative						TOTAL
	Intersection Improvements	3-lane Section	5-lane Section	4-lane Boulevard	No Response	Multiple Responses	
Decrease truck traffic	3					6	9
Reduce noise/vibration	4				1	4	9
Improve safety/noise by lowering speed	4	1		1	1	1	8
Consider that Beck is residential/maintain character	3			1	1	2	7
Decrease traffic volume*	4				3		7
Need to improve capacity	2		3	2			7
Improve safety by adding turn lanes	2	1				3	6
Add citizens to the committee to study Beck Road	1			1	2	1	5
Use various cross sections	2			1		1	4
Decrease impact on homes that front on Beck	3						3
Don't add capacity		1				2	3
Look at alternate North-South routes (Napier)	3						3
Provide a map showing where the ROW is limited					3		3
Don't add non-motorized paths**						2	2
Premature to choose cross-section					2		2
Adding lanes will increase traffic***						1	1
Beck is a major thoroughfare	1						1
Concerned about property values				1			1
Don't design for 3 hours of volume (peak hours)		1					1
Don't listen to just a few, do what's right for City		1					1
Ease traffic flow without widening***	1						1
Find a way to manage peak periods***					1		1
No need for residents on committee, for City Council to decide						1	1
Pavement is in bad condition	1						1
Phase in with intermediate 3-lane section			1				1
Upgrade current road with curbs and drainage						1	1
Use asphalt, not concrete (noise)	1						1

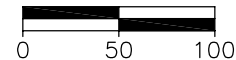
\* Only one suggestion provided--alter departure times to decrease traffic.  
 \*\* The purpose of this may be to reduce ROW needs based on the discussion.  
 \*\*\* Not included in decrease traffic comment

**FIGURE 8****COMMENTS AND QUESTIONS FROM  
BECK ROAD PUBLIC INPUT SESSION No. 2  
November 2, 2006**

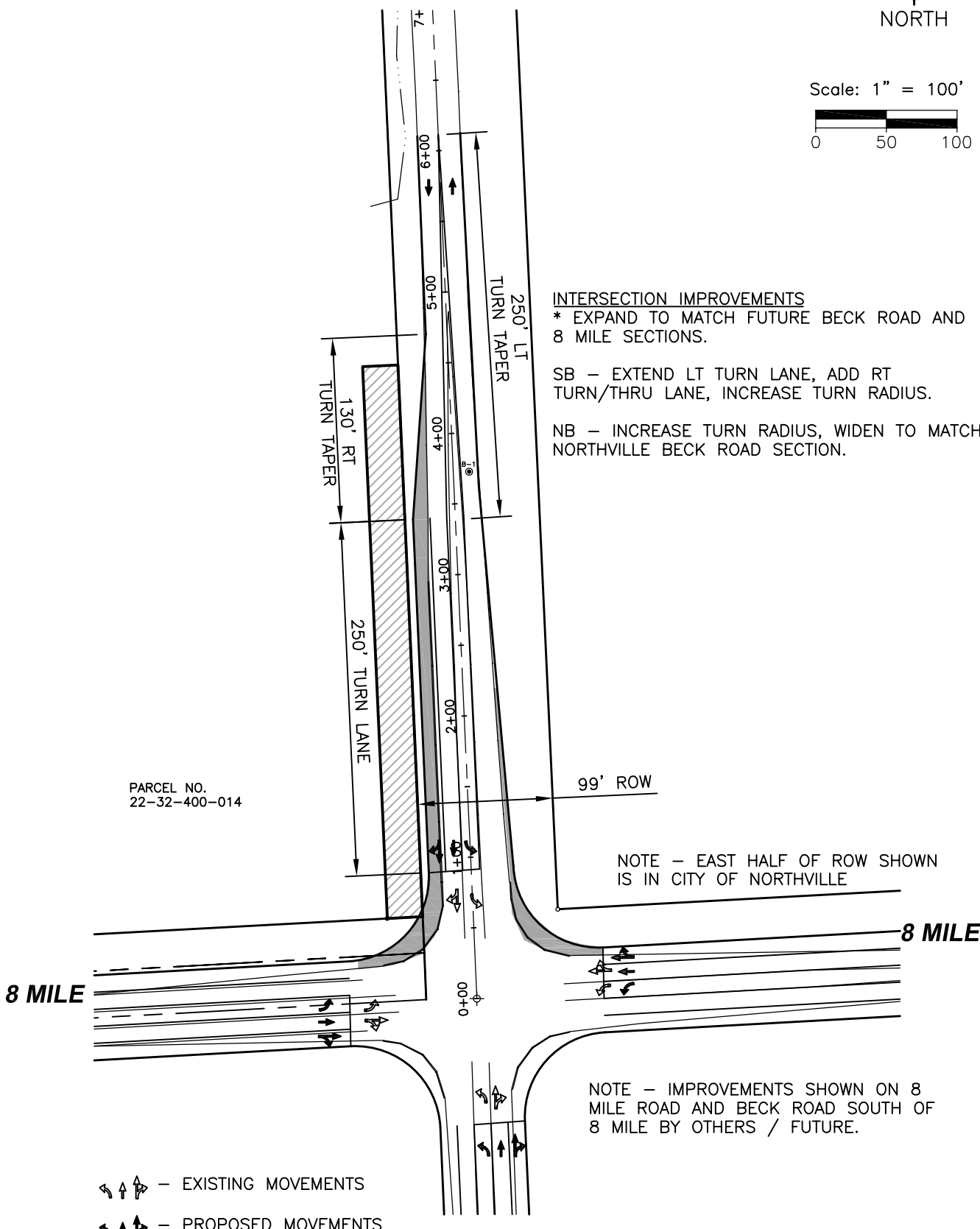
- Noise from trucks is a problem now, won't this get worse in the future?
- What can be done to limit trucks? Can the road be reclassified to restrict them?
- It is difficult to turn out of the Cider Mill intersection. What can be done to make this a safer intersection? Can a signal be added and/or speed be reduced on Beck Road?
- The traffic signal timing at the existing signals seems illogical at times.
- What will happen to trees along Beck Road? Can more be added to act as screening? If the road is widened, trees, berms, or walls should be added to act as a buffer.
- Can the short-term improvements happen more quickly than indicated? It seems they would have an immediate positive effect.
- What will happen to the yards of those houses fronting Beck Road if the long-term capacity improvements are made? IT appears there won't be much left of some.
- Can other roads, like Napier, be improved to get traffic away from Beck Road?
- Refuse trucks seem to be violating axle weight restrictions and cause a majority of the damage to residential streets. It would make sense to have a designated hauler instead of several competing trucks entering the subdivisions.
- Would any of the parcels be rezoned with these options?
- Safety is a concern now, how will this be improved with any of the options presented?
- The quality of life for the residents needs to be a top priority. The road should be redesignated at a natural beauty route, similar to Nine Mile or a portion of Halsted in Farmington Hills.
- Find ways to discourage traffic and reduce speed, not encourage both.



Scale: 1" = 100'



engineers  
scientists  
architects  
constructors



**INTERSECTION IMPROVEMENTS**

\* EXPAND TO MATCH FUTURE BECK ROAD AND 8 MILE SECTIONS.

SB - EXTEND LT TURN LANE, ADD RT TURN/THRU LANE, INCREASE TURN RADIUS.

NB - INCREASE TURN RADIUS, WIDEN TO MATCH NORTHVILLE BECK ROAD SECTION.

NOTE - EAST HALF OF ROW SHOWN IS IN CITY OF NORTHVILLE

NOTE - IMPROVEMENTS SHOWN ON 8 MILE ROAD AND BECK ROAD SOUTH OF 8 MILE BY OTHERS / FUTURE.

- EXISTING MOVEMENTS
- PROPOSED MOVEMENTS

**BECK ROAD AT 8 MILE INTERSECTION**

CITY OF NOVI  
BECK ROAD SCOPING STUDY  
INTERSECTION IMPROVEMENTS

PROJECT NO.

06496

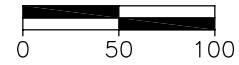
FIGURE NO.

9



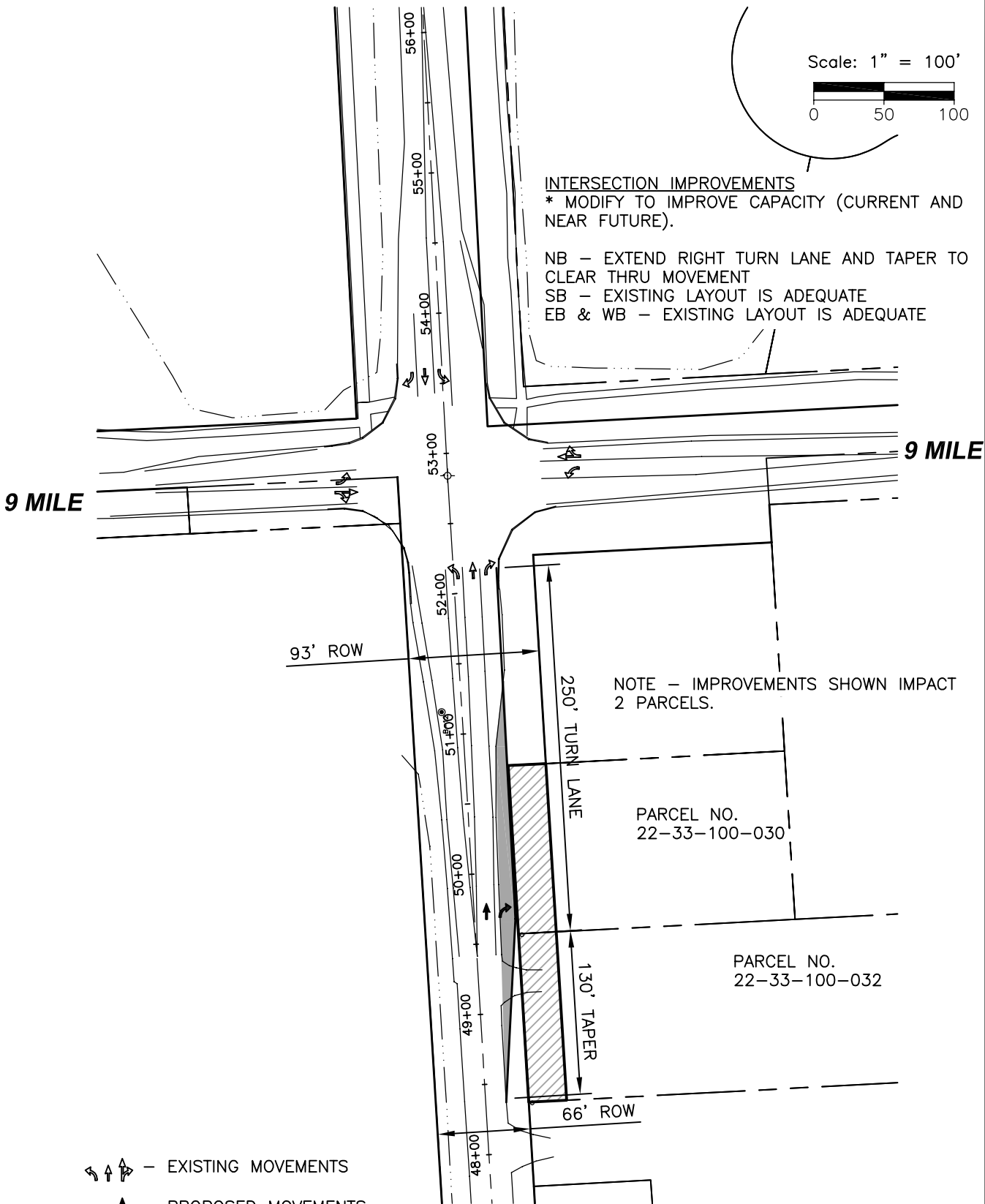
**engineers**  
**scientists**  
**architects**  
**constructors**

Scale: 1" = 100'



**INTERSECTION IMPROVEMENTS**  
 \* MODIFY TO IMPROVE CAPACITY (CURRENT AND NEAR FUTURE).

NB - EXTEND RIGHT TURN LANE AND TAPER TO CLEAR THRU MOVEMENT  
 SB - EXISTING LAYOUT IS ADEQUATE  
 EB & WB - EXISTING LAYOUT IS ADEQUATE



- EXISTING MOVEMENTS
- PROPOSED MOVEMENTS

## BECK ROAD AT 9 MILE INTERSECTION

**CITY OF NOVI**  
 BECK ROAD SCOPING STUDY  
 INTERSECTION IMPROVEMENTS

PROJECT NO.

06496

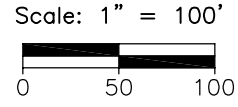
FIGURE NO.

10





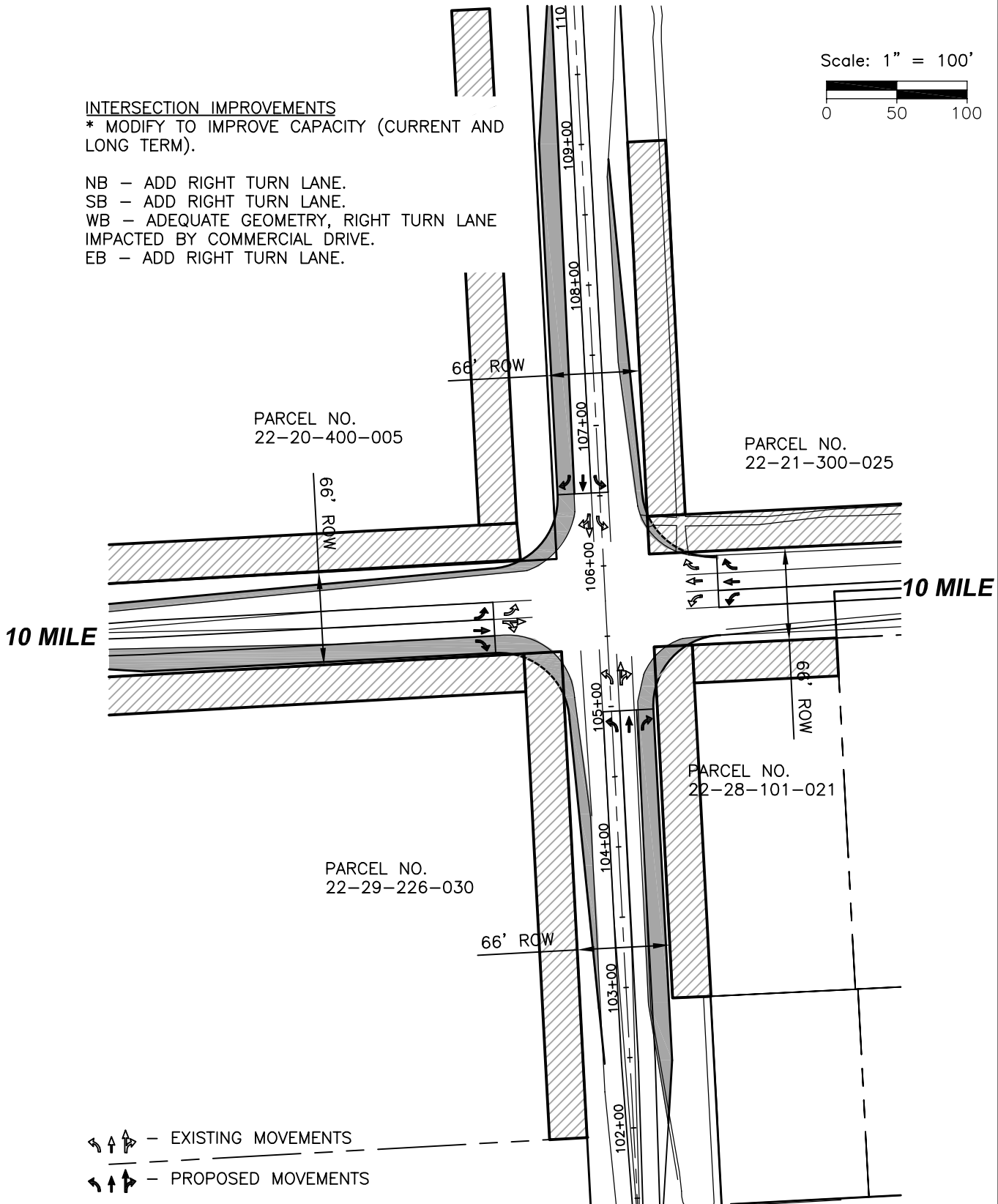
engineers  
scientists  
architects  
constructors



INTERSECTION IMPROVEMENTS

\* MODIFY TO IMPROVE CAPACITY (CURRENT AND LONG TERM).

- NB - ADD RIGHT TURN LANE.
- SB - ADD RIGHT TURN LANE.
- WB - ADEQUATE GEOMETRY, RIGHT TURN LANE IMPACTED BY COMMERCIAL DRIVE.
- EB - ADD RIGHT TURN LANE.



**CITY OF NOVI**  
BECK ROAD SCOPING STUDY  
INTERSECTION IMPROVEMENTS

PROJECT NO.  
06496

FIGURE NO.  
**11**

**BECK ROAD AT 10 MILE INTERSECTION**



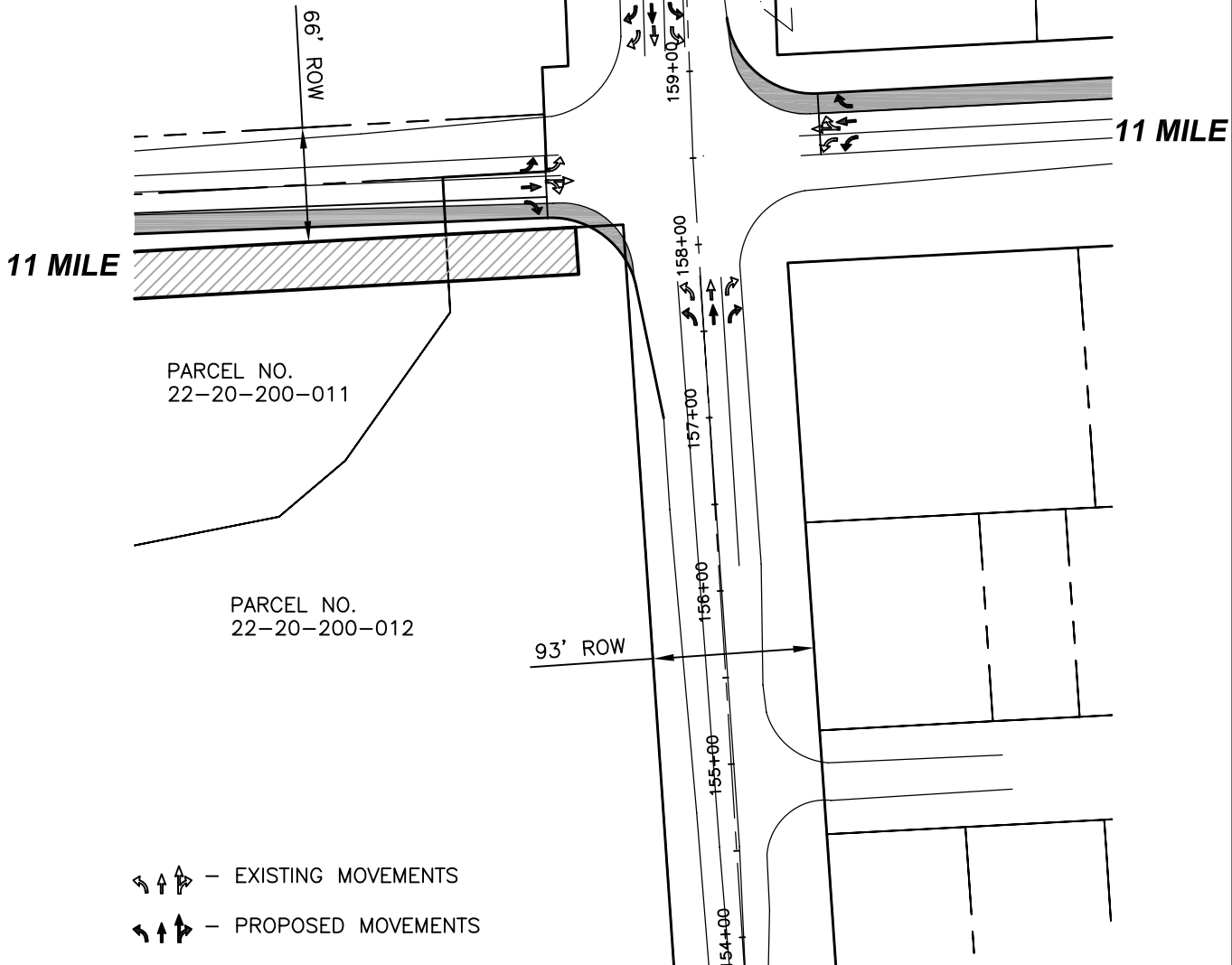
engineers  
scientists  
architects  
constructors

Scale: 1" = 100'  
0 50 100

**INTERSECTION IMPROVEMENTS**

\* MODIFY TO IMPROVE CAPACITY (CURRENT AND LONG TERM).

- NB - NO CHANGES.
- SB - NO CHANGES.
- WB - ADD RIGHT TURN LANE.
- EB - ADD RIGHT TURN LANE.



**CITY OF NOVI**  
BECK ROAD SCOPING STUDY  
INTERSECTION IMPROVEMENTS

**BECK ROAD AT 11 MILE INTERSECTION**

PROJECT NO.  
06496

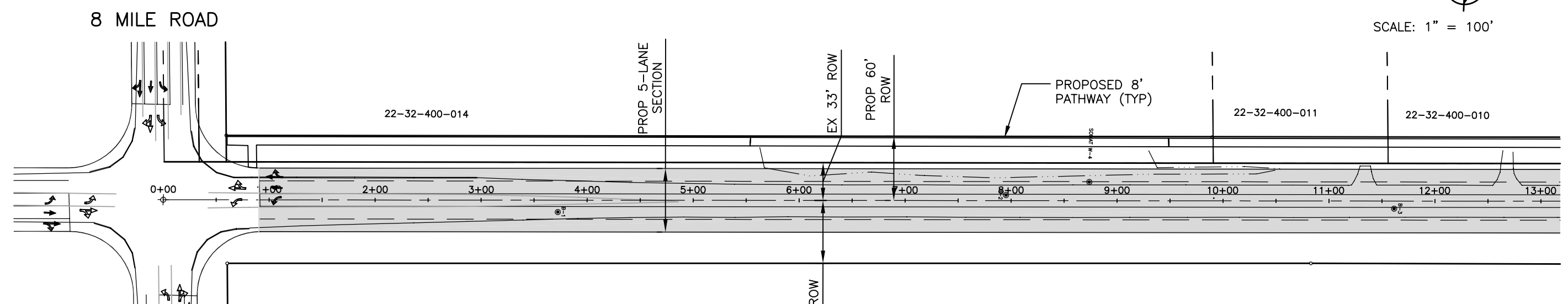
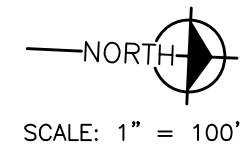
FIGURE NO.

**12**

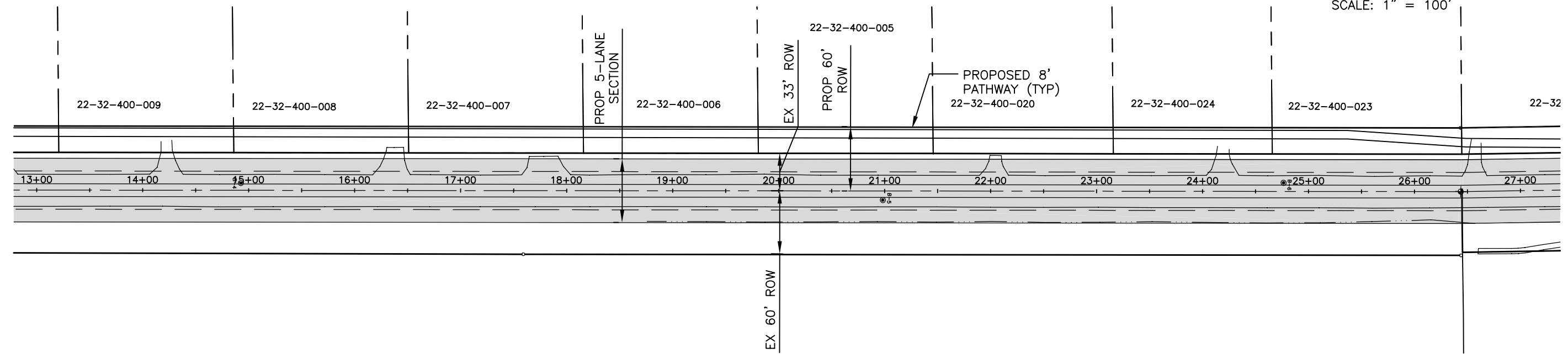
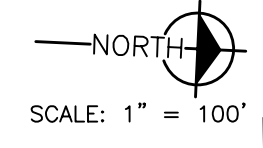


engineers  
scientists  
architects  
constructors

City of Novi  
Beck Road Scoping and Study  
Eight Mile to Grand River



ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-32-400-014	23274
22-32-400-011	4116
22-32-400-010	4113
22-32-400-009	4112
22-32-400-008	4109
22-32-400-007	4106
22-32-400-006	4104
22-32-400-005	4102
22-32-400-020	4223
22-32-400-024	3724
22-32-400-023	4440



- EXISTING MOVEMENTS  
 - PROPOSED MOVEMENTS

NOTE - DRAWINGS SHOW OVERALL SCHEMATIC DESIGN AND LAYOUT FOR PLANNING PURPOSES ONLY.

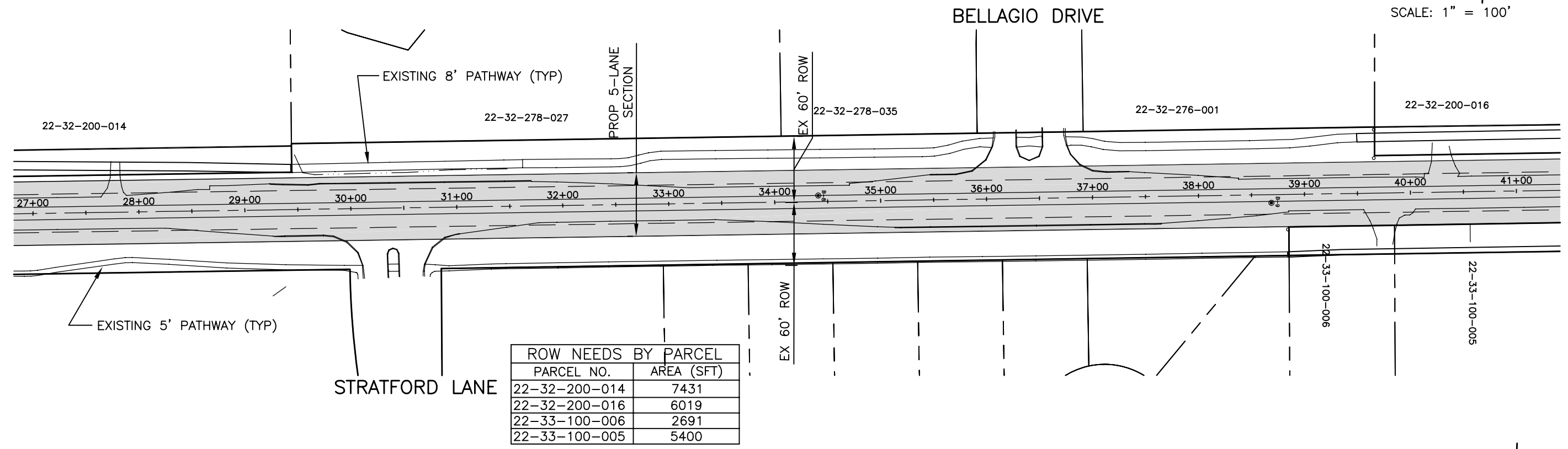
## BECK ROAD EIGHT MILE TO NINE MILE LONG TERM CAPACITY IMPROVEMENTS

PROJECT NO.  
G06496

FIGURE NO.

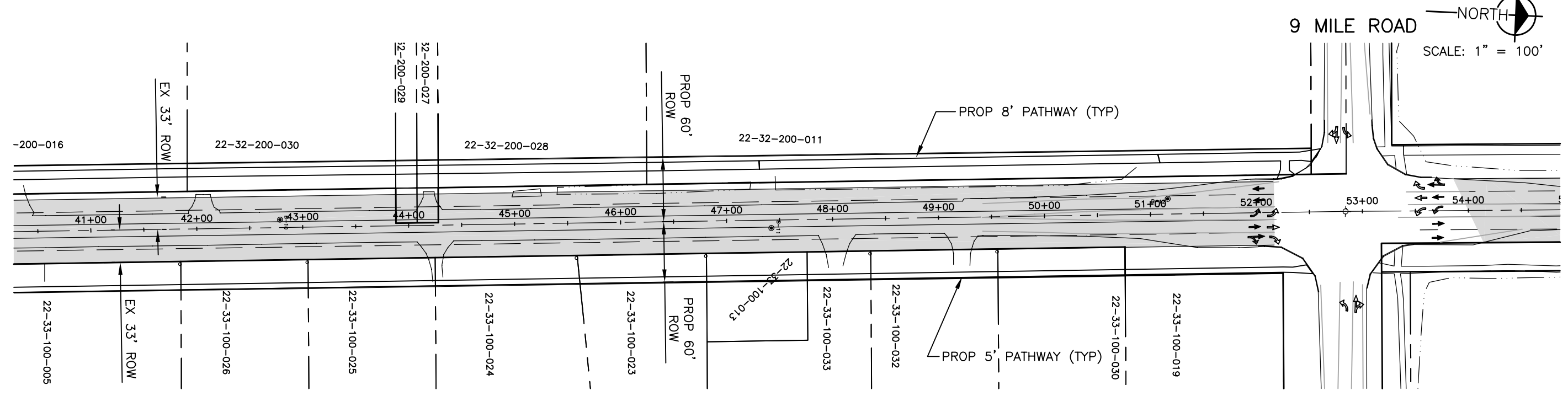
13A

NORTH  
SCALE: 1" = 100'



ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-32-200-014	7431
22-32-200-016	6019
22-33-100-006	2691
22-33-100-005	5400

NORTH  
SCALE: 1" = 100'



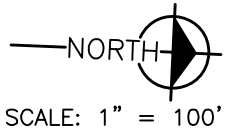
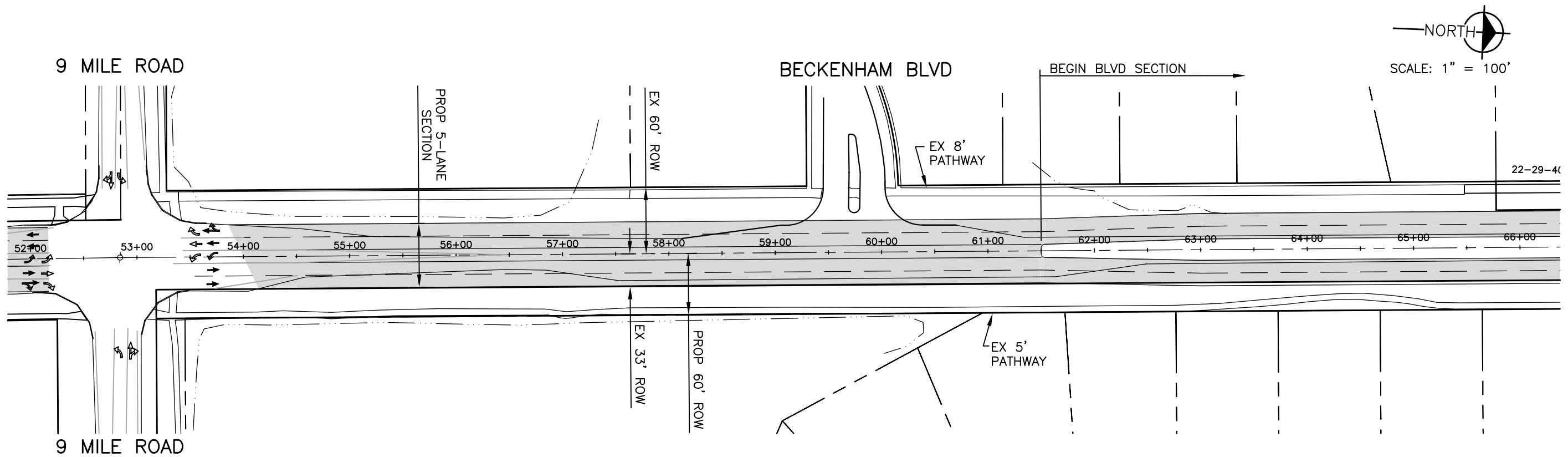
ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-32-200-030	5187
22-32-200-028	5098
22-32-200-011	15745
22-32-200-029	523
22-32-200-027	523
22-33-100-026	3242
22-33-100-025	3240
22-33-100-024	3652
22-33-100-023	3260
22-33-100-013	2565
22-33-100-033	1620

ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-33-100-032	3240
22-33-100-030	3240

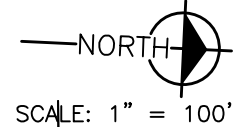
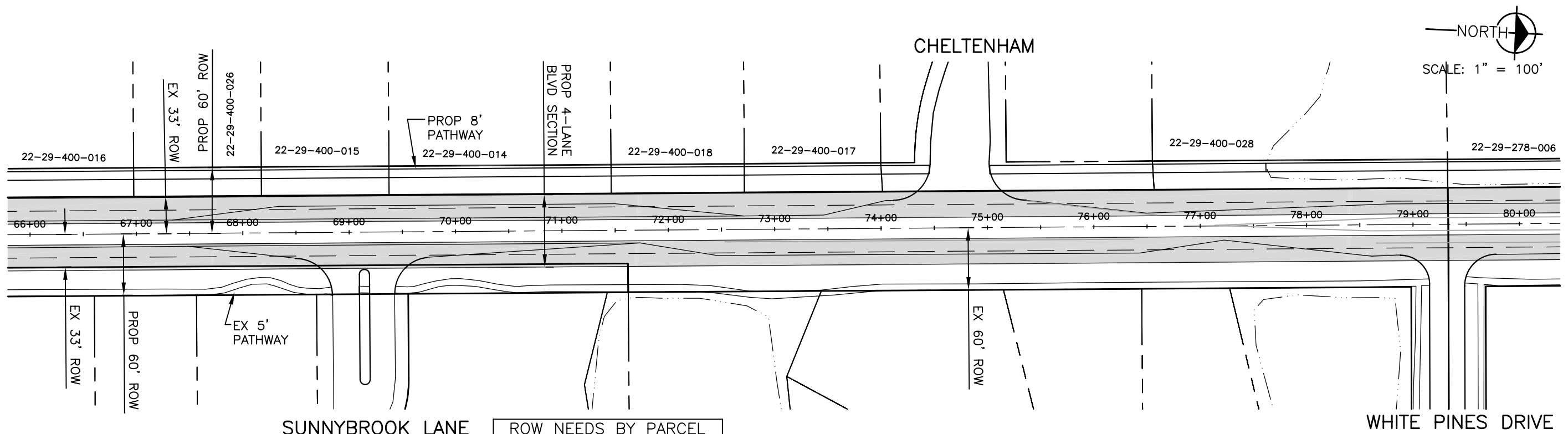
NOTE - DRAWINGS SHOW OVERALL SCHEMATIC DESIGN AND LAYOUT FOR PLANNING PURPOSES ONLY.

↔ - EXISTING MOVEMENTS  
↔ - PROPOSED MOVEMENTS

**BECK ROAD EIGHT MILE TO NINE MILE  
LONG TERM CAPACITY IMPROVEMENTS**



engineers  
scientists  
architects  
constructors



**City of Novi**  
Beck Road Scoping and Study  
Eight Mile to Grand River

ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-29-400-016	3240
22-29-400-026	3248
22-29-400-015	3238
22-29-400-014	5632
22-29-400-018	2962
22-29-400-017	3477
22-29-400-028	7437
22-29-278-006	10142

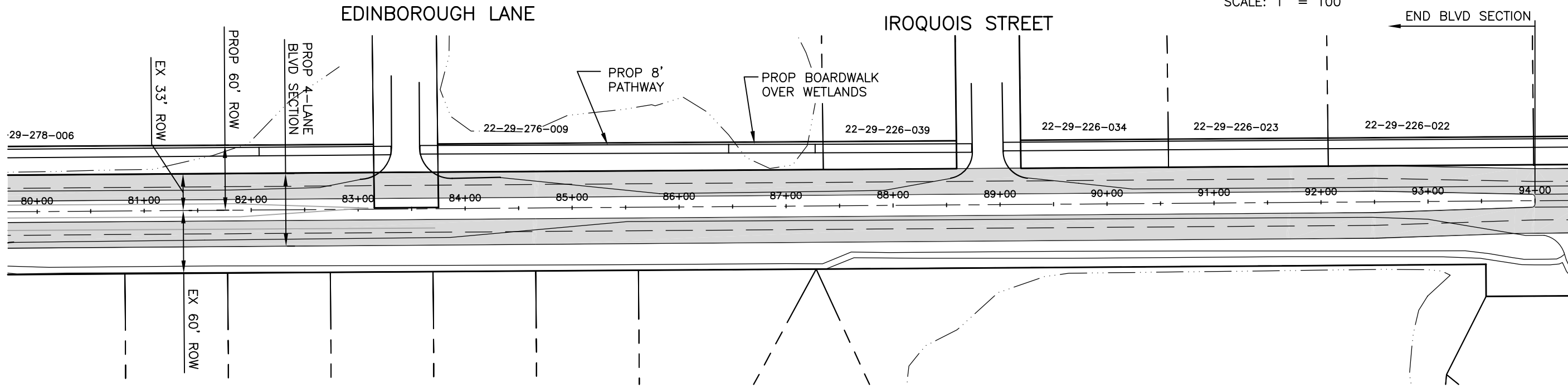
NOTE - DRAWINGS SHOW OVERALL SCHEMATIC DESIGN AND LAYOUT FOR PLANNING PURPOSES ONLY.

**BECK ROAD NINE MILE TO TEN MILE  
LONG TERM CAPACITY IMPROVEMENTS**

↔ - EXISTING MOVEMENTS  
↔ - PROPOSED MOVEMENTS

PROJECT NO.  
G06496  
FIGURE NO.  
**14A**

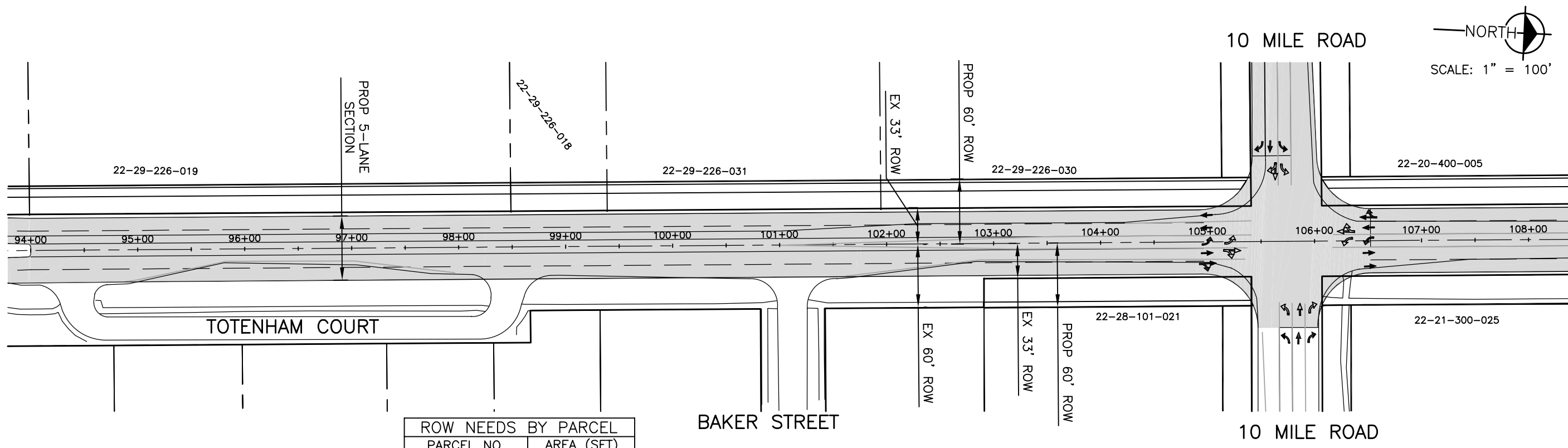
NORTH  
SCALE: 1" = 100'



END BLVD SECTION



engineers  
scientists  
architects  
constructors



NORTH  
SCALE: 1" = 100'

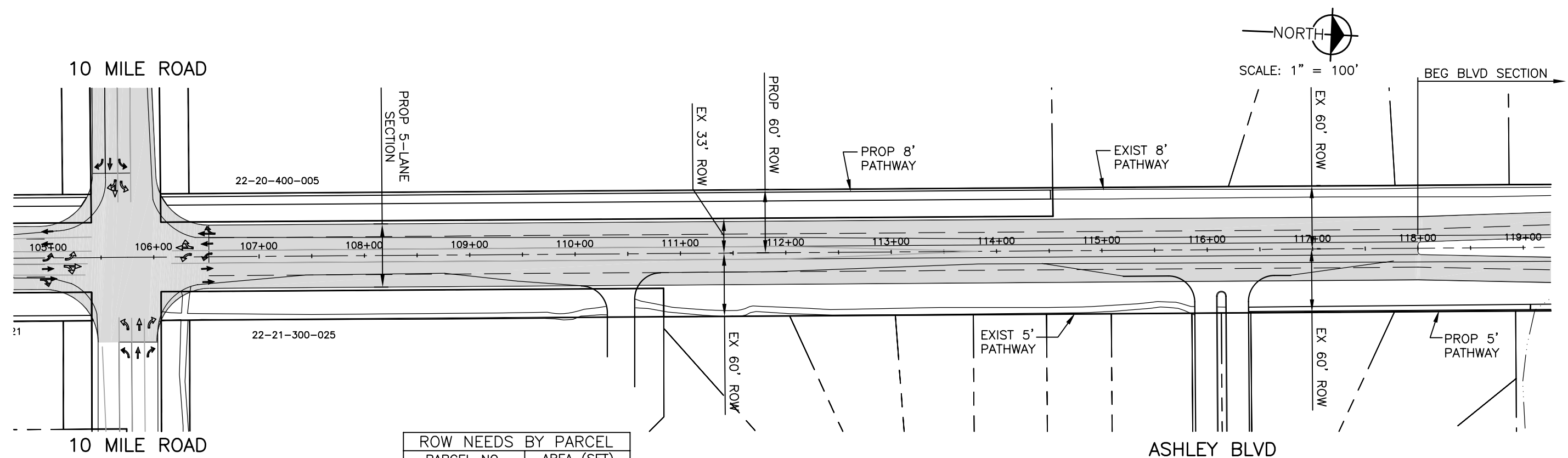
City of Novi  
Beck Road Scoping and Study  
Eight Mile to Grand River

ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-29-276-009	9442
22-29-226-039	3261
22-29-226-034	3607
22-29-226-023	3911
22-29-226-022	5049
22-29-226-019	11896
22-29-226-018	2390
22-29-226-031	6816
22-29-226-030	9262
22-28-101-021	6760

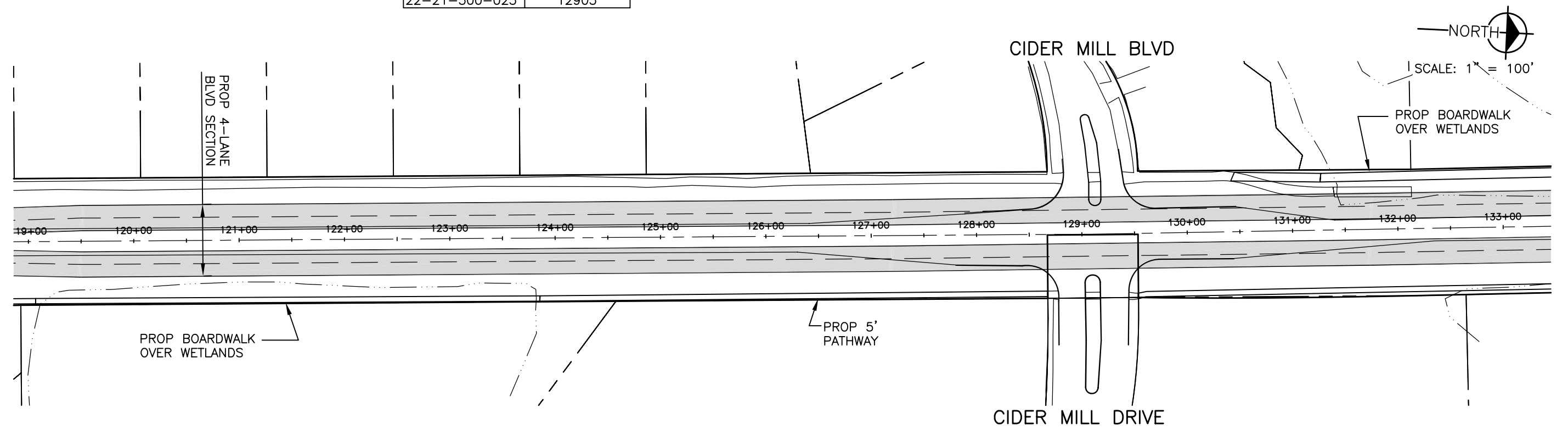
EXISTING MOVEMENTS  
PROPOSED MOVEMENTS

NOTE - DRAWINGS SHOW OVERALL SCHEMATIC DESIGN AND LAYOUT FOR PLANNING PURPOSES ONLY.

**BECK ROAD NINE MILE TO TEN MILE  
LONG TERM CAPACITY IMPROVEMENTS**



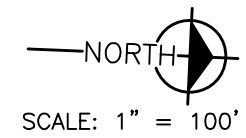
ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-20-400-005	22871
22-21-300-025	12903



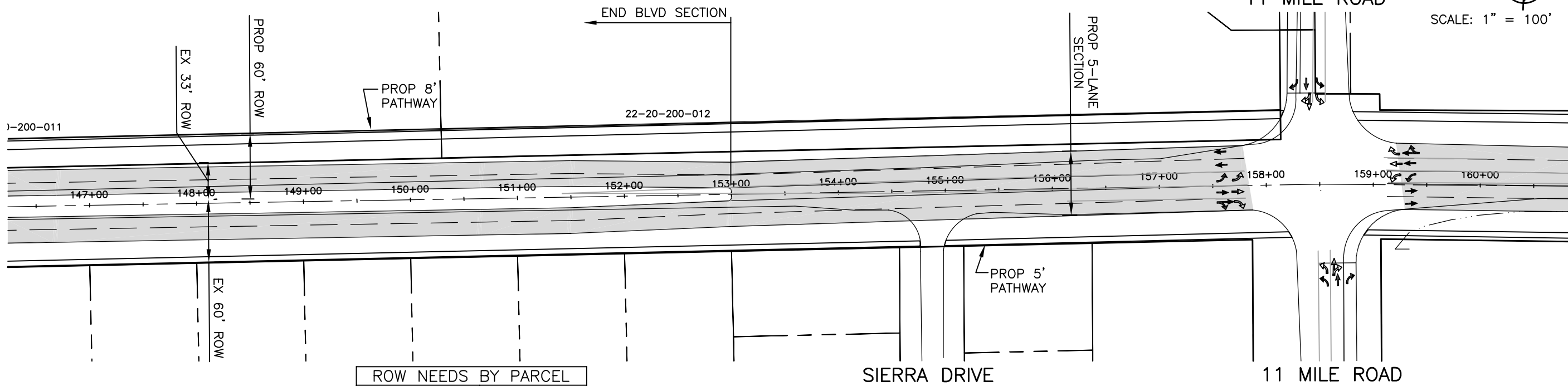
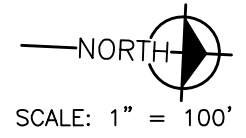
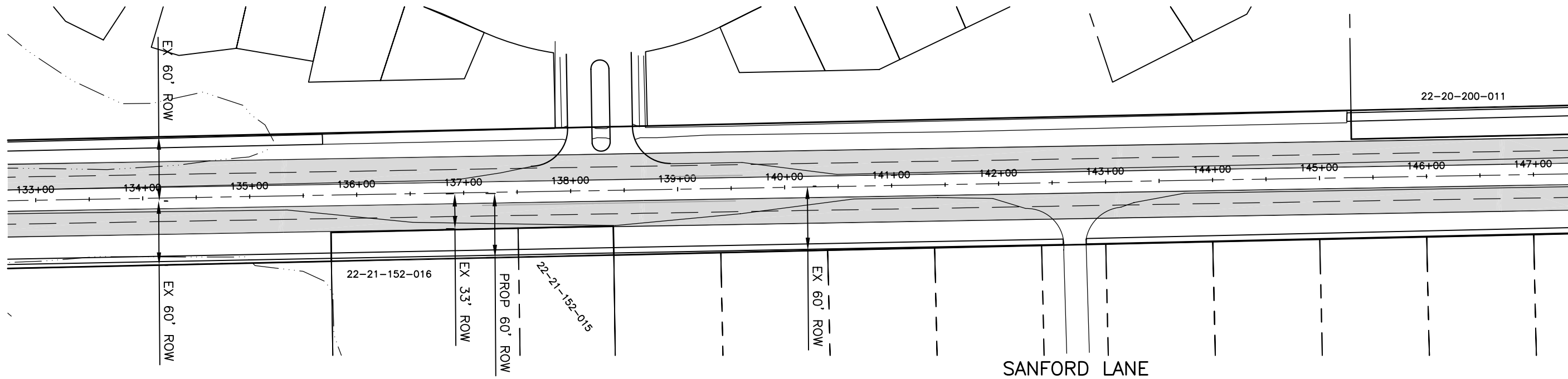
- EXISTING MOVEMENTS
- PROPOSED MOVEMENTS

NOTE - DRAWINGS SHOW OVERALL SCHEMATIC DESIGN AND LAYOUT FOR PLANNING PURPOSES ONLY.

## BECK ROAD TEN MILE TO ELEVEN MILE LONG TERM CAPACITY IMPROVEMENTS



KIRKWAY BLVD



ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-21-152-016	4726
22-21-152-015	2403
22-20-200-011	13544
22-20-200-012	21526

- EXISTING MOVEMENTS
- PROPOSED MOVEMENTS

NOTE - DRAWINGS SHOW OVERALL SCHEMATIC DESIGN AND LAYOUT FOR PLANNING PURPOSES ONLY.

**BECK ROAD TEN MILE TO ELEVEN MILE  
LONG TERM CAPACITY IMPROVEMENTS**



engineers  
scientists  
architects  
constructors

**City of Novi**  
Beck Road Scoping and Study  
Eight Mile to Grand River

PROJECT NO.  
G06496

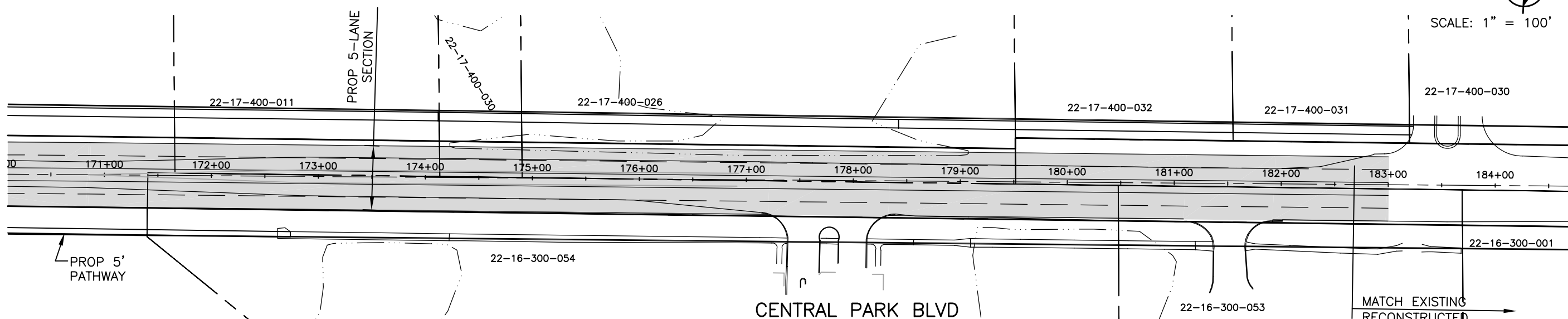
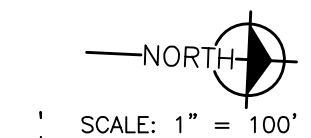
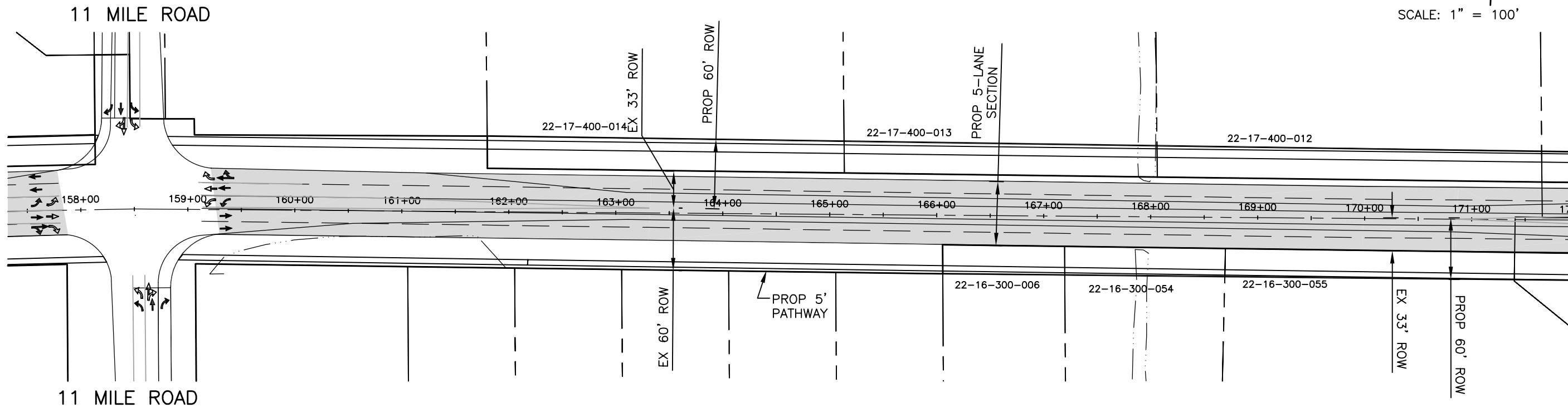
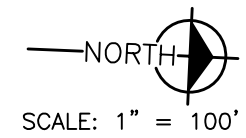
FIGURE NO.

**15B**

\\REF\B-24\36  
REF\B-65\11

PLOT INFO: N:\06496\CD\BECK ROAD ALTS.DWG DATE: 12/7/2006 TIME: 10:02:42 AM USER: BDR





ROW NEEDS BY PARCEL	
PARCEL NO.	AREA (SFT)
22-17-400-014	9979
22-17-400-013	8626
22-17-400-012	10443
22-16-300-006	3071
22-16-300-054	3976
22-16-300-055	7187
22-17-400-011	7085
22-17-400-030	2186
22-17-400-026	12937
22-16-300-054	21879
22-17-400-032	3580
22-17-400-031	2861
22-16-300-053	7153

NOTE - DRAWINGS SHOW OVERALL SCHEMATIC DESIGN AND LAYOUT FOR PLANNING PURPOSES ONLY.

## BECK ROAD ELEVEN MILE TO GRAND RIVER LONG TERM CAPACITY IMPROVEMENTS

- EXISTING MOVEMENTS  
 - PROPOSED MOVEMENTS



engineers  
scientists  
architects  
constructors

City of Novi  
Beck Road Scoping and Study  
Eight Mile to Grand River

PROJECT NO.  
G06496

FIGURE NO.  
**16**

# Appendices

# **SEMCOG** . . . Local Governments Advancing Southeast Michigan

Southeast Michigan Council of Governments • 535 Griswold Street, Suite 300 • Detroit, Michigan 48226-3602 • 313-961-4266 • Fax 313-961-4869  
www.semco.org

October 20, 2006

Mr. Brian Coburn  
City of Novi  
45175 West 10 Mile Road  
Novi, MI 48375

Dear Mr. Coburn:

Per your request, enclosed are the projected SEMCOG travel demand forecast model results. Enclosed please find a spreadshcet of model volumes in the Beck Rd. study area.

The projections use SEMCOG 2030 Regional Transportation Plan land use data sets. The input data for the travel model are based on the forecasted socio-economic data adopted for SEMCOG 2030 RTP process. Please note that the model is designed to analyze traffic patterns and congestion on a regional level. When looking at the community level, the data may be skewed due to the relatively large size of our regional activity zones, the detail level of roadway network (i.e., only major roadways are included in our regional model), and the location of centroid connectors.

To determine the growth rates, traffic count and socioeconomic data should be used. Further study of the socioeconomic impacts to the study area is highly recommended.

If you have any questions regarding the enclosed information, please give me a call at 313-961-4266.

Sincerely,



Stephanie J. Taylor  
Senior Transportation Planner

Cc: Li-yang Feng, Coordinator

Enclosure

**Beck Rd (8 Mile to Grand River)**

Table 1. Projected Beck Rd Volume Changes Between Model Years 2005 and 2030

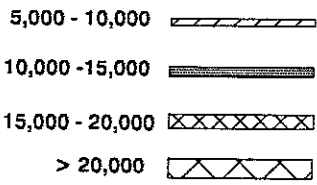
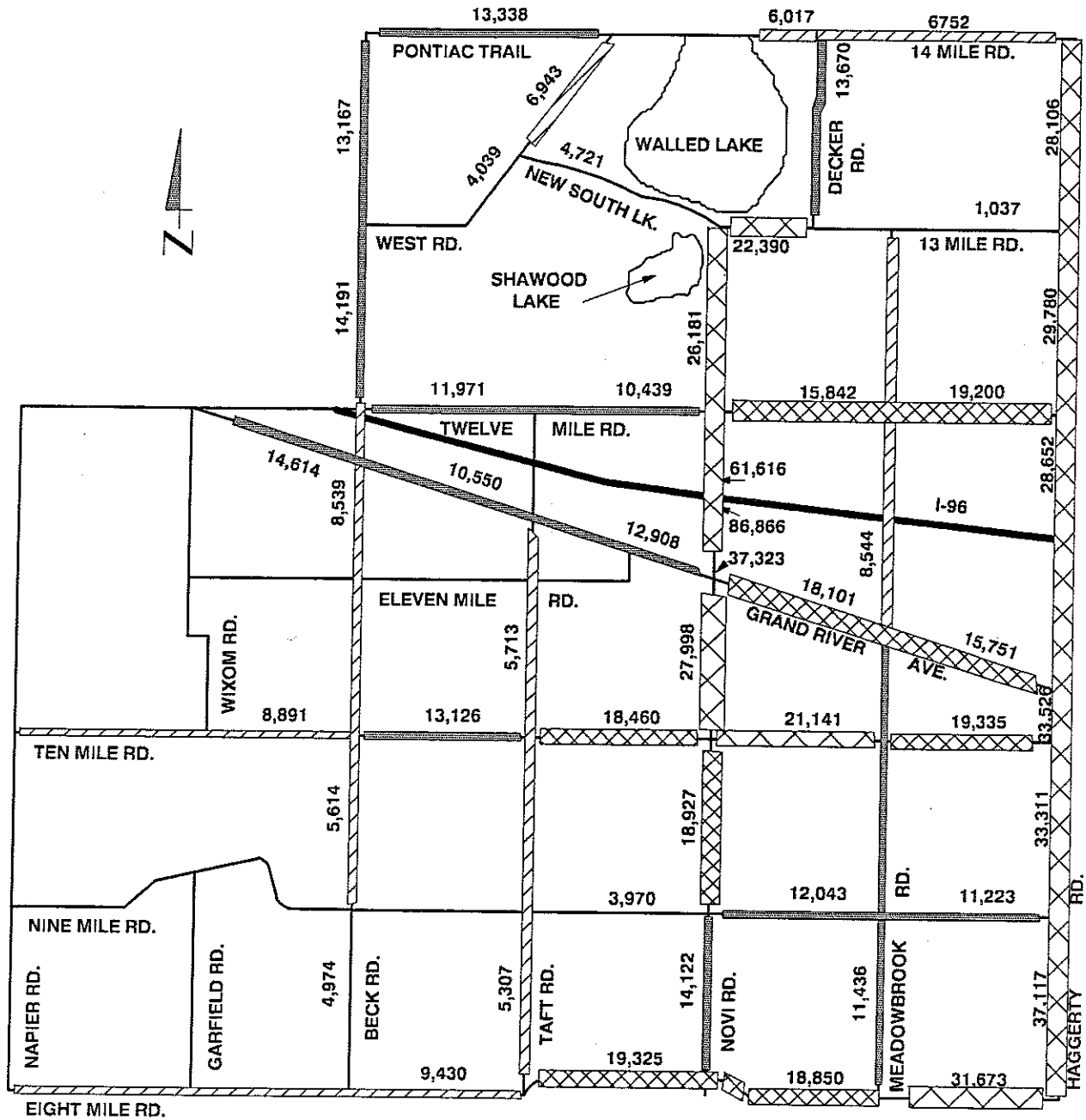
Link ID	Name	Intersection		2005 Volume	2030 Volume	Changing Percentage (%)	No. of Lanes	
		From	To				AB	BA
1872	Beck	8 Mile	9 Mile	17,800	22,700	27.5%	1	1
1873	Beck	9 Mile	10 Mile	17,600	22,300	26.7%	1	1
1874 & 1875	Beck	10 Mile	Grand River	19,100	21,300	11.5%	1	1
Total/Avg				54,500	66,300			

**City of Novi  
MASTER PLAN FOR LAND USE  
THOROUGHFARE PLAN ELEMENT UPDATE**

Prepared for:  
City of Novi

Prepared By:  
Birchler/Arroyo Associates, Inc.

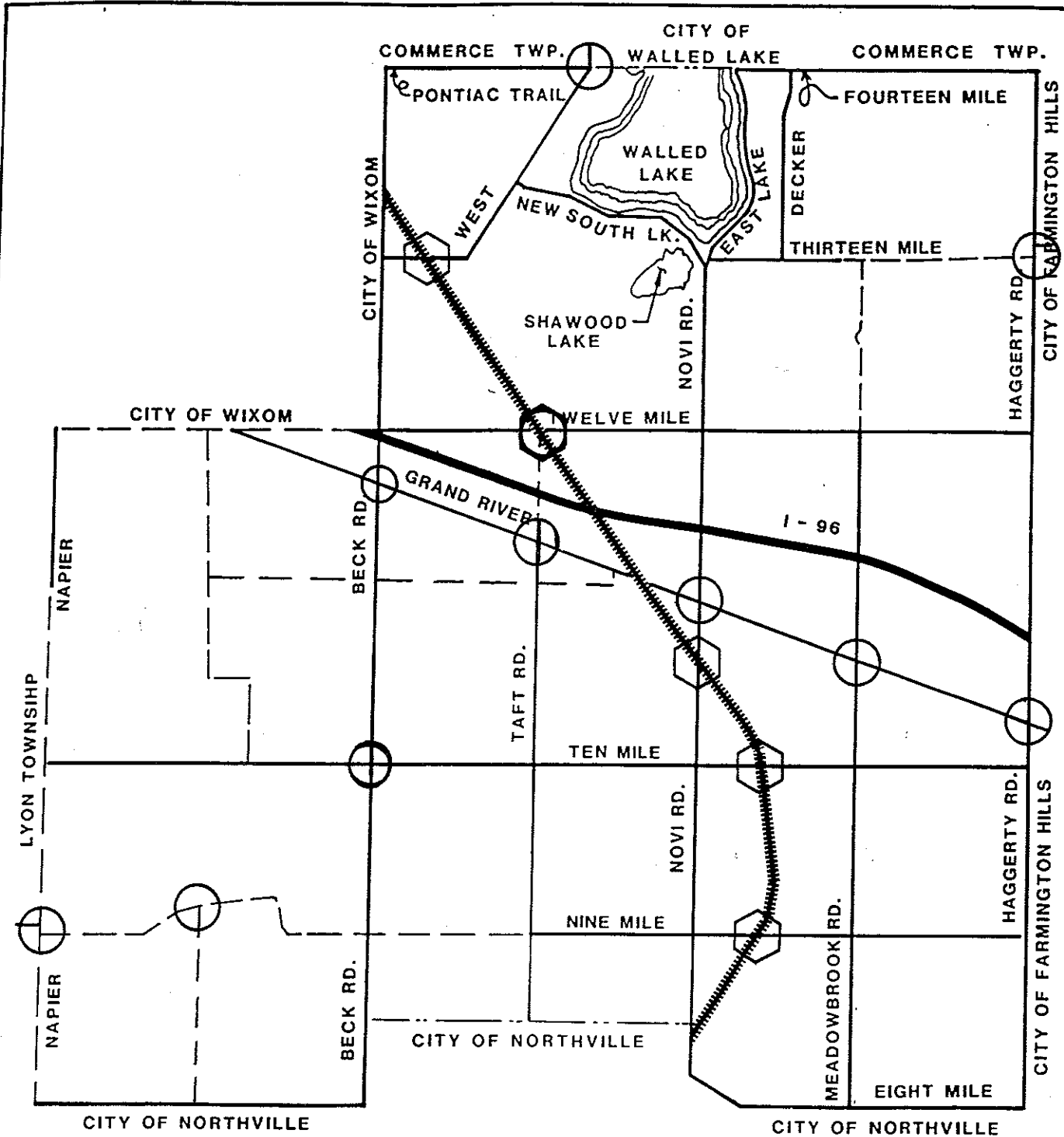
September 1992






# AVERAGE DAILY TRAFFIC VOLUMES - 1991

BARTON-ASCHMAN ASSOCIATES, INC. of Michigan

MAP 7

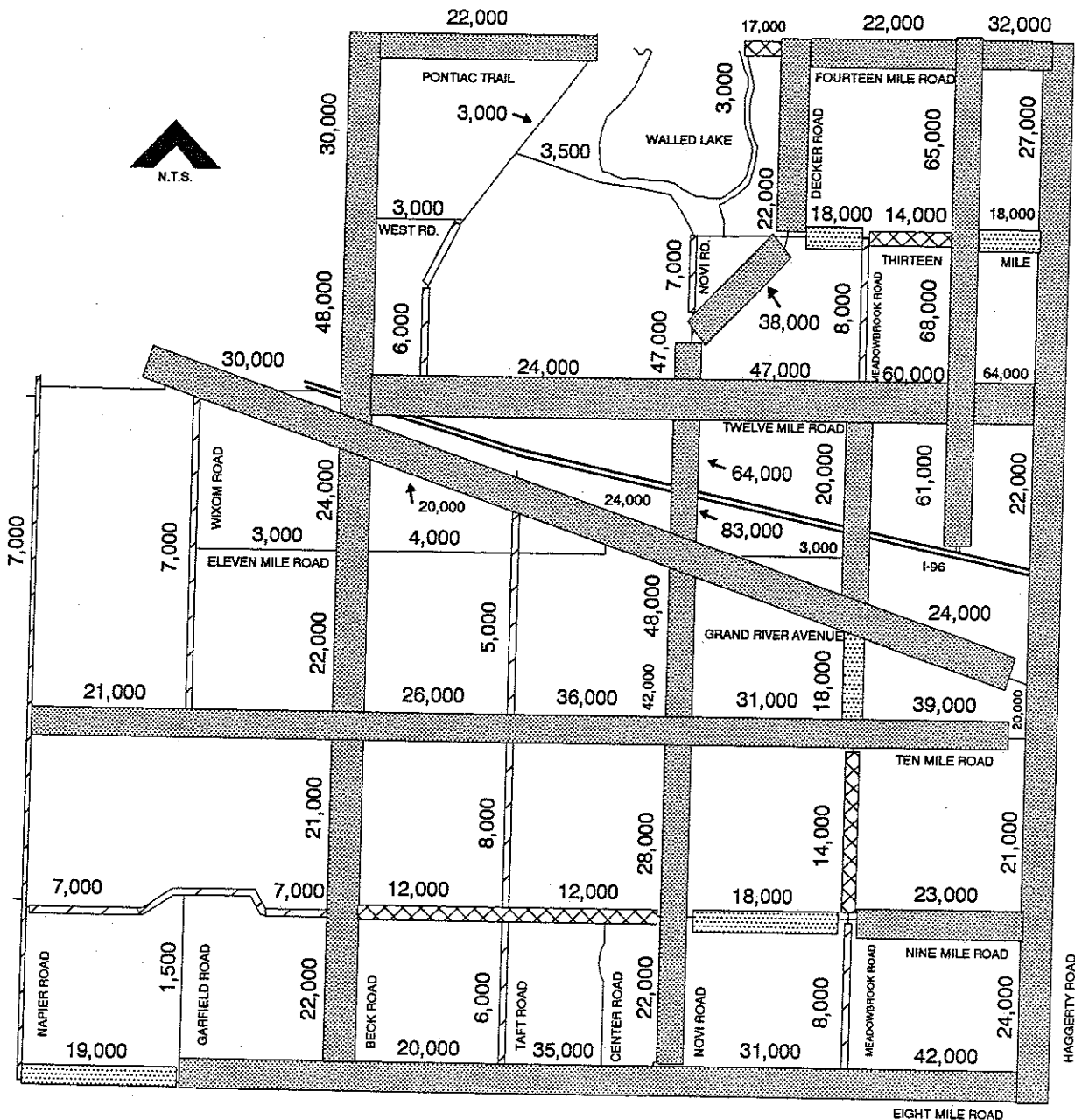


-  POORLY ALIGNED / POOR SIGHT DISTANCE
-  GRADE RAIL CROSSING
-  UNPAVED ROADS

MAP 11

# ROADWAY PROBLEM AREAS



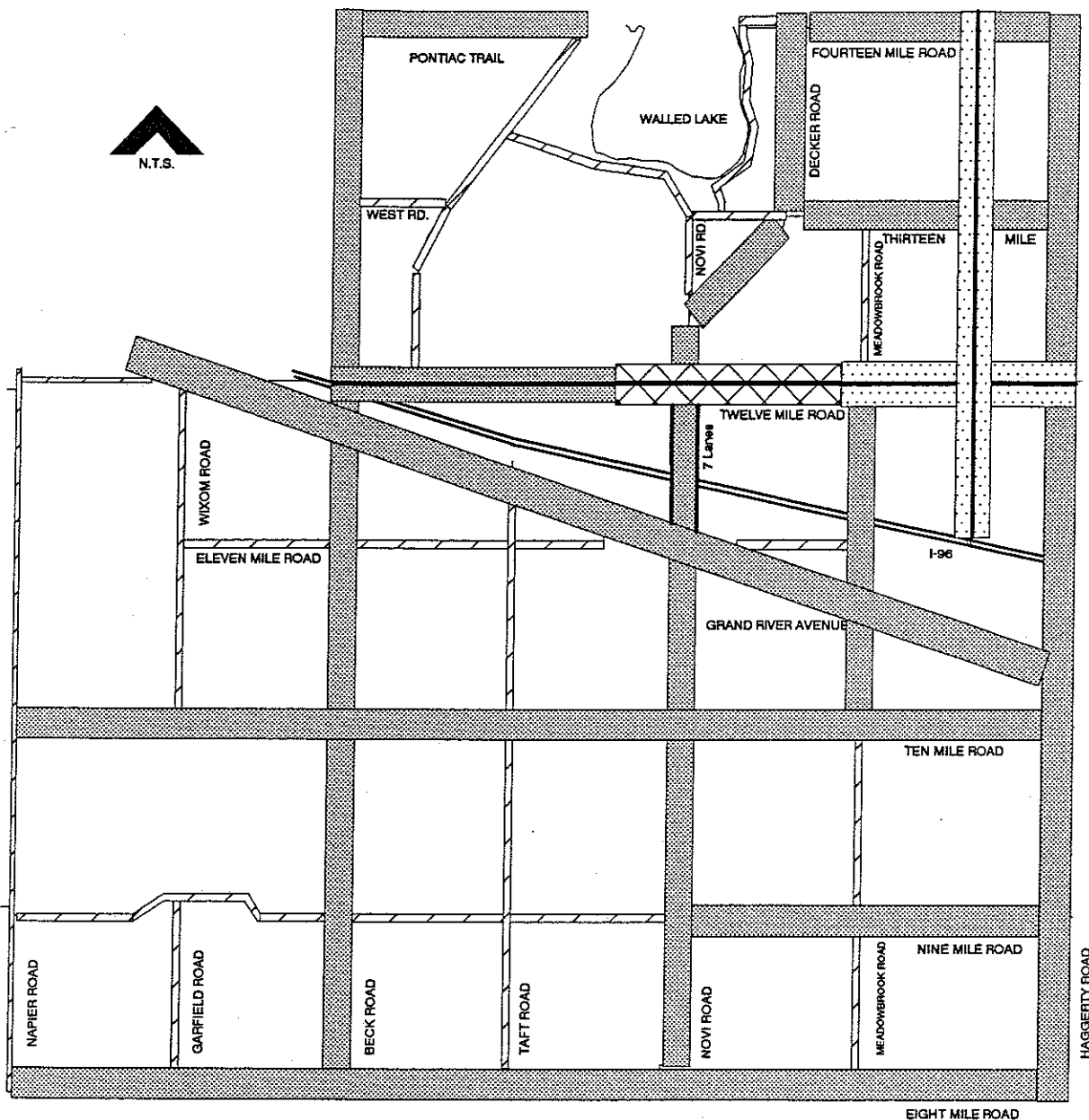


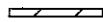


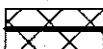
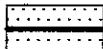
# FUTURE AVERAGE DAILY TRAFFIC VOLUMES

- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- > 20,000

Source: Novi Traffic Model





- 2 or 3 Lanes 
- 5 Lanes 
- 4 Lanes Divided 
- 6 Lanes Divided 
- 8 Lanes Divided 

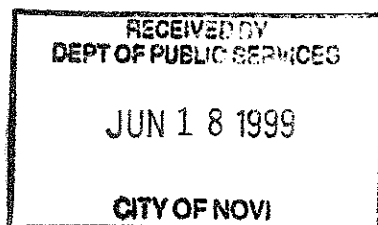
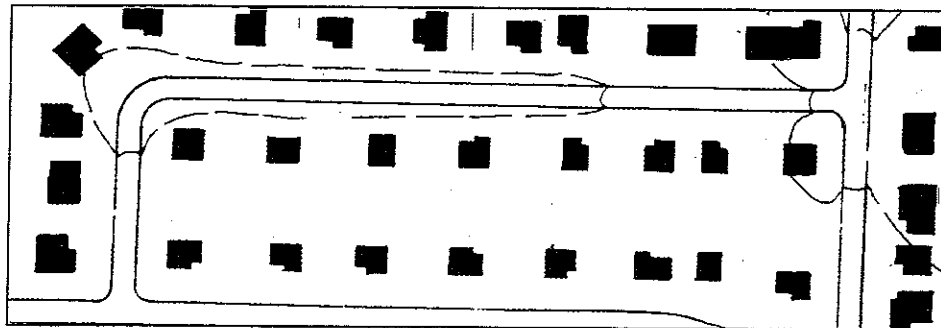
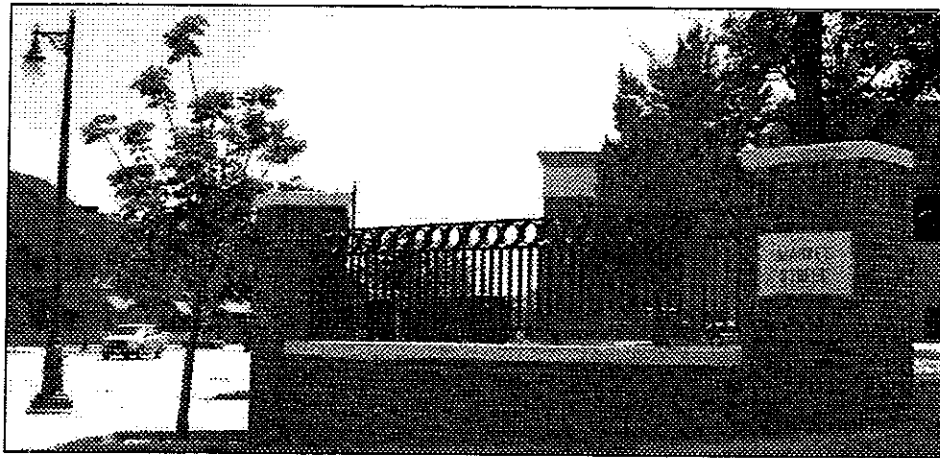
## FUTURE TRAFFIC LANES

10/92

# NOVI 2020

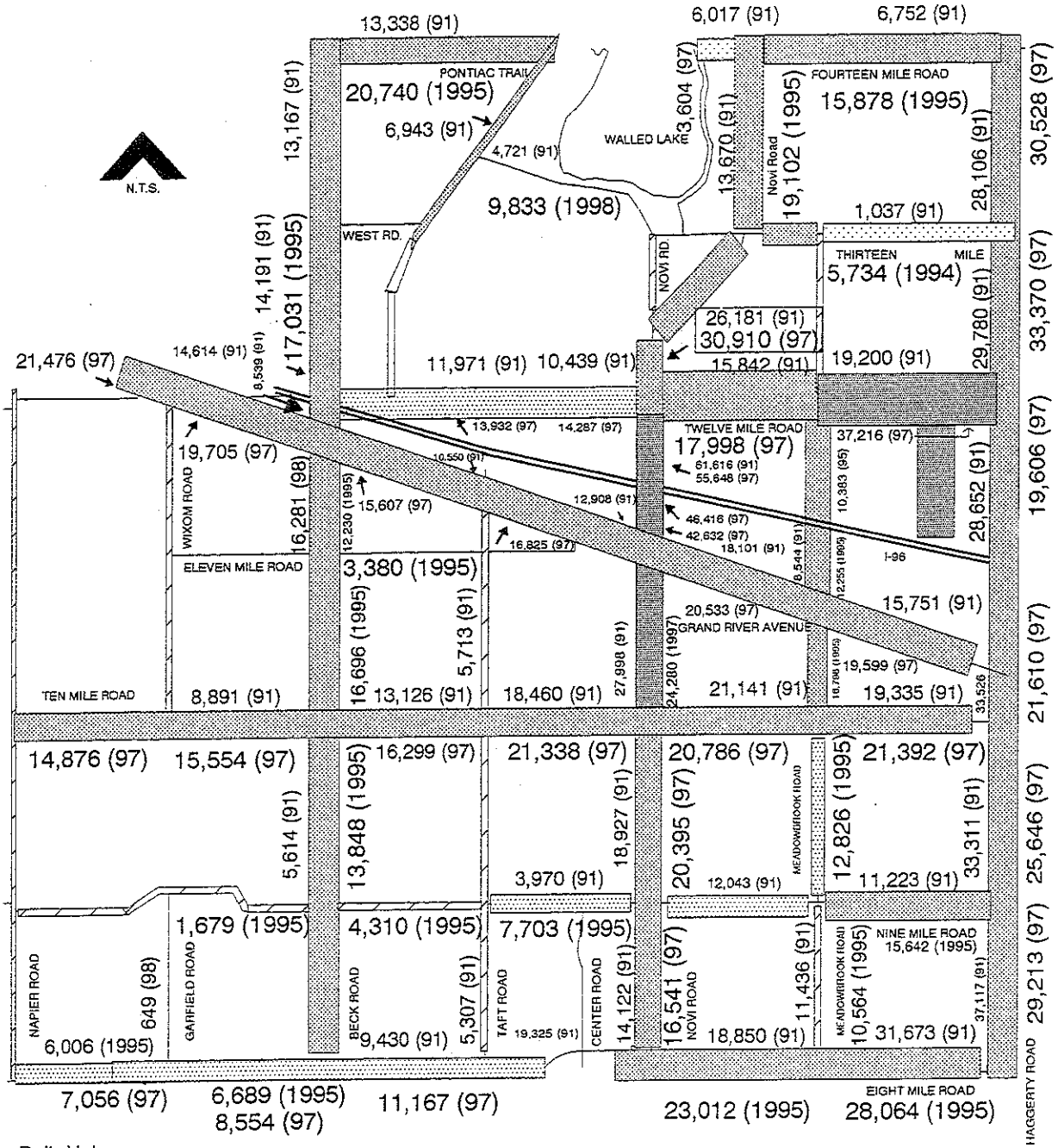
## Master Plan for Land Use

### Thoroughfare Plan Summary



Prepared by:  
City of Novi Planning Commission

Assisted by:  
Birchler Arroyo Associates, Inc.



# DAILY TRAFFIC VOLUME COMPARISON (1991-1998)





**Table 2**  
**ANNUAL GROWTH RATES FOR DAILY TRAFFIC, 1991-1997**

Road Name	Crossroad 1	Crossroad 2	1991 ADT	1997 ADT	Annual Growth Rate (%)
Haggerty	12 Mile	13 Mile	29,780	33,370	1.9
Haggerty	Ten Mile	Nine Mile	33,311	25,646	- 4.4
Grand River	Novi	Taft	12,908	16,825	4.5
12 Mile	Novi	Taft	10,439	14,287	5.3
12 Mile	Meadowbrook	Haggerty	19,201	37,216	11.7
Pontiac Tr.	West	Beck	13,338	20,740 (95)	13.9
Novi	13 Mile	14 Mile	13,670	19,102 (95)	9.9
East Lake	13 Mile	14 Mile	7,996	3,604	- 7.6

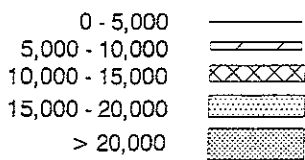
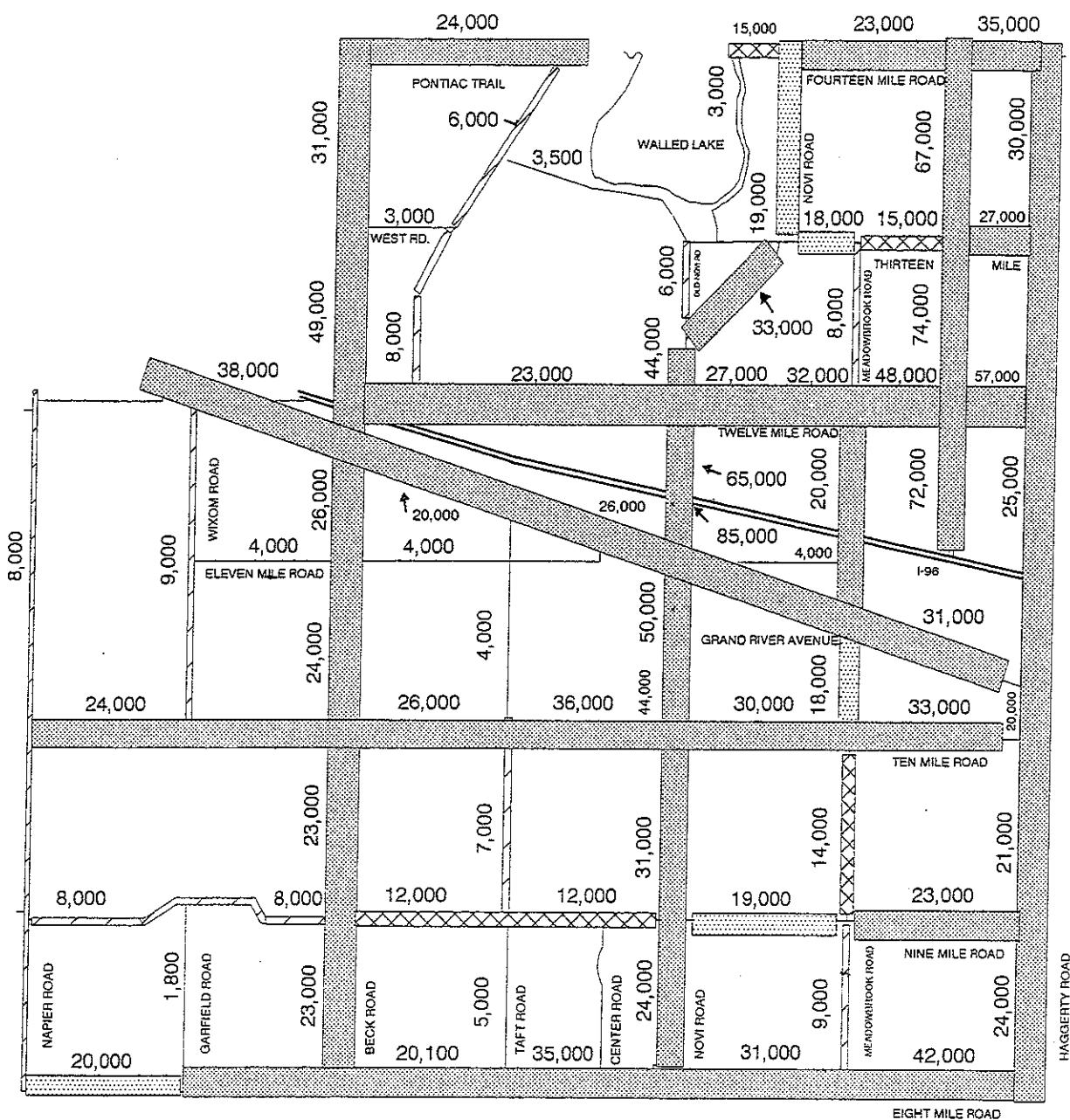
Traffic volumes on Haggerty Road south of Ten Mile Road, have declined since 1991 due to the impact of the M-5 interchange at Twelve Mile Road.

Some road also have seen a reduction in traffic volumes. For example, Haggerty Road, south of Ten Mile Road, had a drop in traffic volumes from 33,311 in 1991 to 25,646 in 1997 due to the impact of the M-5 interchange at Twelve Mile Road.

Another measurement related to traffic volumes and roadway classification is the level of service (LOS). The City's study examined LOS for both intersections and segments of roadways. LOS is defined in terms of delay to motorists. For an intersection, LOS is measured by the average stop time it takes to travel through an intersection. LOS along a street segment is based on average through-vehicle travel speed and delays, which are often caused by vehicular turning movements.

Level of service is rated on a scale with LOS A having very low delays at intersections and free-flow traffic along roadways. On the other end of the spectrum, LOS F is characterized by lengthy delays at intersections and extremely slow speeds along roadways. From a road design perspective, LOS D is generally considered to be the limit of an acceptable delay.

The LOS analysis of intersections and roadways indicated that most areas operate at a LOS C or better. Nevertheless, the study indicated there were seven intersections operating at a LOS F and 15 operating at a LOS D. The LOS analysis for roadway segments indicates most roadways also operated at a LOS C or better. However, problem areas during the morning peak hour include segments of Novi Road, Haggerty Road, Thirteen Mile Road, and Nine Mile Road. During the evening peak hour, some sections of Haggerty Road, Beck Road, Ten Mile Road, and Meadowbrook Road have a LOS below C.



# FUTURE DAILY TRAFFIC VOLUMES

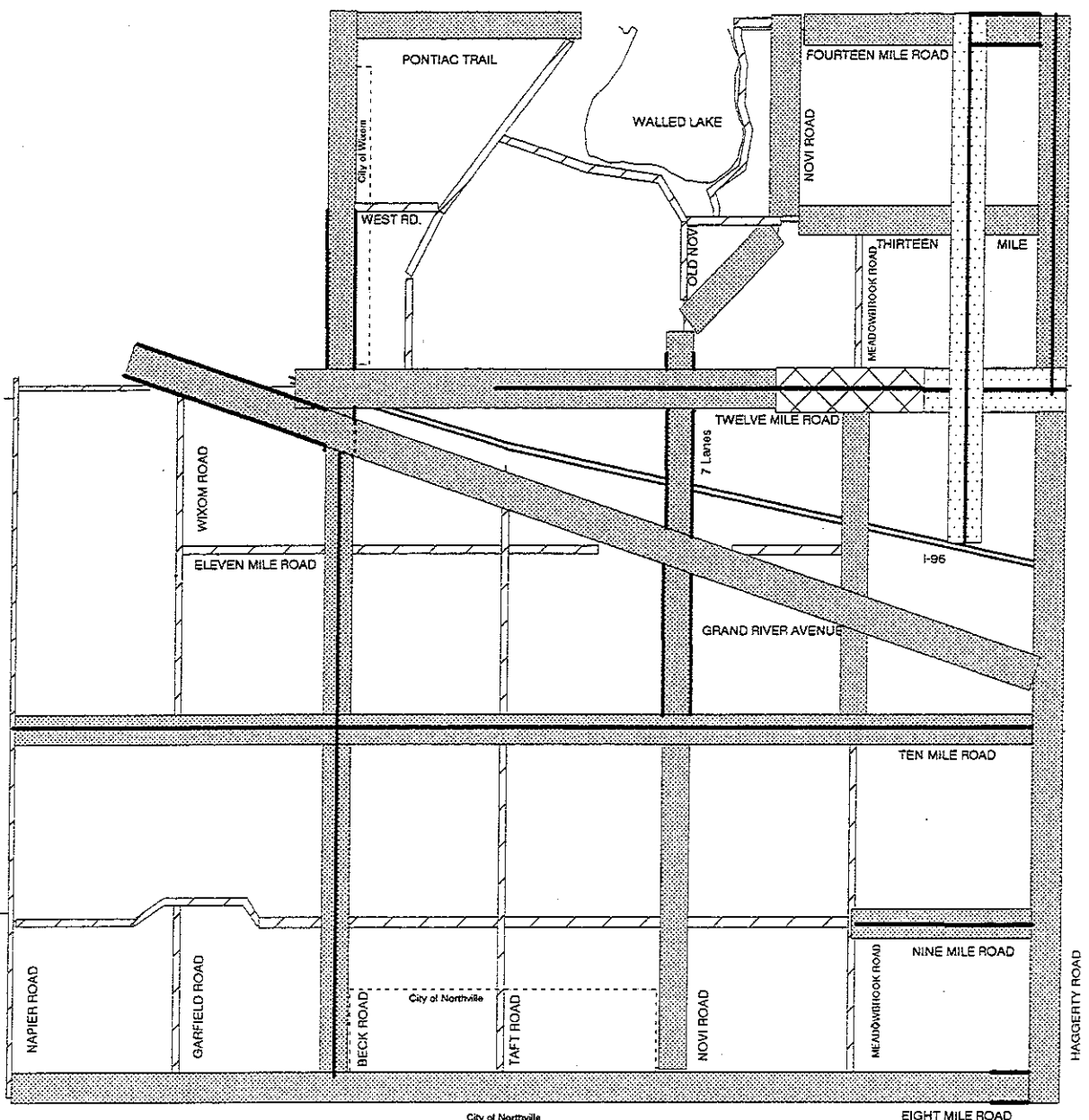
Source: Novi Traffic Model w/ 1999 Adjustments

Based on Build - out Conditions



BIRCHLER ANDRYS ASSOCIATES, INC.





- 2 or 3 Lanes
- 5 Lanes
- 4 Lanes Divided
- 6 Lanes Divided
- 6 Lanes Divided or 7 Lanes
- 8 Lanes Divided

3/99

# FUTURE TRAFFIC LANES



BIRCHLER ARROY  
ASSOCIATES, INC.



Based on Build - out Conditions

# Community Plans and Projections

## Thoroughfare Plan

### Non-motorized Pathways

The Bicycle and Pedestrian Master Plan (fig. 55) illustrates the required widths and locations for non-motorized paths throughout the city. For collector and arterial roads, five foot sidewalks are required on both sides of the road unless the plan shows a bicycle path, in which case an eight-foot wide bicycle path is required. The only exception is collector roads in Industrial (I-1 and I-2) districts, where the Design and Construction Standards Ordinance does not require pathways along internal non-residential collectors and local industrial roadways. Pathways are still required along all classes of arterial roads in industrial zoning districts. Specific requirements for construction of these links are detailed in the City's Design and Construction Standards. New developments are required to implement the Bicycle and Pedestrian Master Plan along road frontages. The city's Bicycle and Pedestrian Pathways Phasing Plan (fig. 54) was developed to assure that gaps in the existing pathways are connected. The priority areas to connect are those that connect neighborhoods to schools, recreation and public facilities, cultural and commercial centers. The plan prioritizes these connections accordingly in five year increments.

### Access Management

There are many access management techniques that can be implemented by the city, ranging from adequate driveway spacing to commercial service roads. These techniques are usually implemented through the site plan and plat review process. The techniques described below are suggested as guidelines in the development review process. Each case will require an individual judgment and analysis to determine the appropriate action, given the characteristics of the site and use.

The principal goal of access management is that all developments should be provided with safe and reasonable access from public streets using the minimum number of access points (driveways) necessary to achieve this goal. Access through a shared driveway, frontage road or rear service road (located in rear yard) should be encouraged along busy corridors. If these techniques are not feasible, one (1) two-way driveway or two (2) one-way driveways (one inbound and one outbound) should be the rule unless a development is so large that volumes or emergency access requirements warrant additional driveways.

The following describes in more detail various forms of access management that are available for consideration and use as part of the implementation of the Master Plan.

### Number of Driveways

For many of the reasons noted above, it is also important to regulate the number of driveways each development has onto a major roadway. In general, the following guidelines should be followed:

- All development should be provided with safe and reasonable access from public streets using the minimum number of access points (driveways) necessary to achieve this goal.
- When access via a shared driveway, frontage road (located between public street and front building setback), or rear service road (located in rear yard) is not possible, one two-way drive or two one-way drives (one inbound and one outbound) may be provided.







# Pathway Phasing Map

City of Novi, Michigan  
August 10, 2004

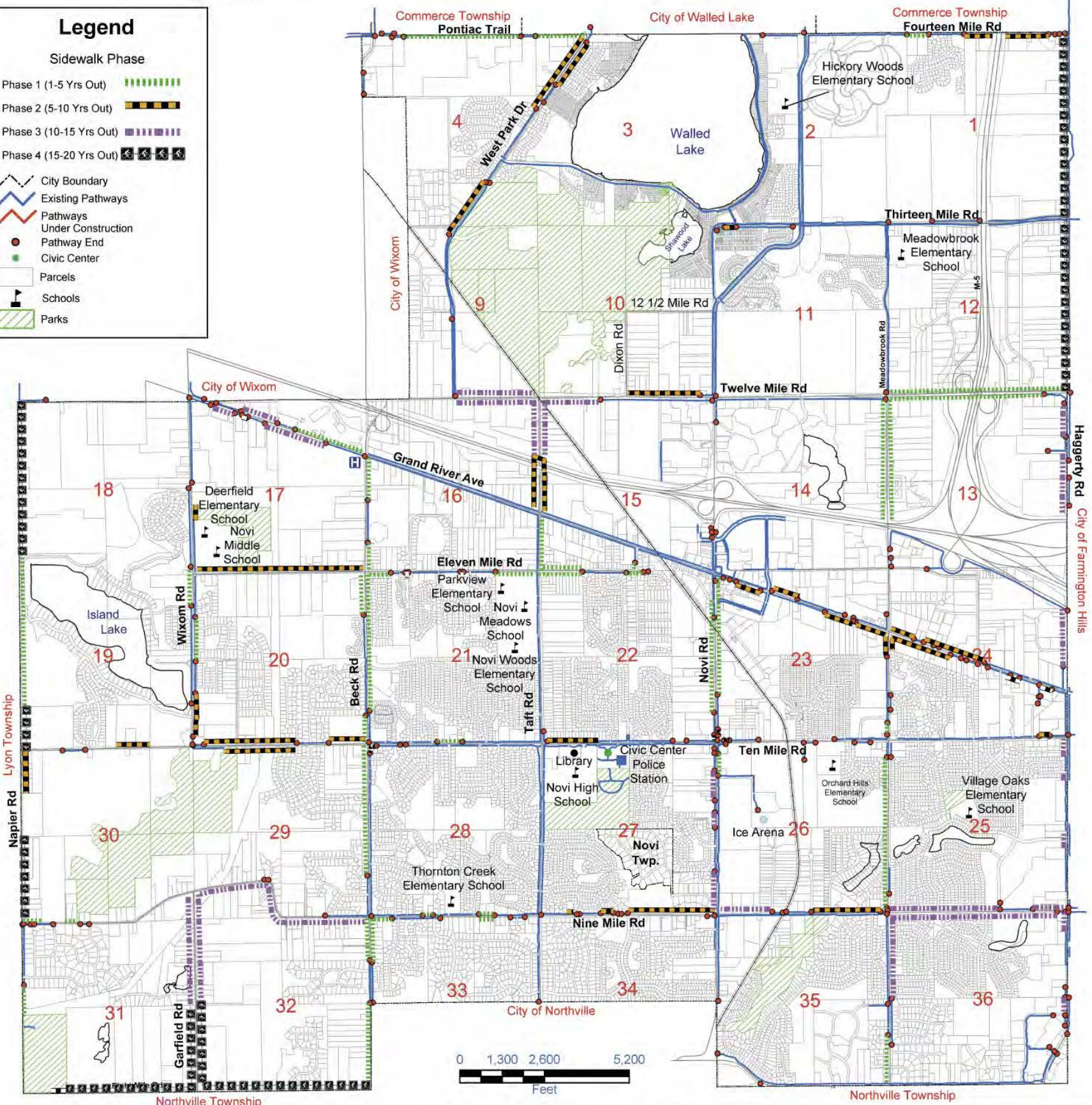


**Legend**

**Sidewalk Phase**

- Phase 1 (1-5 Yrs Out)
- Phase 2 (5-10 Yrs Out)
- Phase 3 (10-15 Yrs Out)
- Phase 4 (15-20 Yrs Out)

- City Boundary
- Existing Pathways
- Pathways Under Construction
- Pathway End
- Civic Center
- Parcels
- Schools
- Parks



Created using the GIS Geographic Information System of the City of Novi  
45175 W. Ten Mile Road  
Novi, Michigan 48375

Created by:  
Bill Berdelman  
GIS Technician  
Department of GIS/  
Environmental Services

Date Initially Created:  
February 28, 2001  
Date of Last Revision:  
August 10, 2004  
Project Filename:  
P:\Proj2003\Pathway.mxd  
Map Name: Pathway

Copyright 2004, City of Novi, Michigan

No Part of this product shall be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose without prior written permission from the City of Novi

This map complies with the National Map Accuracy standards. The City of Novi and its Department of GIS/ Environmental Services assume no legal responsibility for the content and/or inappropriate use of this document.



Figure 54.a. Boardwalk along Nine Mile Road.



Figure 54.b. Sidewalk along Novi Road.

Figure 54. Pathway Phasing Map.





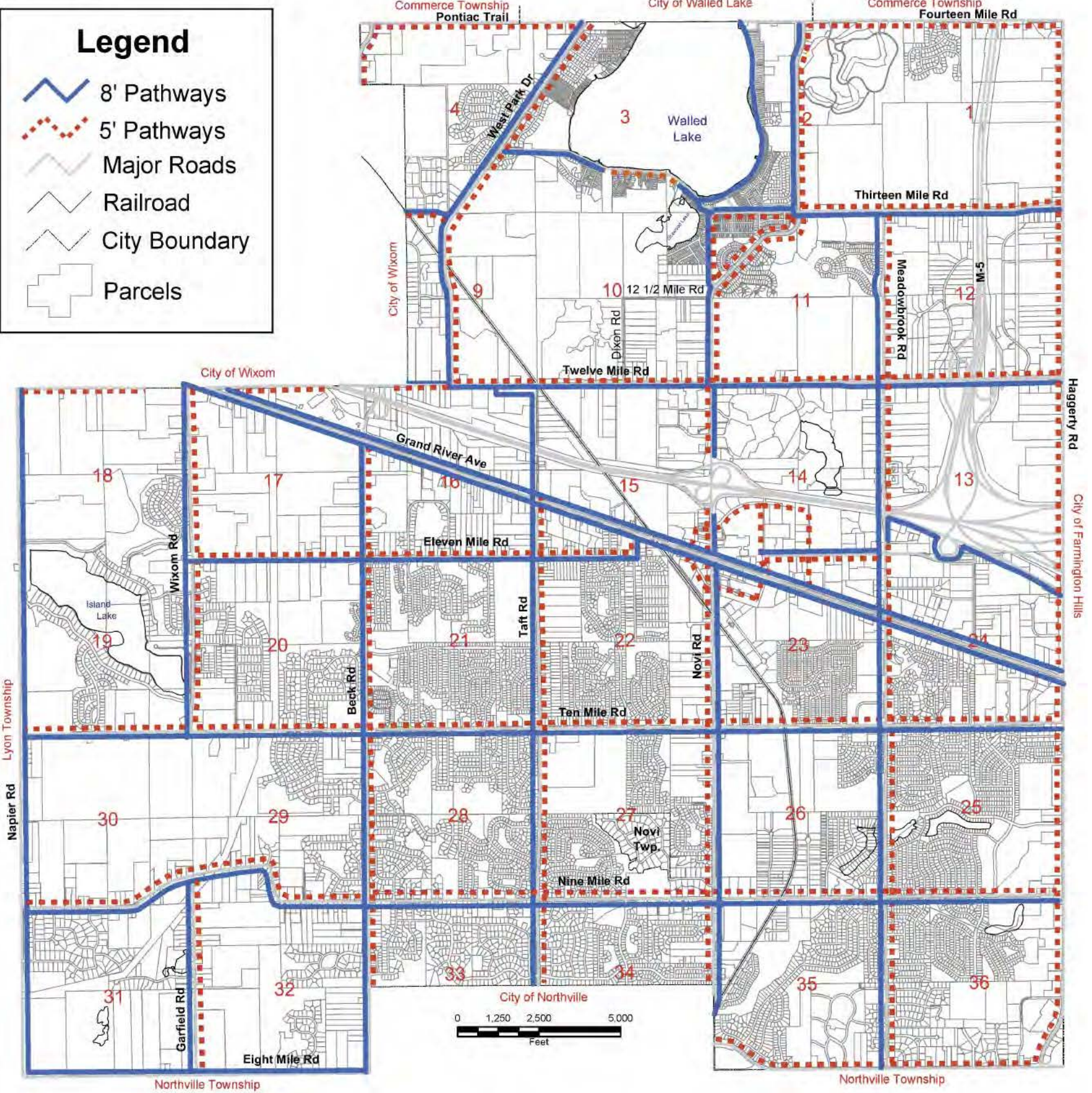
# Bicycle & Pedestrian Master Plan

City of Novi, Michigan  
March 25, 2004



## Legend

- 8' Pathways
- 5' Pathways
- Major Roads
- Railroad
- City Boundary
- Parcels



Created using the (GIS)  
Geographic Information System  
of the City of Novi  
45175 W. Ten Mile Road  
Novi, Michigan 48375

Created by:  
Bill Berdelman  
GIS Technician  
Department of GIS/  
Environmental Services

Date Initially Created:  
March 15, 1999  
Date of Last Revision:  
September 25, 2003  
Project Filename:  
P:\Proj2004\Bike\_Master.mxd  
Map Name: Bike\_Master

Copyright 2004, City of Novi, Michigan

No Part of this product shall be reproduced  
or transmitted in any form or by any means,  
electronic or mechanical, for any purpose  
without prior written permission from the  
City of Novi

This map complies with the National  
Map Accuracy standards. The City  
of Novi and its Department of GIS/  
Environmental Services assume no  
legal responsibility for the content  
and/or inappropriate use of this  
document.

Figure 55. Bicycle & Pedestrian Master Plan.



# Community Plans and Projections

## Thoroughfare Plan

- ❑ Additional driveways may be provided when it is demonstrated that one driveway cannot safely and efficiently handle the volume of traffic anticipated by the proposed development.

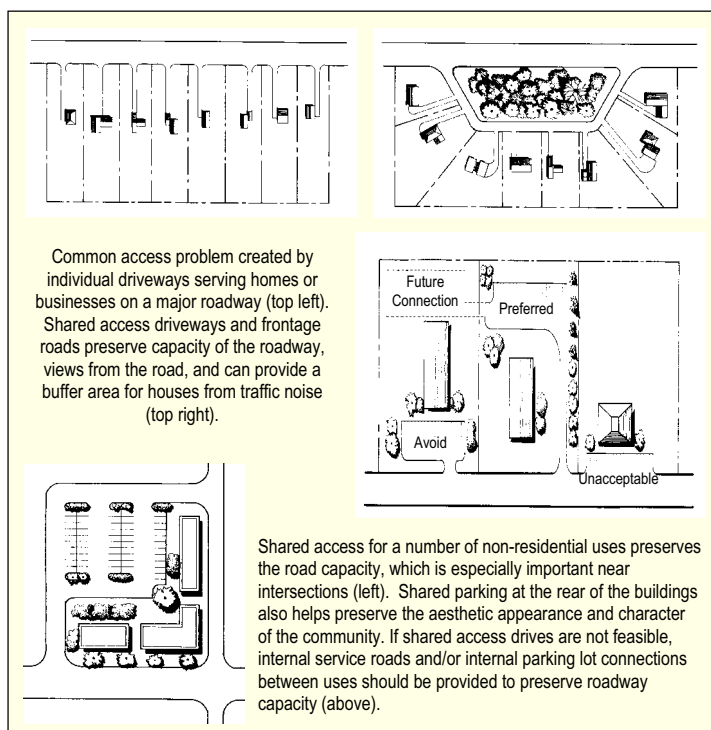
### Driveway Spacing / Placement

One of the primary access management techniques is driveway spacing and placement. Driveways located too close together are safety hazards and they can negatively impact capacity.

The City's Design and Construction Standards Ordinance contains the recommended spacing of driveways based on roadway speed. These standards are implemented through the site plan and plat review process.

### Alternative Access

As noted above, a reduction in the number of driveways provides many benefits to the community and property owners. This reduction can be accomplished by limiting each development to one driveway, where feasible. But there are other alternatives that can provide even greater benefits by having more than one development share one access point.



**Figure 56.** Shared access drives.

### **Shared Access**

Providing shared access to a site reduces the number of access points, preserves the capacity of the road, and can even help to maintain the character of the community. Shared access can be achieved through a variety of techniques including shared driveways, frontage roads, and internal connections between sites. As discussed on page 99, access management is critical for non-residential land uses because of their intensive nature and tendency to demand a higher number of access points. The following graphics illustrate ways in which residential and non-residential uses can utilize access management techniques.

### **Service Roads**

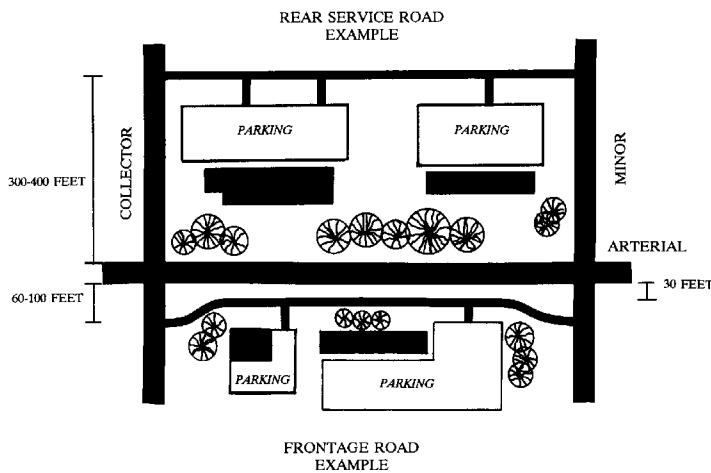
Rear service roads provide common access to several properties from the rear of the parcels. The road is constructed parallel to the public road right-of-way, and it is typically constructed by property owners.



### Frontage Roads

A frontage road is located parallel to the public street right-of-way, and is located between the right-of-way and the front building setback (fig. 57). This type of road crosses several properties but only has one or two access points (typically). In the case of a major frontage road system, it may run for one mile or more, providing an access point to the thoroughfare every 1/8 to 1/4 mile.

This type of roadway is often implemented in underdeveloped areas prior to the on-set of new development because of the separate parallel right-of-way necessary. There must be ample setbacks in place to install this type of system.



**Figure 57.** Frontage Roads

### Deceleration/Acceleration Tapers and Lanes

When right turns into a driveway are numerous, it can cause significant disruption to through traffic. Providing a deceleration taper or taper and turn lane combination can improve the time it takes a right turning vehicle to exit the through traffic stream, thereby improving road capacity and reducing delay.

The City of Novi and the Road Commission for Oakland County have established warrants for determining when a taper or taper/lane combination is necessary. The warrants are based on mining volume and total volume on the main road. When two (2) or more lanes are provided in each direction, the outside lane serves as a deceleration lane. In this instance, right turn tapers and lanes are only installed for high volume driveways such as those serving large shopping centers.

### Internal Site Design

Regardless of the types of limitations placed on driveway design, spacing and location, congestion





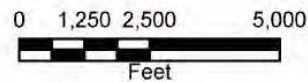
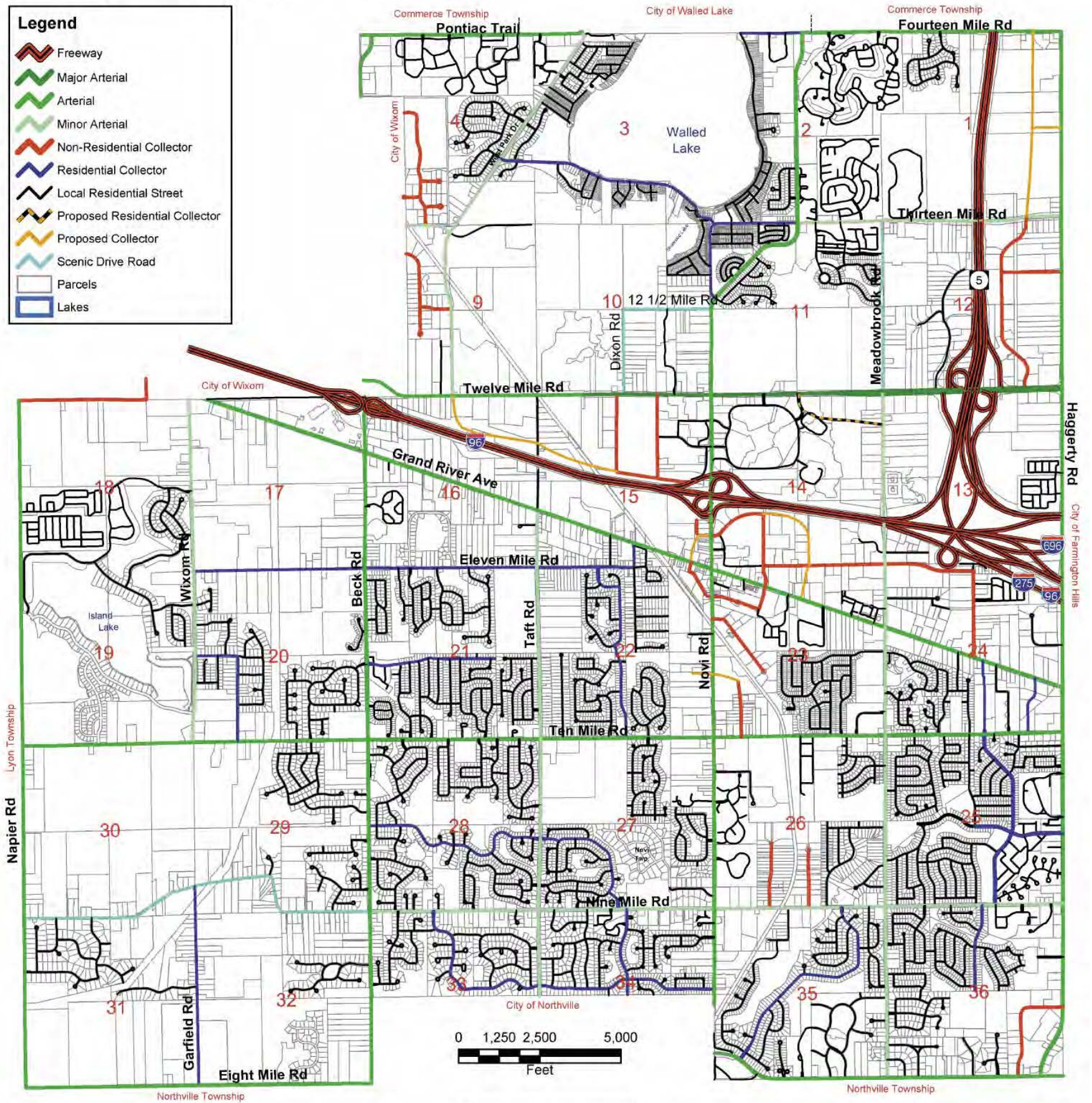
# Thoroughfare Classification

City of Novi, Michigan  
January 23, 2004



**Legend**

- Freeway
- Major Arterial
- Arterial
- Minor Arterial
- Non-Residential Collector
- Residential Collector
- Local Residential Street
- Proposed Residential Collector
- Proposed Collector
- Scenic Drive Road
- Parcels
- Lakes



Created using the (GIS) Geographic Information System of the City of Novi  
45175 W. Ten Mile Road  
Novi, Michigan 48375

Created by:  
Bill Berdelman  
GIS Technician  
Department of GIS/  
Environmental Services

Date Initially Created:  
February 28, 2001  
Date of Last Revision:  
January 23, 2004  
Project Filename:  
P:\Proj2003\Thoroughfare.mxd  
Map Name: Thoroughfare

Copyright 2004, City of Novi, Michigan

No Part of this product shall be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose without prior written permission from the City of Novi

This map complies with the National Map Accuracy standards. The City of Novi and its Department of GIS/ Environmental Services assume no legal responsibility for the content and/or inappropriate use of this document.

Figure 58. Thoroughfare Classification.



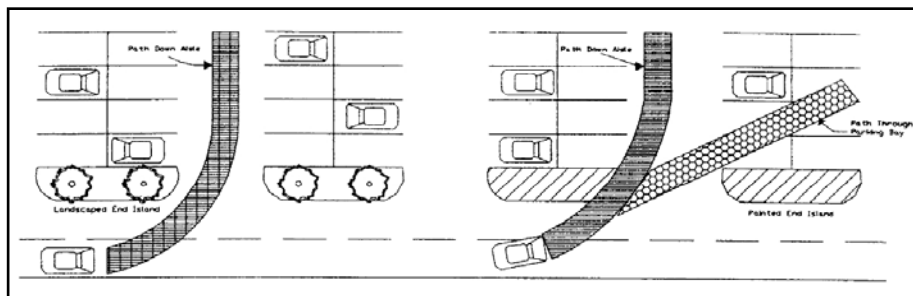
# Community Plans and Projections

## Thoroughfare Plan

and safety concerns can still be caused by poor internal circulation. Parking lot and internal driveway layouts must be coordinated with the access points to the public right-of-way to ensure a smooth transition from the public road to the “private road network.” The review of site plans should treat each development as an internal road network, with parking bays feeding into higher volume internal drives, which in turn feed into the road network. Some of the key review issues should include the following:

- Internal turning radii and driveway width should be reviewed using the same concepts applied to main driveways.
- Smooth internal circulation requires a design conducive to passenger cars and delivery/service vehicles. If semi-trucks will serve the site, the internal truck route must be specially designed with a larger turning radii.
- Sight distance at internal intersections is as important as at intersections with public streets. End-islands and proper landscaping can improve sight distance.
- Properly designed end islands can permit smooth internal traffic flow.

As illustrated in Figure 59, raised concrete end islands also discourage dangerous cross-traffic maneuvers by defining the perimeter drive.



**Figure 59.** Cross access maneuvers.

## **CONCLUSION**

The Thoroughfare Plan is designed to provide for a road network that addresses both the need for mobility and access to property. The functional classification system is the foundation upon which the road network is designed. The Future Volumes map and Future Lanes map provide guidance for road planning, and they provide residents, business owners, and developers with a snapshot of the city’s future road network. The access management section includes a number of techniques that can be used to maximize the road network’s capacity, by reducing the impact of development abutting the major road network. As with any plan, periodic re-evaluation is important to keep the concepts and goals up-to-date.



# 2030 Regional Transportation Plan for Southeast Michigan Project List

November 2004



excerpt from: "2030  
Regional Transportation  
Plan for Southeast  
Michigan Project List",  
SEMCOG, 2004

# Understanding the 2030 RTP Project List

The 2030 Regional Transportation Plan for Southeast Michigan (RTP) is the “blueprint” for transportation planning in the Southeast Michigan region. A key component of the RTP is a compilation of transportation improvement projects proposed for implementation through FY 2030. This project list is a companion document to the 2030 RTP. The list is ordered by county, time period, and project name. For example, projects in Livingston County are grouped together and contain the following information:

- RTP ID used for SEMCOG project management;
- County where the project is located (regardless of the agency responsible for maintaining the facility or funding the project);
- Project Name, generally consisting of a road name or transit activity;
- Project Limits, generally consisting of cross streets or service area;
- Length of the project in miles, if applicable;
- Proposed Work to be completed;
- Jurisdiction, which is the agency responsible for maintaining the facility;
- Time Code in which the proposed work will begin (noting that, in some cases, the project may span more than one time code);
- Funding Submitter/Source, where the funding submitter is the agency proposing the project for inclusion in the list and providing the project details (regardless of the agency responsible for maintaining the facility or funding the project), and the source is the federal, state, or local revenue category; and
- Cost by time code, funding submitter, and funding source, in thousands of dollars.

These and other terms found in the project list are defined in greater detail starting on the following page.

Figure 1 illustrates mappable projects by type (i.e., projects with sufficient geographic data for mapping, such as facility name and limits).

All projects are also available for review online at [www.semco.org/TranPlan/RTP](http://www.semco.org/TranPlan/RTP). The online project review program contains various search and sort options, additional project details, and an electronic public comment tool.

The RTP is a dynamic document. The transportation projects outlined in time codes 1 and 2 (FY 2005-2010) are considered relatively firm commitments by the implementing agencies, meaning they will likely be completed unless unforeseen circumstances arise. Projects in time codes 3 through 6 (FY 2011-2030) represent priorities for the future based on anticipated needs, land uses, and development conditions and forecasts of available revenues. That said, the priorities of the many agencies involved in regional transportation planning can change in response to new

conditions. The RTP must be flexible enough to permit periodic amendments to the project list, thereby avoiding delay of federal highway and transit funding to the region. Amendments to the RTP are subject to the same evaluations and requirements as the original RTP, must be approved by the full SEMCOG committee structure, and are submitted for applicable state and federal review. Once a project is in an approved or amended RTP, it is eligible for inclusion in the Transportation Improvement Program (TIP) and receipt of federal funding.

### **Time code**

The following time codes are used to identify the likely time frame for project implementation, although it should be noted this does not represent a commitment to fund or implement a project in any particular year.

- 1 — FY 2005
- 2 — FY 2006-2010
- 3 — FY 2011-2015
- 4 — FY 2016-2020
- 5 — FY 2021-2025
- 6 — FY 2026-2030

### **Funding submitters**

The following funding submitters are responsible for proposing projects for inclusion in the 2030 RTP and for submitting the project details, although it should be noted these do not necessarily represent the agencies of legal jurisdiction or funding responsibility.

- 1 — Livingston County Road Commission, including Livingston Essential Transportation Services
- 2 — Road Commission of Macomb County
- 3 — Monroe County Road Commission
- 4 — Road Commission for Oakland County
- 5 — St. Clair County Transportation Study, including Blue Water Area Transit
- 6 — Washtenaw Area Transportation Study, including Ann Arbor Transportation Authority



7 — Wayne County Department of Public Services

8 — City of Detroit Department of Public Works, including Detroit Department of Transportation and Detroit Transportation Corporation

9 — Suburban Mobility Authority for Regional Transportation, including Lake Erie Transit

10 — Michigan Department of Transportation

11 — SEMCOG

### **Funding sources**

The following funding sources are identified in the 2030 RTP Project List, although it should be noted these are estimates of total funding and likely funding sources and may change as projects are further defined for implementation.

5307 (Section 5307) — Federal transit funds for urban transit agencies used for capital investment in buses, new equipment, maintenance and passenger facilities, fixed-guideway systems, and preventive maintenance.

5309 (Section 5309) — Federal transit funds used for buses for fleet expansion or replacement, ancillary equipment, and bus facilities.

5310 (Section 5310) — Federal transit funds to meet the transportation needs of the elderly or persons with disabilities where traditional service is unavailable, insufficient, or inappropriate to meet those needs.

5311 (Section 5311) — Federal transit funds for capital and operating expenses and administrative assistance for areas with less than 50,000 population.

BOND (State Bond) — State bond funds used by the Michigan Department of Transportation.

BRRP (Highway Bridge Rehabilitation and Replacement Program) — Federal funds used for replacement or rehabilitation of bridges on public roads.

CMAQ (Congestion Mitigation Air Quality Program) — Federal funds designed to improve air quality through signal improvements, intersection improvements, travel demand management programs that improve traffic flow, and transit and nonmotorized projects that provide alternatives to automobile travel.

CTF (Comprehensive Transportation Fund) — State funds for transit-related projects generated through fuel tax revenues.

DDA (Downtown Development Authority) — Funds raised by districts established under state law in downtown areas to finance improvements to those areas.

DEMO (Demonstration Funds) — Federal funds for Congressionally earmarked projects under the Intermodal Surface Transportation Efficiency Act.

EDF (Transportation Economic Development Fund) — State program funding transportation projects necessary to support economic growth and improve quality of life. The program is divided into a number of categories as defined below.

- EDFA (Transportation Economic Development Fund - Category A) — Funds for infrastructure improvements related to specific economic development and redevelopment activities.
- EDFC (Transportation Economic Development Fund - Category C) — Funds for infrastructure improvements to reduce traffic congestion in urban counties (Macomb, Oakland, and Wayne Counties in the Southeast Michigan region).
- EDFD (Transportation Economic Development Fund - Category D) — Funds for infrastructure improvements to create an all-season road network in rural counties (Livingston, Monroe, St. Clair, and Washtenaw Counties in the Southeast Michigan region).

FAA (Federal Aviation Administration) — Federal funds provided by the federal agency responsible for oversight of the nation's air transportation system.

GF (General Fund) — Funds provided by local jurisdictions from their own budgets, as opposed to federal, state, millage, special assessment, or bond funding.

HPP (High Priority Projects) — Federal funds for Congressionally earmarked projects under the Transportation Equity Act for the 21<sup>st</sup> Century.

IM (Interstate Maintenance) — Federal funds for the maintenance of the interstate system. In Michigan, this money is used by the Michigan Department of Transportation and is not suballocated to county road commissions, cities, or villages.

LBND (Local Bond) — Funds raised through the sale of bonds by a local government.

MG (Minimum Guarantee) — Federal funds available as a result of adjustments made to the core federal apportionment programs to ensure each state's share of apportionments in federal programs is at least 90.5 percent of its contributions to the Highway Trust Fund.

MILL (Millage) — Funds raised through an assessment on real property.

MTF (Michigan Transportation Fund) — State funds generated primarily through state fuel tax receipts and vehicle registration fees. The MTF was established by Public Act 51 of 1951 and is the principle state funding source for transportation projects. Funding is divided between the state, county road commissions, cities, and villages based upon a series of formulas.

NHS (National Highway System) — Federal funds for projects on the National Highway System (a network of the most important highways in the United States, including the entire interstate system, a large percentage of principal arterials, the defense strategic highway network, and strategic highway connectors). In Michigan, NHS funding is used exclusively by the Michigan Department of Transportation.

OTHF (Other Federal Funds) — Federal government or agency funds not otherwise specified.

OTHL (Other Local Funds) — Local government or agency funds not otherwise specified.

OTHS (Other State Funds) — State government or agency funds not otherwise specified.

PRIV (Private Funds) — Funding from private sources (such as corporations) or donations.

SA (Special Assessment) — Funds for a project raised through charges against real property in the area that will benefit from that project. Special assessments are not based upon the value of the property being charged.

STP (Surface Transportation Program) — Main federal funding program for highway infrastructure under the Transportation Equity Act for the 21<sup>st</sup> Century. The program is divided into a number of categories as defined below.

- STPC (Surface Transportation Program - Small City) — Federal funds for eligible roadways in Census-designated “urban clusters.” Currently, Southeast Michigan’s urban clusters are the Village of Holly in Oakland County, the City of Richmond in Macomb and St. Clair Counties, and the City of Milan in Monroe and Washtenaw Counties.
- STPE (Surface Transportation Program - Enhancement) — Federal funds for landscaping, beautification, and nonmotorized improvements. Federal law requires each state to set aside ten percent of total STP funding for enhancement projects.
- STPF (Surface Transportation Program - Flexible) — Federal funds “flexed” from one purpose to another as allowed by federal law. In Michigan, all “flexed” money is used by the Michigan Department of Transportation.
- STPR (Surface Transportation Program - Rural) — Federal funds for eligible roadways in rural areas (i.e., anywhere outside the Federal-aid Urban Boundary). STPR funding can also be used for rural transit.
- STPS (Surface Transportation Program - Safety) — Federal funds for items such as turn lanes, signal improvements, lane markings, guardrails, and railroad grade crossings that enhance motorist and pedestrian safety. Federal law requires each state to set aside ten percent of total STP funding for safety projects.
- STPU (Surface Transportation Program-Urban) — Federal funds used for a comprehensive list of improvements to eligible roadways. STPU is the largest single federal transportation funding category received by the Southeast Michigan region and can be used in rural areas, but not vice versa.

UOFM (University of Michigan) — State funds for road and transit projects in the vicinity of university facilities.

RTP ID	County	Project Name	Project Limits	Length (miles)	Proposed Work	Jurisdiction	Time Code	Funding Submitter/ Source	Cost (\$1,000s)
2752	Oakland	Various Capital Expenses	Countywide	0.0	Capital Expenses for County	RCOC	3	4/ MTF	77,478
2759	Oakland	Various Gravel Roads	Countywide	0.0	Pave Gravel Roads	RCOC	3	4/ STPU 3 4/ MTF	5,000 1,250
2767	Oakland	Various Operating Expenses	Countywide	0.0	Operating Expenses for Cities and Villages	Various Agencies	3	4/ MTF	138,624
2763	Oakland	Various Operating Expenses	Countywide	0.0	Operating Expenses for Cities, Villages and County	Various Agencies	3	4/ OTHL	78,000
2771	Oakland	Various Operating Expenses	Countywide	0.0	Operating Expenses for County	RCOC	3	4/ MTF	204,767
2774	Oakland	Various Roads	Countywide	0.0	Congestion Mitigation/Air Quality Projects	Various Agencies	3	4/ CMAQ 3 4/ MTF	8,913 2,228
2778	Oakland	Various Roads	Countywide	0.0	Improve Safety	Various Agencies	3	4/ STPS 3 4/ MTF	851 213
2781	Oakland	Various Roads	Countywide	0.0	Resurface, Reconstruct or Rehabilitate	Various Agencies	3	4/ STPU 3 4/ MTF	15,000 3,750
2783	Oakland	Various Roads	Countywide	0.0	Transportation Enhancements	Various Agencies	3	4/ STPE 3 4/ MTF	13,049 3,262
2785	Oakland	Various Rural Roads	Countywide	0.0	Resurface, Reconstruct or Rehabilitate	Various Agencies	3	4/ STPR 3 4/ MTF	1,882 470
2786	Oakland	Various Rural Roads	Countywide	0.0	Resurface, Reconstruct or Rehabilitate (Rural Transfer)	RCOC	3	4/ STPU 3 4/ MTF	2,500 625
1152	Oakland	Walton Boulevard	Opdyke to Squirrel	1.3	Widen from 2 to 5 Lanes	RCOC	3	4/ STPU 3 4/ MTF	4,800 1,200
4309	Oakland	Williams Lake Road	Cooley Lake to M-59	3.2	Study Widening from 2 to 5 Lanes	RCOC	3	4/ STPU 3 4/ MTF	960 240
1157	Oakland	Williams Lake Road	Gale to Maceday Lake	0.7	Widen from 2 to 5 Lanes	RCOC	3	4/ EDFC 3 4/ MTF	3,052 763
1178	Oakland	12 Mile Road	Beck to Dixon	1.4	Widen from 2 Lanes to 4 Lane Boulevard	RCOC	4	4/ EDFC 4 4/ MTF	12,000 3,000
4305	Oakland	Adams Road	Auburn to Avon	2.9	Study Widening from 2 to 5 Lanes	RCOC	4	4/ STPU 4 4/ MTF	480 120
1167	Oakland	Beck Road	I-96 to Pontiac Trail	2.1	Widen from 2 to 5 Lanes	Wixom	4	4/ STPU 4 4/ MTF	10,640 2,660
1170	Oakland	Benstein Road	Commerce to Cooley Lake	1.1	Construct New 2 Lane Road	RCOC	4	4/ STPU 4 4/ MTF	7,420 1,855
1171	Oakland	Benstein Road	Pontiac Trail to Maple	0.6	Construct New 2 Lane Road	RCOC	4	4/ STPU 4 4/ MTF	4,500 1,125

RTP ID	County	Project Name	Project Limits	Length (miles)	Proposed Work	Jurisdiction	Time Code	Funding Submitter/ Source	Cost (\$1,000s)
1976	Wayne	Various Major Streets	City of Detroit	0.0	Resurface (117 Miles)	Detroit	4	8/ MTF	37,757
4028	Wayne	Various Operating Expenses	City of Detroit	0.0	Operating Expenses	Detroit	4	8/ MTF	137,288
4010	Wayne	Various Operating Expenses	Countywide	0.0	Operating Expenses	Various Agencies	4	7/ OTHL	263,470
							4	7/ MTF	551,126
1595	Wayne	Various Roads	City of Detroit	0.0	Improve Lane Markings	Detroit	4	8/ STPU	1,086
							4	8/ MTF	272
1890	Wayne	Various Roads	Countywide	0.0	Congestion Mitigation Strategies	Wayne DPS	4	7/ CMAQ	8,299
							4	7/ MTF	2,075
1902	Wayne	Various Roads	Countywide	0.0	Improve Safety	Wayne DPS	4	7/ STPS	734
							4	7/ MTF	184
4004	Wayne	Various Roads	Countywide	0.0	Improve Traffic Operations	Wayne DPS	4	7/ EDFC	819
							4	7/ MTF	205
1879	Wayne	Various Roads	Countywide	0.0	Transportation Enhancements	Wayne DPS	4	7/ STPE	7,658
							4	7/ MTF	1,915
1870	Wayne	Various Rural Roads	Countywide	0.0	Resurface, Reconstruct or Rehabilitate	Wayne DPS	4	7/ STPR	672
							4	7/ MTF	168
1872	Wayne	Various Rural Roads	Countywide	0.0	Resurface, Reconstruct or Rehabilitate	Wayne DPS	4	7/ MTF	148
							5	7/ STPR	651
1589	Wayne	Vista	Over Canoe	0.0	Reconstruct Bridge	Detroit	4	8/ BRRP	300
							4	8/ MTF	111
1922	Wayne	West Road	Telegraph to Hall	1.0	Widen from 3 to 5 Lanes	Wayne DPS	4	7/ STPU	1,643
							4	7/ EDFC	1,637
							4	7/ MTF	820
1721	Wayne	Woodside	Over Canoe	0.0	Reconstruct Bridge	Detroit	4	8/ BRRP	300
							4	8/ MTF	105
1938	Wayne	Beck Road	6 Mile to 7 Mile	1.0	Widen from 2 to 5 Lanes	Wayne DPS	5	7/ STPU	1,901
							5	7/ EDFC	1,379
							5	7/ MTF	820
1941	Wayne	Beck Road	7 Mile to Base Line	0.9	Widen from 2 to 5 Lanes	Wayne DPS	5	7/ STPU	1,901
							5	7/ EDFC	1,379
							5	7/ MTF	820
1942	Wayne	Belleville Road	Tyler to Ecorse	1.0	Widen from 2 to 5 Lanes	Wayne DPS	5	7/ STPU	1,901
							5	7/ EDFC	1,379
							5	7/ MTF	821
1930	Wayne	Canton Center Road	Geddes to Palmer	1.1	Widen from 2 to 5 Lanes	Wayne DPS	5	7/ EDFC	1,379
							5	7/ STPU	2,221
							5	7/ MTF	900

**Datasets**

**Interactive Maps**

**How to**

**Docs**

Comment    Map

## Search 2030 Regional Transportation Plan (RTP) Projects

### Detailed report for RTP Project Number 1167

[Submit comment on th project](#)

**TIP ID Number :** None  
**MDOT Job Number :** None  
**County :** Oakland  
**Project Name :** Beck Road  
**Project Limits :** I-96 to Pontiac Trail  
**Proposed Work :** Widen from 2 to 5 Lanes  
**Project Type :** Capacity Improvement - 21  
**Project Deficiency :**
 Bridge
  Congestion
  Nonmotorized  
 Pavement
  Safety
  Transit  
 Other  
**Length :** 2.12 miles  
**Urban Area :** Detroit  
**Jurisdiction :** Wixom  
**Community :** Novi, Wixom  
**Submitter :** Oakland County Federal Aid Committee - 4  
**Public Involvement :** August 27, 2003 RTP Public Hearing  
**Justification :** Road is congested  
**Approval Status :** Approved  
**PR Number :** 662105  
**From Mile Point :** 0.000  
**To Mile Point :** 2.126

Time Code	Phase		Federal Funds (in \$1,000s)		Non-Federal Funds (in \$1,000s)
2016-2020	Construction	STPU	8,400	MTF	2,100
2016-2020	Preliminary Engineering	STPU	840	MTF	210
2016-2020	Right of Way	STPU	1,400	MTF	350
<b>Totals (in \$1,000s)</b>			<b>\$ 10,640</b>		<b>\$ 2,660</b>
			<b>(80.0%)</b>		<b>(20.0%)</b>

[Questions or comments? E-mail us.](#) | [Terms of Use](#) | [Privacy Policy](#)

Copyright © 2006 Southeast Michigan Council of Governments.

**Datasets**

**Interactive Maps**

**How to**

**Docs**

Comment    Map

## Search 2030 Regional Transportation Plan (RTP) Projects

### Detailed report for RTP Project Number 1938

[Submit comment on th project](#)

**TIP ID Number :** None  
**MDOT Job Number :** None  
**County :** Wayne  
**Project Name :** Beck Road  
**Project Limits :** 6 Mile to 7 Mile  
**Proposed Work :** Widen from 2 to 5 Lanes  
**Project Type :** Capacity Improvement - 21  
**Project Deficiency :**
 Bridge
  Congestion
  Nonmotorized  
 Pavement
  Safety
  Transit  
 Other  
**Length :** 1.00 miles  
**Urban Area :** Detroit  
**Jurisdiction :** Wayne DPS  
**Community :** Northville Twp  
**Submitter :** Wayne County Federal Aid Committee - 7  
**Public Involvement :** Approved by Wayne FAC on 12/10/03 and posted to county Website at www.waynecounty.com  
**Justification :** Congestion and pavement condition  
**Approval Status :** Approved  
**PR Number :** 1595603  
**From Mile Point :** 9.760  
**To Mile Point :** 10.764

Time Code	Phase	Federal Funds (in \$1,000s)		Non-Federal Funds (in \$1,000s)	
		EDFC	STPU	MTF	
2021-2025	Construction	1,379	1,901	820	
<b>Totals (in \$1,000s)</b>		<b>\$ 3,280</b>	<b>\$ 3,280</b>	<b>\$ 820</b>	<b>\$ 820</b>
		<b>(80.0%)</b>		<b>(20.0%)</b>	

[Questions or comments? E-mail us.](#) | [Terms of Use](#) | [Privacy Policy](#)

Copyright © 2006 Southeast Michigan Council of Governments.

Source: search of <http://webdev2.semco.org/cgi-bin/data/att-rtp.cfm>

**Datasets**

**Interactive Maps**

**How to**

**Docs**

Comment    Map

## Search 2030 Regional Transportation Plan (RTP) Projects

### Detailed report for RTP Project Number 1941

[Submit comment on th project](#)

**TIP ID Number :** None  
**MDOT Job Number :** None  
**County :** Wayne  
**Project Name :** Beck Road  
**Project Limits :** 7 Mile to Base Line  
**Proposed Work :** Widen from 2 to 5 Lanes  
**Project Type :** Capacity Improvement - 21  
**Project Deficiency :**
 Bridge
  Congestion
  Nonmotorized  
 Pavement
  Safety
  Transit  
 Other  
**Length :** 0.91 miles  
**Urban Area :** Detroit  
**Jurisdiction :** Wayne DPS  
**Community :** Northville Twp  
**Submitter :** Wayne County Federal Aid Committee - 7  
**Public Involvement :** Approved by Wayne FAC on 12/10/03 and posted to county Website at www.waynecounty.com  
**Justification :** Congestion and pavement condition  
**Approval Status :** Approved  
**PR Number :** 1595603  
**From Mile Point :** 10.764  
**To Mile Point :** 11.682

Time Code	Phase	Federal Funds (in \$1,000s)		Non-Federal Funds (in \$1,000s)	
		EDFC	STPU	MTF	
2021-2025	Construction	1,379	1,901	820	
<b>Totals (in \$1,000s)</b>		<b>\$ 3,280</b>	<b>\$ 3,280</b>	<b>\$ 820</b>	<b>\$ 820</b>
		<b>(80.0%)</b>		<b>(20.0%)</b>	

[Questions or comments? E-mail us.](#) | [Terms of Use](#) | [Privacy Policy](#)

Copyright © 2006 Southeast Michigan Council of Governments.



# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Capacity Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Add dedicated right turn lane to SB

Date: 11/26/2006  
 Project No. G06496  
 Prepared by: DPE

### 8 Mile Intersection

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Sawcut Pavement Edge	LF	450	5.00	2,250.00
2	Remove Curb and Gutter	LF		5.00	-
3	Aggregate Base, 8"	SYD	500	10.00	5,000.00
4	Curb and Gutter	LF	350	15.00	5,250.00
5	HMA Paving (5.5" in 3 lifts)	SYD	500	20.00	10,000.00
6	Shoulder, CI II, 4 inch	SYD	100	8.00	800.00
7	Maintaining Traffic	LS	1	5,000.00	5,000.00
8	Permanent Pavement Marking and Signing	LS	1	1,500.00	1,500.00
9	Restoration	LS	1	2,500.00	2,500.00
				<b>Subtotal</b>	32,300.00
				<b>Mobilization and Contingency (20%)</b>	6,460.00
<b>Total Unit Price items estimate</b>					<b>\$ 38,760</b>

+ Design Fees Estimate (8.5%) \$ 3,295  
 + Construction Observation Estimate (13%) \$ 5,039  
**= Total Estimated Roadway Cost: \$ 47,093**  
 + estimated signal replacement costs: \$ 150,000  
 \*acres @ \$85,000 / acre: 0.22 + \*Estimated ROW Costs: \$ 18,700  
**Total Estimated Project Cost \$ 215,793**

#### Notes

The replacement of the signal would be required based on the improvements shown, however as this is at the intersection with a county road, if the improvements are done at the same time the county works on Eight Mile the signal costs would be borne by the RCOC.

# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Capacity Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Extend existing NB right turn lane

Date: 11/26/2006  
 Project No. G06496  
 Prepared by: DPE

### 9 Mile Intersection

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Sawcut Pavement Edge	LF	280	5.00	1,400.00
2	Remove Curb and Gutter	LF		5.00	-
3	Aggregate Base, 8"	SYD	125	10.00	1,250.00
4	Curb and Gutter	LF	250	15.00	3,750.00
5	HMA Paving (5.5" in 3 lifts)	SYD	125	20.00	2,500.00
6	Shoulder, CI II, 4 inch	SYD	80	8.00	640.00
7	Maintaining Traffic	LS	1	3,500.00	3,500.00
8	Permanent Pavement Marking and Signing	LS	1	1,000.00	1,000.00
9	Restoration	LS	1	1,500.00	1,500.00
				<b>Subtotal</b>	15,540.00
				<b>Mobilization and Contingency (20%)</b>	3,108.00
<b>Total Unit Price items estimate</b>					<b>\$ 18,648</b>

+ Design Fees Estimate (8.5%) \$ 1,585  
 + Construction Observation Estimate (13%) \$ 2,424  
**= Total Estimated Roadway Cost: \$ 22,657**  
 + estimated signal replacement costs: \$ -  
 \*acres @ \$85,000 / acre: 0.15 + \*Estimated ROW Costs: \$ 12,750  
**Total Estimated Project Cost \$ 35,407**

#### Notes

The proposed work does not directly impact the existing signal, replacement not required for work as shown.

# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Capacity Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Add dedicated right turn lanes to NB, SB, and EB legs;  
extend WB right turn lane and EB left turn lane

Date: 11/26/2006  
 Project No. G06496  
 Prepared by: DPE

## 10 Mile Intersection

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Sawcut Pavement Edge	LF	1,300	5.00	6,500.00
2	Remove Curb and Gutter	LF	220	5.00	1,100.00
3	Aggregate Base, 8"	SYD	1,500	10.00	15,000.00
4	Curb and Gutter	LF	880	15.00	13,200.00
5	HMA Paving (5.5" in 3 lifts)	SYD	1,500	20.00	30,000.00
6	Shoulder, CI II, 4 inch	SYD	300	8.00	2,400.00
7	Maintaining Traffic	LS	1	8,500.00	8,500.00
8	Permanent Pavement Marking and Signing	LS	1	3,000.00	3,000.00
9	Restoration	LS	1	7,000.00	7,000.00
				<b>Subtotal</b>	86,700.00
				<b>Mobilization and Contingency (20%)</b>	17,340.00
<b>Total Unit Price items estimate</b>					<b>\$ 104,040</b>

+ Design Fees Estimate (8.5%) \$ 8,843

+ Construction Observation Estimate (13%) \$ 13,525

**= Total Estimated Roadway Cost: \$ 126,409**

+ estimated signal replacement costs: \$ 150,000

\*acres @ \$85,000 / acre: 1.52 + \*Estimated ROW Costs: \$ 129,200

**Total Estimated Project Cost \$ 405,609**

# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Capacity Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Add dedicated right turn lanes to EB and WB legs

Date: 11/26/2006  
 Project No. G06496  
 Prepared by: DPE

### 11 Mile Intersection

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Sawcut Pavement Edge	LF	650	5.00	3,250.00
2	Remove Curb and Gutter	LF	120	5.00	600.00
3	Aggregate Base, 8"	SYD	850	10.00	8,500.00
4	Curb and Gutter	LF	600	15.00	9,000.00
5	HMA Paving (5.5" in 3 lifts)	SYD	850	20.00	17,000.00
6	Shoulder, CI II, 4 inch	SYD	160	8.00	1,280.00
7	Maintaining Traffic	LS	1	5,000.00	5,000.00
8	Permanent Pavement Marking and Signing	LS	1	1,500.00	1,500.00
9	Restoration	LS	1	3,000.00	3,000.00
				<b>Subtotal</b>	49,130.00
				<b>Mobilization and Contingency (20%)</b>	9,826.00
<b>Total Unit Price items estimate</b>					<b>\$ 58,956</b>

+ Design Fees Estimate (8.5%) \$ 5,011

+ Construction Observation Estimate (13%) \$ 7,664

**= Total Estimated Roadway Cost: \$ 71,632**

+ estimated signal replacement costs: \$ 150,000

\*acres @ \$85,000 / acre: 0.19 + \*Estimated ROW Costs: \$ 16,150

**Total Estimated Project Cost \$ 237,782**



# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Pavement Condition Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Mill and Overlay Existing Pavement

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 9 Mile to 10 Mile

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Cold Mill Asphalt Surface	SYD	22,160	1.50	33,240.00
2	HMA Patching	TON	20	75.00	1,500.00
3	HMA Leveling, 2"	SYD	22,160	6.00	132,960.00
4	HMA Top, 1.5"	SYD	22,160	4.50	99,720.00
5	Shoulder, CI II, 4 inch	SYD	7,200	8.00	57,600.00
6	Restoration	LS	5,000	4.00	20,000.00
					-
				<b>Subtotal</b>	345,020.00
				<b>Mobilization and Contingency (20%)</b>	69,004.00
	<b>Total Unit Price items estimate</b>				<b>\$ 414,024</b>

Design Fees Estimate (8.5%) \$ 35,192  
 Construction Observation Estimate (11%) \$ 45,543  
**Total Estimated Project Cost: \$ 494,759**

# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Pavement Condition Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Repair and overlay of existing pavement

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 10 Mile to 11 Mile

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Cold Mill Asphalt Surface	SYD	19,750	1.50	29,625.00
2	HMA Patching	TON	200	75.00	15,000.00
3	HMA Leveling, 2"	SYD	19,750	6.00	118,500.00
4	HMA Top, 1.5"	SYD	19,750	4.50	88,875.00
5	Shoulder, CI II, 4 inch	SYD	6,600	8.00	52,800.00
6	Restoration	LS	5,000	4.00	20,000.00
					-
				<b>Subtotal</b>	324,800.00
				<b>Mobilization and Contingency (20%)</b>	64,960.00
	<b>Total Unit Price items estimate</b>				<b>\$ 389,760</b>

Design Fees Estimate (8.5%) \$ 33,130  
 Construction Observation Estimate (11%) \$ 42,874  
**Total Estimated Project Cost: \$ 465,763**

# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Pavement Condition Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Mill and Overlay Existing Pavement

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 11 Mile to S. of Grand River

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Cold Mill Asphalt Surface	SYD	9,680	1.50	14,520.00
2	HMA Patching	TON	20	75.00	1,500.00
3	HMA Leveling, 2"	SYD	9,680	6.00	58,080.00
4	HMA Top, 1.5"	SYD	9,680	4.50	43,560.00
5	Shoulder, CI II, 4 inch	SYD	2,800	8.00	22,400.00
6	Restoration	LS	3,000	4.00	12,000.00
					-
				<b>Subtotal</b>	152,060.00
				<b>Mobilization and Contingency (20%)</b>	30,412.00
	<b>Total Unit Price items estimate</b>				<b>\$ 182,472</b>

Design Fees Estimate (8.5%) \$ 15,510  
 Construction Observation Estimate (11%) \$ 20,072  
**Total Estimated Project Cost: \$ 218,054**





# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Pavement Condition Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Mill and Overlay Existing Pavement

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 9 Mile to 10 Mile

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Cold Mill Asphalt Surface	SYD	22,160	1.50	33,240.00
2	HMA Patching	TON	20	75.00	1,500.00
3	HMA Leveling, 2"	SYD	22,160	6.00	132,960.00
4	HMA Top, 1.5"	SYD	22,160	4.50	99,720.00
5	Shoulder, CI II, 4 inch	SYD	7,200	8.00	57,600.00
6	Restoration	LS	5,000	4.00	20,000.00
					-
				<b>Subtotal</b>	345,020.00
				<b>Mobilization and Contingency (20%)</b>	69,004.00
	<b>Total Unit Price items estimate</b>				<b>\$ 414,024</b>

Design Fees Estimate (8.5%) \$ 35,192  
 Construction Observation Estimate (11%) \$ 45,543  
**Total Estimated Project Cost: \$ 494,759**

# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Pavement Condition Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Repair and overlay of existing pavement

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 10 Mile to 11 Mile

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Cold Mill Asphalt Surface	SYD	19,750	1.50	29,625.00
2	HMA Patching	TON	200	75.00	15,000.00
3	HMA Leveling, 2"	SYD	19,750	6.00	118,500.00
4	HMA Top, 1.5"	SYD	19,750	4.50	88,875.00
5	Shoulder, CI II, 4 inch	SYD	6,600	8.00	52,800.00
6	Restoration	LS	5,000	4.00	20,000.00
					-
				<b>Subtotal</b>	<b>324,800.00</b>
				<b>Mobilization and Contingency (20%)</b>	<b>64,960.00</b>
<b>Total Unit Price items estimate</b>					<b>\$ 389,760</b>

Design Fees Estimate (8.5%) \$ 33,130  
 Construction Observation Estimate (11%) \$ 42,874  
**Total Estimated Project Cost: \$ 465,763**

# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Short Term Pavement Condition Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Mill and Overlay Existing Pavement

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 11 Mile to S. of Grand River

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Cold Mill Asphalt Surface	SYD	9,680	1.50	14,520.00
2	HMA Patching	TON	20	75.00	1,500.00
3	HMA Leveling, 2"	SYD	9,680	6.00	58,080.00
4	HMA Top, 1.5"	SYD	9,680	4.50	43,560.00
5	Shoulder, CI II, 4 inch	SYD	2,800	8.00	22,400.00
6	Restoration	LS	3,000	4.00	12,000.00
					-
				<b>Subtotal</b>	152,060.00
				<b>Mobilization and Contingency (20%)</b>	30,412.00
	<b>Total Unit Price items estimate</b>				<b>\$ 182,472</b>

Design Fees Estimate (8.5%) \$ 15,510  
 Construction Observation Estimate (11%) \$ 20,072  
**Total Estimated Project Cost: \$ 218,054**





# Construction Cost Estimate

**Fishbeck, Thompson, Carr & Huber, Inc.**

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Long Term Capacity Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Proposed 5-lane section and 4-lane boulevard

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 10 Mile to 11 Mile

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Preconstruction Audio-Visual	LS	1	3,500.00	3,500.00
2	Soil Erosion and Sedimentation Control Measures	LS	1	15,000.00	15,000.00
3	Maintaining Traffic	LS	1	14,000.00	14,000.00
4	Remove Asphalt Surface	SYD	19,750	2.00	39,500.00
5	Remove Curb and Gutter	LF	700	5.00	3,500.00
6	Subgrade Undercut and Backfill	CYD	250	25.00	6,250.00
7	Underdrain	LF	17,300	6.00	103,800.00
8	Storm Sewer, 12"	LF	2,650	25.00	66,250.00
9	Storm Sewer, 18"	LF	900	35.00	31,500.00
10	Storm Sewer, 24"	LF	600	45.00	27,000.00
11	Storm Catch Basin	EA	54	900.00	48,600.00
12	Storm Manhole	EA	29	1,200.00	34,800.00
13	Subbase (12")	SYD	25,000	15.00	375,000.00
14	Aggregate Base (8")	SYD	29,660	7.00	207,620.00
15	Concrete Curb and Gutter	LF	17,300	12.00	207,600.00
16	HMA Paving (5.5" in 3 lifts)	SYD	29,660	17.00	504,220.00
17	Driveway Approaches	SYD	600	35.00	21,000.00
18	Side Road Approaches	SYD	2,000	30.00	60,000.00
19	5' Concrete Pathway	LF	3,580	25.00	89,500.00
20	8' HMA Pathway	LF	2,210	15.00	33,150.00
21	8' Boardwalk	LF	920	300.00	276,000.00
22	Pavement Marking and Permanent Signs	LS	1	6,000.00	6,000.00
23	Restoration	LS	1	50,000.00	50,000.00
				<b>Subtotal</b>	2,223,790.00
				<b>Mobilization and Contingency (25%)</b>	555,947.50
				<b>Total Unit Price items estimate</b>	<b>\$ 2,779,737.50</b>

+ Design Fees Estimate (7.5%) \$ 208,480  
 + Construction Observation Estimate (10%) \$ 277,974  
**= Total Estimated Roadway Cost \$ 3,266,192**  
 \*acres @ \$85,000 / acre: 1.79 + \*Estimated ROW Costs: \$ 152,150  
**Total Estimated Project Cost \$ 3,418,342**

# Construction Cost Estimate

Fishbeck, Thompson, Carr & Huber, Inc.

39255 Country Club Drive, Suite B-25, Farmington Hills, MI 48331

Telephone: (248) 324-2090 FAX: (248) 324-0930

## Long Term Capacity Improvements

Project: Beck Road Corridor Scoping Study  
 Location: Beck Road  
 Work: Proposed 5-lane section

Date: 10/23/2006  
 Project No. G06496  
 Prepared by: DPE

### 11 Mile to 1050 feet S. of Grand River

Item No.	Item Description	Unit	Est. Quantity	Unit Price (\$)	Total Cost (\$)
1	Preconstruction Audio-Visual	LS	1	3,500.00	3,500.00
2	Soil Erosion and Sedimentation Control Measures	LS	1	8,000.00	8,000.00
3	Maintaining Traffic	LS	1	9,000.00	9,000.00
4	Remove Asphalt Surface	SYD	9,680	2.00	19,360.00
5	Remove Curb and Gutter	LF	350	5.00	1,750.00
6	Subgrade Undercut and Backfill	CYD	200	25.00	5,000.00
7	Underdrain	LF	4,700	6.00	28,200.00
8	Storm Sewer, 12"	LF	900	25.00	22,500.00
9	Storm Sewer, 18"	LF	600	35.00	21,000.00
10	Storm Sewer, 24"	LF	900	45.00	40,500.00
11	Storm Catch Basin	EA	20	900.00	18,000.00
12	Storm Manhole	EA	11	1,200.00	13,200.00
13	Subbase (12")	SYD	9,400	15.00	141,000.00
14	Aggregate Base (8")	SYD	15,700	7.00	109,900.00
15	Concrete Curb and Gutter	LF	4,700	12.00	56,400.00
16	HMA Paving (5.5" in 3 lifts)	SYD	15,700	17.00	266,900.00
17	Driveway Approaches	SYD	500	35.00	17,500.00
18	Side Road Approaches	SYD	1,000	30.00	30,000.00
19	5' Concrete Pathway	LF	1,050	25.00	26,250.00
20	8' HMA Pathway	LF	2,005	15.00	30,075.00
21	8' Boardwalk	LF	755	300.00	226,500.00
22	Pavement Marking and Permanent Signs	LS	1	2,500.00	2,500.00
23	Restoration	LS	1	12,000.00	12,000.00
				<b>Subtotal</b>	1,109,035.00
				<b>Mobilization and Contingency (25%)</b>	277,258.75
				<b>Total Unit Price items estimate</b>	<b>\$ 1,386,293.75</b>

+ Design Fees Estimate (7.5%) \$ 103,972  
 + Construction Observation Estimate (10%) \$ 138,629  
**= Total Estimated Roadway Cost \$ 1,628,895**  
 \*acres @ \$85,000 / acre: 2.318 + \*Estimated ROW Costs: \$ 197,030  
**Total Estimated Project Cost \$ 1,825,925**



## Annual Inflation Rate Factors

Year	Inflation Percentage				
	2%	3%	4%	5%	6%
<b>2007</b>	1.02	1.03	1.04	1.05	1.06
<b>2008</b>	1.04	1.06	1.08	1.10	1.12
<b>2009</b>	1.06	1.09	1.12	1.16	1.19
<b>2010</b>	1.08	1.13	1.17	1.22	1.26
<b>2015</b>	1.20	1.30	1.42	1.55	1.69
<b>2020</b>	1.32	1.51	1.73	1.98	2.26
<b>2030</b>	1.61	2.03	2.56	3.23	4.05

The rates shown are for whole year averages;  $FV = PV(1+r)^n$   
 Average annual U.S. inflation from 1995 - 2005 was 2.54%

### Recent actual annual inflation

YEAR	AVG.
2005	3.39%
2004	2.68%
2003	2.27%
2002	1.59%
2001	2.83%
2000	3.38%
1999	2.19%
1998	1.55%
1997	2.34%
1996	2.93%
1995	2.81%

These factors may be applied to present value estimates to approximate future value costs.

Ex. \$100,000 estimate in 2006; if assume 3% annual inflation, would need \$151,000 in 2020.

Source: [http://inflationdata.com/inflation/Inflation\\_Rate/HistoricalInflation.aspx](http://inflationdata.com/inflation/Inflation_Rate/HistoricalInflation.aspx) accessed 10/11/2006

## DESCRIPTION OF BECK ROAD WETLANDS BETWEEN GRAND RIVER AVENUE AND 8 MILE ROAD

Location	Station Locations	Wetland Type	Description	Regulatory Status	Justification of Regulatory Status
<b>Between Grand River and 11 Mile:</b>					
West side of Beck:	167+90 to 168+10	Emergent	Drainageway: reed canarygrass, cress	Regulated	Contiguous with a stream.
	174+20 to 179+10	Emergent	Marsh/wet meadow: cattails, reed canarygrass	Regulated	Part of a wetland system greater than 5 acres in size.
East side of Beck	159+20 to 161+75	Forested	Box elder, American elm	Regulated	Part of a wetland system greater than 5 acres in size.
	167+80 to 168+00	Emergent	Drainageway: cattails, reed canarygrass	Regulated	Contiguous with a stream.
	179+25 to 181+00	Emergent	Marsh: cattails, reed canarygrass	Regulated	Part of a wetland system greater than 5 acres in size.
<b>Between 11 Mile and 10 Mile:</b>					
West side of Beck:	131+40 to 135+25	Emergent	Marsh/forested: cattails, green ash	Regulated	Part of a wetland system greater than 5 acres in size.
East side of Beck:	119+10 to 123+85	Forested	Cottonwood, American elm, black willow	Regulated	Part of a wetland system greater than 5 acres in size.
	132+50 to 135+05	Forested	Willows, cattails, red maple	Regulated	Culvert connects wetland to large wetland to west.
<b>Between 10 Mile and 9 Mile:</b>					
West side of Beck:	53+35 to 57+15	Emergent	Marsh: Common reed, cattails	Regulated	Part of a wetland system greater than 5 acres in size.
	77+70 to 81+20	Forested	Silver maple, American elm, glossy buckthorn	Regulated	Part of a wetland system greater than 5 acres in size.
	83+85 to 87+15	Forested	Roadside ditch joining with forested wetland	Regulated	Part of a wetland system greater than 5 acres in size.
East side of Beck:	53+50 to 60+40	Various	Common reed, red-osier dogwood, American elm	Regulated	Part of a wetland system greater than 5 acres in size.
	71+50 to 72+90	Forested	Common reed, black willow	Regulated	Hydraulically connected to wetland west of Beck Road.
	77+50 to 78+80	Emergent	Cattails, reed canarygrass, common reed	Unknown	Same wetland as between WB-10 and WB-11.
	89+40 to 93+25	Emergent	Cattails, reed canarygrass, common reed	Unknown	Unable to determine the size or if connected to a nearby wetland.
<b>Between 9 Mile and 8 Mile:</b>					
West side of Beck:	5+70 to 10+55	Forested	Box elder, red maple, American elm	Regulated	Part of a wetland system greater than 5 acres in size.
	29+45 to 31+50	Emergent	Common reed, cattails	Regulated	Part of a wetland system greater than 5 acres in size.
	45+00 to 50+80	Forested	Silver maple, dogwood, cattails	Regulated	Regulated by Novi, not the State of Michigan.

**Notes:**

A wetlands permit, pursuant to Sections 30307 and 30311 of Act 451, and R281.922 and R281.923 of Michigan's Administrative Rules, will be required prior to any construction activities in wetland areas greater than 5 acres in size, or contiguous with a body of water. In addition, erosion and sedimentation controls must be implemented to prevent unlawful discharge of soil into the wetland areas.

The City of Novi Code of Ordinances regulates activities within wetlands that are greater than 2 acres in size. However, Section 12-171(b)(12) of the Code of Ordinances exempts "construction, maintenance, repair or improvement by a governmental entity .... of a sewer system, drainage system or water main facility." A use permit is not required from the City of Novi for these activities. However, all such work should be "conducted in compliance with state law and all City of Novi Ordinances and in such a manner as to assure that any adverse effect on the wetland will be otherwise minimized."