Infrastructure - Roads/Non-Motorized Paths

Transportation is an important element in planning for the community and the quality of life it provides the residents. This is apparent from the voter approved November 2000 Road Bond issue of $18.395 million which led to the $80 million in road improvements focused on neighborhoods, intersections, and thoroughfares. The city is committed to continuing these efforts to fulfill the transportation needs of the community. The following describes the city’s existing transportation system.

**Non-motorized Paths**

Non-motorized pathways are an integral part of the city’s transportation network. They are generally located within the street right-of-way (ROW). There are a variety of non-motorized paths throughout the city varying from 5 feet wide to 8 feet wide. Non-motorized transportation opportunities provide a valuable asset to a community and they have become increasingly more important as our society has become aware of safety, health and fitness issues. The existing sidewalk map shows that there are several small gaps that need to be constructed to provide safe links between neighborhoods, schools, parks, and commercial areas. (fig. 35)

**Road Jurisdictions**

Most roadways in the city of Novi are under the jurisdiction of either the city or the Road Commission for Oakland County (fig. 36). Exceptions include M-5 and I-96 (MDOT) and portions of Eight Mile Road (Wayne County Department of Public Services). For east-west roads, they tend to alternate every other mile between county and city jurisdiction. For north-south roads, this same pattern is found to a lesser extent, particularly in the western half of the city, where city roads are more prominent.

**Existing Levels of Service**

As part of the Thoroughfare Plan update, existing levels of service were determined on selected high volume roadways in the City for the a.m. and p.m. peak hours. Level of service (LOS) is an indicator of the level of congestion on a roadway, and it can range from LOS “A” (Unimpeded operations) to LOS “F” (extremely low speeds). LOS is determined using highway capacity software from the Transportation Research Board and the University of Florida. It is based on average through-vehicle travel speed for a road segment. Factors including other vehicles, pedestrian crossings, vehicle turning movements, and traffic signal delay will impact the average travel speed.

Most of the a.m. peak hour congestion (fig. 37) is found in the east-central part of the city, on Haggerty Road, Ten Mile Road, Novi Road, and Grand River Avenue. Haggerty Road, between Eight Mile Road and Ten Mile Road, is at LOS “F” and Novi Road, north of Grand River is at LOS “E”.
The p.m. peak hour congestion (fig. 38) follows a similar pattern. Haggerty Road, south of Ten Mile Road is at LOS "F", as is Novi Road, from Ten Mile Road to I-96. Ten Mile Road, east of Novi Road, and Grand River Avenue, east of Novi Road, are at LOS "E".

It is important to note that although there are some road segments that are congested, the results in Figures 42 and 43 reflect the two highest volume hours of the year. During the majority of a typical 24-hour day, volumes are lower and the level of service is much better.

There are many regional influences that affect levels of service. For example, congestion on Novi Road, near I-96, and Grand River, east of Novi Road, is influenced by motorists from outside of Novi visiting the many regional malls and attractions in this area. Traffic volumes on Ten Mile Road include traffic originating in Lyon Township and South Lyon that is traveling east to 1) gain access to the freeway system or 2) patronize businesses in Novi or Farmington Hills. Of course, all of the border roadways, such as Eight Mile Road and Haggerty Road, carry a variety of trips, some of which may never physically enter the City of Novi.

<table>
<thead>
<tr>
<th>Urban Street Class</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of free-flow speeds (FFS)</td>
<td>55 to 45 mph</td>
<td>45 to 35 mph</td>
<td>35 to 30 mph</td>
</tr>
<tr>
<td>Typical FFS</td>
<td>50 mph</td>
<td>45 mph</td>
<td>40 mph</td>
</tr>
<tr>
<td>LOS</td>
<td>Average Travel Speed mph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>&gt;42</td>
<td>&gt;35</td>
<td>&gt;25</td>
</tr>
<tr>
<td>B</td>
<td>&gt;34-42</td>
<td>&gt;28-35</td>
<td>&gt;19-25</td>
</tr>
<tr>
<td>C</td>
<td>&gt;27-34</td>
<td>&gt;22-28</td>
<td>&gt;13-19</td>
</tr>
<tr>
<td>D</td>
<td>&gt;21-27</td>
<td>&gt;17-22</td>
<td>&gt;9-13</td>
</tr>
<tr>
<td>E</td>
<td>&gt;16-21</td>
<td>&gt;13-17</td>
<td>&gt;7-9</td>
</tr>
<tr>
<td>F</td>
<td>&lt;16</td>
<td>&lt;13</td>
<td>&lt;7</td>
</tr>
</tbody>
</table>

Source: Highway Capacity Manual 2000, Transportation Research Board

Table 20. Level of service (LOS) is an indicator of the level of congestion on a roadway.
Existing Non-Motorized Facilities

Legend
- Bike lane
- Local sidewalk both sides
- Local sidewalk one side
- Existing arterial sidewalk
- Existing pathway
- I 275 Trail

Gaps may exist in local sidewalks. They will be completed as homes are built on the adjacent lots.

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Roadway Jurisdiction

Legend
- Private
- City-Local
- City-Major
- City-Shared
- County
- State
- Wayne County
- Northville
- Wixom

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Map Cartographer: Mark Spencer, AICP, Planner
CREATED: 4/14/10
Version 1.2

Figure 36
Figure 37. A.M. Peak Hour Congestion Map.
Segment Level of Service
PM Peak Hour

City of Novi, Michigan
April 8, 2004

Legend
Daily Traffic Volume
★ A Unimpeded Operations
★ B Reasonably Unimpeded Operations
★ C Stable Operations
★ D Variable Delay
★ E Significant Delay
★ F Extremely Slow Speeds
* None Identified in Segments Evaluated

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

Created by
Bill Bartlemann
GIS Technician
Department of GIS/Environmental Services

Date Initially Created:
April 8, 2004
Date of Last Revision:
April 8, 2004
Project File Name:
P-MH(Traffic).PDF
Map Name: PM Traffic

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Figure 3B. PM Peak Hour Congestion Map.
Infrastructure - Roads/Non-Motorized Paths

Traffic Volumes

Figure 44 shows the most recent 24-hour traffic count information available, along with the month and year the count was taken. Counts on I-96 and M-5 are from the Michigan Department of Transportation (MDOT). Most counts on county roads come from the Road Commission for Oakland County (RCOC), and most counts on city roads come from the City of Novi. Also included are counts taken by traffic consultants working on site-specific projects.

With the exception of MDOT counts, the counts shown on the map do not necessarily represent "Annual Average Daily Traffic" or AADT. AADT reflects a daily average over an entire year, while an individual count is a snapshot of a particular point in time. Traffic counts vary by day of the week and month of the year. For example, February tends to be a low traffic count month and August tends to be a high traffic count month.

Speed Limits

Figure 40 shows the posted speed limit on major roadways in the city. Streets within residential subdivisions are posted as (or have a prima facie speed limit of) 25 mph. Arterial roadways have speed limits that vary depending upon a number of factors including existing traffic speeds, road design, roadside activity, etc. Figure 41 shows the location of existing traffic signals. Most signals are maintained by the Road Commission for Oakland County. Wayne County Department of Public Services controls several signals along Eight Mile Road, between Taft Road and Haggerty Road.

Traffic Crash Analysis

Crash data was obtained from the Traffic Improvement Association for Oakland County for the three-year period from 2000-2002. (table 21) Crash statistics for intersections in Novi were evaluated three ways: total number of crashes, crash rate (per million entering vehicles) and crash severity (fatal and severe injury crashes per million entering vehicles).

Traffic Growth Rates

In order to perform effective thoroughfare planning for the future, it is important to consider the traffic growth rates in the city. Table 22 shows the growth rates for various roadway segments. These rates were computed from the Daily Traffic volumes presented in the city’s previous Thoroughfare Plan.
### Ten Worst Intersections - Crash Rankings (2000-2002)

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Rank by Crash Rate</th>
<th>Crash Rate (per million entering vehicles)</th>
<th>Rank by Total Number of Crashes</th>
<th>Rank by Severity (fatal + serious injury crashes / million entering vehicles / year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eleven Mile / Taft (a)</td>
<td>1</td>
<td>4.52</td>
<td>*(62)</td>
<td>*</td>
</tr>
<tr>
<td>Beck / Twelve Mile</td>
<td>2</td>
<td>4.44</td>
<td>*(58)</td>
<td>*</td>
</tr>
<tr>
<td>Beck / Pontiac</td>
<td>3</td>
<td>4.35</td>
<td>6 (82)</td>
<td>7</td>
</tr>
<tr>
<td>Beck / Eleven Mile</td>
<td>4</td>
<td>3.19</td>
<td>*(17)</td>
<td>*</td>
</tr>
<tr>
<td>Haggerty / Eight Mile</td>
<td>5</td>
<td>2.78</td>
<td>1 (152)</td>
<td>9T</td>
</tr>
<tr>
<td>Haggerty / Fourteen Mile</td>
<td>6</td>
<td>1.96</td>
<td>3 (107)</td>
<td>8</td>
</tr>
<tr>
<td>Grand River / Novi</td>
<td>7</td>
<td>1.85</td>
<td>2 (108)</td>
<td>*</td>
</tr>
<tr>
<td>Beck / Eight Mile</td>
<td>8</td>
<td>1.83</td>
<td>*(95)</td>
<td>*</td>
</tr>
<tr>
<td>Novi / Ten Mile</td>
<td>9</td>
<td>1.81</td>
<td>4 (95)</td>
<td>9T</td>
</tr>
<tr>
<td>Haggerty / Grand River</td>
<td>10</td>
<td>1.68</td>
<td>7 (80)</td>
<td>*</td>
</tr>
<tr>
<td>Haggerty / Twelve Mile</td>
<td>*</td>
<td>*</td>
<td>5 (84)</td>
<td>6</td>
</tr>
<tr>
<td>Novi / Twelve Mile (b)</td>
<td>*</td>
<td>*</td>
<td>8 (76)</td>
<td>*</td>
</tr>
<tr>
<td>Haggerty / Ten Mile</td>
<td>*</td>
<td>*</td>
<td>9 (72)</td>
<td>*</td>
</tr>
<tr>
<td>Haggerty / Nine Mile (c)</td>
<td>*</td>
<td>*</td>
<td>10 (66)</td>
<td>*</td>
</tr>
<tr>
<td>Ten Mile / Napier</td>
<td>*</td>
<td>*</td>
<td>*(7)</td>
<td>1</td>
</tr>
<tr>
<td>Novi / Fourteen Mile</td>
<td>*</td>
<td>*</td>
<td>*(15)</td>
<td>2</td>
</tr>
<tr>
<td>Meadowbrook / 12 Mile</td>
<td>*</td>
<td>*</td>
<td>*(15)</td>
<td>3</td>
</tr>
<tr>
<td>Haggerty / Thirteen Mile</td>
<td>*</td>
<td>*</td>
<td>*(23)</td>
<td>4</td>
</tr>
<tr>
<td>Taft / Ten Mile</td>
<td>*</td>
<td>*</td>
<td>*(34)</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Transportation Improvement Association of Oakland

* not ranked in the top ten

a. All-way stop installed in 2002
b. Boulevard extended in 2003
c. Signal improvements in late 2001

Table 21. Crash data for major thoroughfares.
Daily Traffic Volumes
City of Novi, Michigan
March 30, 2004

Legend
Daily Traffic Volume
Comparison

No Data Available
1 - 2,500
2,501 - 9,000
9,001 - 15,000
15,001 - 30,000
30,001 - 46,024
Lakes

Figure 39. Daily Traffic Volumes Map.
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Traffic Signals

Legend

Existing Signal SCATS
Existing Signal No SCATS
Future Signal (On CIP)

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Map Cartographer:
Mark Spencer, AICP, Planner
CREATED: 3/30/10
Version 1.0

Figure 41
### Infrastructure - Roads/Non-Motorized Paths

#### Annual Growth Rates For Daily Traffic

<table>
<thead>
<tr>
<th>Road Name</th>
<th>Crossroad 1</th>
<th>Crossroad 2</th>
<th>1997 Daily Traffic</th>
<th>2003 Daily Traffic</th>
<th>Equivalent Annual Rate of Change (%)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eight Mile</td>
<td>Napier</td>
<td>Wixom</td>
<td>8,554</td>
<td>13,100</td>
<td>7.4</td>
</tr>
<tr>
<td>12 Mile</td>
<td>Novi</td>
<td>Meadowbrook</td>
<td>18,000</td>
<td>23,000*</td>
<td>4.2</td>
</tr>
<tr>
<td>Novi</td>
<td>10 Mile</td>
<td>Grand River</td>
<td>24,280</td>
<td>30,000</td>
<td>3.6</td>
</tr>
<tr>
<td>Grand River</td>
<td>Novi</td>
<td>Meadowbrook</td>
<td>20,553</td>
<td>22,700</td>
<td>1.7</td>
</tr>
<tr>
<td>Haggerty</td>
<td>Ten Mile</td>
<td>Nine Mile</td>
<td>25,600</td>
<td>25,900</td>
<td>0.2</td>
</tr>
<tr>
<td>Grand River</td>
<td>Novi</td>
<td>Taft</td>
<td>16,800</td>
<td>17,400</td>
<td>0.6</td>
</tr>
<tr>
<td>12 Mile</td>
<td>M-5</td>
<td>Haggerty</td>
<td>37,200</td>
<td>28,100*</td>
<td>-4.8</td>
</tr>
<tr>
<td>Novi</td>
<td>12 Mile</td>
<td>13 Mile</td>
<td>30,910</td>
<td>14,900*</td>
<td>-11.5</td>
</tr>
<tr>
<td>Haggerty</td>
<td>12 Mile</td>
<td>13 Mile</td>
<td>33,400</td>
<td>15,100*</td>
<td>-12.4</td>
</tr>
</tbody>
</table>

* These volumes have been significantly influenced by the construction of M-5, north of Twelve Mile Road.
** This rate may not reflect a steady annual change over the study period, rather a sudden change, e.g., immediately following a road improvement.

**Table 22.** Daily traffic rates were taken between 1997 and 2003.

### Freeways

The Thoroughfare Plan shows I-96 as the principal carrier of through traffic in the City of Novi. A controlled-access state trunkline highway, known as the Haggerty Connector (M-5), is located west of Haggerty Road, between I-96 and Pontiac Trail.

The Thoroughfare Plan includes the following freeway and state trunkline improvements:

- The Beck Road/I-96 interchange is being rebuilt as a full function, single-point urban interchange. (Figure 42). (SPUI) The design will allow motorists on Beck Road and Twelve Mile Road to travel east on I-96. Many motorists in this area currently must use surface streets to reach the Novi Road/I-96 interchange if they desire to travel east on I-96. Constructing the new ramp will remove this traffic from the surface streets, thereby relieving some of the pressure on other east-west roads and on the congested Novi Road/I-96 interchange.

- As the City of Novi and the surrounding region continue to grow and volumes on I-96 increase, the need for capacity improvements to the freeway system will arise. Options include adding an additional through lane in each direction and/or providing a collector-distributor system, with a service drive on both sides of the I-96 freeway, from M-5 west to Wixom Road. The service drive system would provide capacity benefits to the main I-96 through lanes and better serve abutting regional facilities.
Major Arterial

One major arterial is included in the Thoroughfare Plan. Twelve Mile Road has been reconstructed as a boulevard section from Haggerty Road to just west of Dixon Road and this segment is designated as a major arterial. From its current terminus as a boulevard, the road cross-section is planned to transition to a five-lane road to Beck Road, with a grade separation at the railroad.

Arterials and Minor Arterials

The Thoroughfare Plan designates a number of traffic corridors as arterials and minor arterials. Many of the corridors are section line or “mile” roads that connect the city to other nearby communities. The plan is, for the most part, based on improvements to the existing network of thoroughfares. No significant new roadways are included in the Thoroughfare Plan.

Collector Roads

A system of collector streets is included in the Thoroughfare Plan. Collector roads are proposed for non-residential as well as residential areas. It is anticipated that the need for some new collector roads will be identified through the site plan or plat process.

Figure 42. Beck Road and I-96 Interchange scheduled for Fall 2005 opening.
Infrastructure - Roads/Non-Motorized Paths

Scenic Drives

Four (4) road segments have been designated as scenic drives because of their proximity to outstanding natural features. These include Meadowbrook Road, from Twelve Mile Road to Thirteen Mile Road, Nine Mile Road, from Beck Road to Napier Road, Dixon Road, north of Twelve Mile Road, and Twelve and One-Half Mile Road, west of Novi Road. Efforts should be made to preserve the natural vegetation along these roadways and minimize roadway expansion.

Figure 43. Scenic drives on Nine Mile Road and Meadowbrook Road.

Other Improvements

The Thoroughfare Plan includes six (6) bridges. All of the bridges are over the CSX Railroad tracks. The rail crossings are ranked in the following order of priority: Novi Road (programmed as part of road widening), Twelve Mile Road, Ten Mile Road, and Nine Mile Road. West Park Drive and Grand River Avenue are completed.