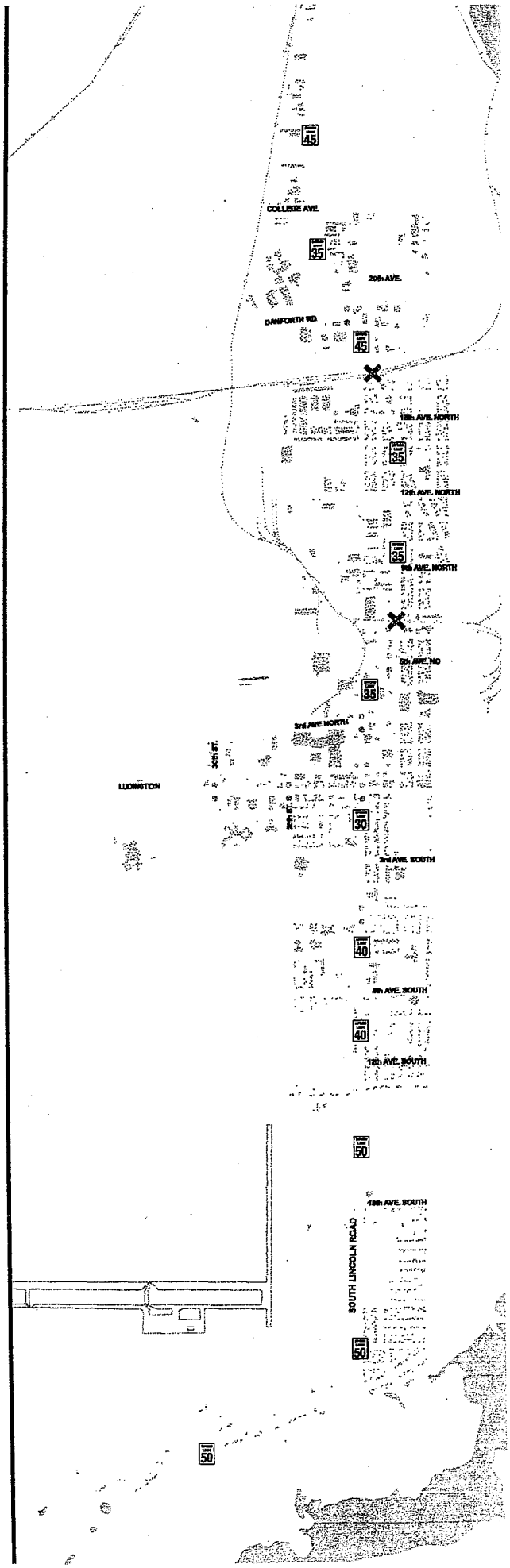
Final Draft

Lincoln Road & Ludington Street Corridor Management Plan

City of Escanaba

June 9, 2003



Prepared by:

Land Information Access Association
Traverse City

Land Information Access Association
helping communities sustain their cultural and natural resources

Planning & Zoning Center
Lansing

Beckett & Raeder
Ann Arbor

Lincoln Road & Ludington Street Corridor Management Plan

Prepared for the

Michigan Department of Transportation and The City of Escanaba

Final Draft – June 9, 2003

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Chapter I

INTRODUCTION

Overview

This study is a direct result of the ***Escanaba Comprehensive Plan***, which states at page 31, there is a need *"to undertake a detailed study within the US 2/41 corridor to identify and plan for ways to improve traffic flows, access, land use, and aesthetics of the corridor."*

This document is the text of the *Lincoln Road & Ludington Street Corridor Management Plan* (hereafter called the *Corridor Plan*). The *Corridor Plan* addresses problems and opportunities related to land use, traffic flow, traffic safety, access management, and aesthetics in parts of Escanaba, Michigan. Study Area Map 1-1 illustrates the area of primary concern for this study. This plan is accompanied by a set of display-sized maps that show in great detail alternative proposed improvements in the corridor. Small versions of these display-sized maps are included in this report. Additionally, a number of computer generated three-dimensional (3-D) models are presented with this plan to support visualization of alternative street designs.

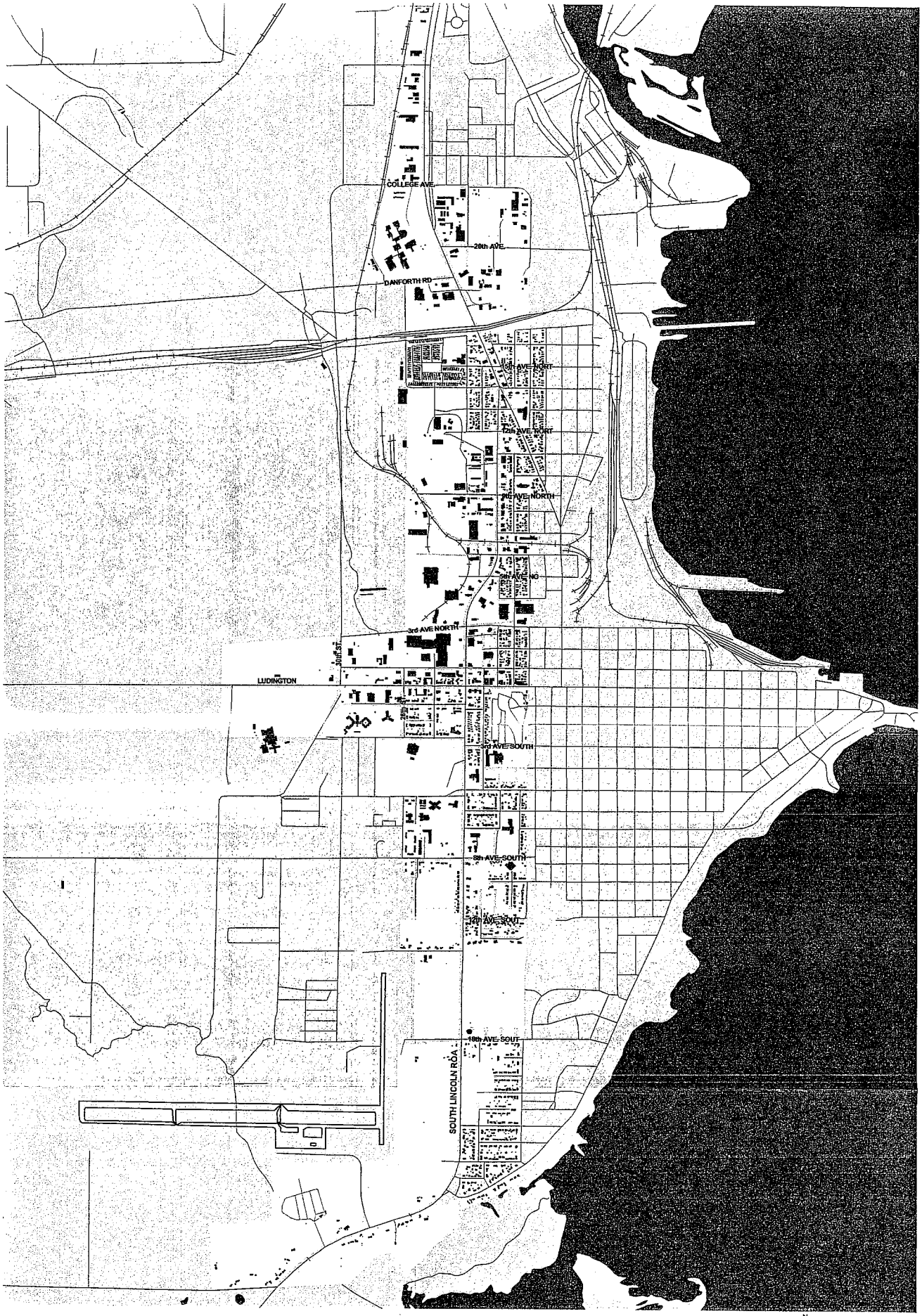
The *Corridor Plan* should be used as a guidance document in coordination with the *City of Escanaba's Comprehensive Plan* and *Zoning Ordinance*. Future land use changes and proposed transportation and access improvements in this corridor should be reviewed against the analysis and alternatives presented in this *Corridor Plan* and accompanying maps, prior to being approved or initiated.

Plan Preparation

This *Corridor Plan* was prepared by a consultant team led by the Land Information Access Association (LIAA), a nonprofit community service organization based in Traverse City. Substantial assistance was provided by the Planning & Zoning Center, Inc. in Lansing and Beckett-Raeder, Inc. in Ann Arbor. This consultant team has extensive experience and expertise in transportation planning, community planning, landscape architecture, and site design. Additionally, this plan was prepared in partnership with and with financial support from the Michigan Department of Transportation.

Plan Limitations

Many of the traffic problems on Lincoln Road and Ludington Street are related to traffic that is merely passing through Escanaba on its way to destinations north, south or west. If this traffic were not a part of the mix of local traffic, many of the existing traffic conflicts would be diminished. There has long been local talk and some prior study into a bypass around Escanaba. There is even a possible route for a northern bypass along the railroad tracks illustrated on the *Future Land Use Map* in the *Escanaba Comprehensive Plan*. However, no detailed studies have been undertaken, nor have any dollars been committed to implement such an idea--and it may be



ESCANABA CORRIDOR STUDY

STUDY AREA

0 0.5 Miles

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MAP 1-1

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decades, if ever, that such a bypass is built. In the meantime, land use and transportation improvement decisions in the corridor are being made nearly every day. Similarly, changes in the aesthetic character of the corridor continue with or without the community's consideration.

This *Corridor Plan* strongly recommends a proactive approach by the City of Escanaba and its citizens in guiding future development along the corridor and making improvements to the existing build environment. This document has been developed to fill the need for immediate guidance in making development decisions and planning corridor enhancement projects. If a bypass is ever constructed, or if five years passes, this Plan should be updated. In addition, a series of updates to the *City of Escanaba Comprehensive Plan* and the City of *Escanaba Zoning Ordinance* are necessary in order to best implement this Plan. These changes are described in Chapter IV.

Purpose and Objectives of this Plan

This *Corridor Plan* is prepared as a supplement to the *City of Escanaba Comprehensive Plan.* The overall purpose of this plan is two-fold: 1. to more clearly identify the problems and opportunities presented by the current configuration of the Lincoln Road and Ludington Street corridor; and 2. to recommend reasonable alternatives for correcting the problems and building on the opportunities presented within the corridor. To that end, the consultant team specified the following objectives for the *Corridor Plan*:

- preserve traffic capacity within the study area;
- improve safety on these state highways and connecting local streets for pedestrians, bicyclists and motorists;
- improve movement efficiency for pedestrians, bicyclists and motorists;
- substantially enhance the aesthetic appeal of the corridor for residents as well as travelers and first-time visitors to the area; and
- identify suitable new and altered land uses along the corridor.

Through this document, the consultant team provides recommendations for actions needed to achieve these objectives and fulfill the purpose of this *Corridor Plan.* The following chapters describe and specify actions needed, including:

- additions and revisions to the *City of Escanaba's Comprehensive Plan* and *Zoning Ordinance*, such as zoning changes, access management standards, and sign controls;
- driveway consolidations, parking lot connections and related access management improvements;
- traffic flow and channeling structures as well as local street connections to improve movement and safety;
- sidewalks, crosswalks, and other structures for pedestrians and bicyclists;
- landscaping, lighting, and signage improvements; and
- restructuring of a key intersection.

Organization of Corridor Plan

This *Corridor Plan* is divided into eight Chapters, including numerous maps and illustrations. The following is a brief description of each chapter.

Chapter I. Introduction and overview of the *Corridor Plan.*

Chapter II. Identification of problems and opportunities along the corridor as presented by the local officials and many residents of Escanaba.

Chapter III. Analysis of traffic volumes, crash data and existing problem areas along the corridor.

Chapter IV. Identification and analysis of land use alternatives for vacant land along the corridor and identification of *Comprehensive Plan* and *Zoning Ordinance* changes needed in order to implement this Plan.

Chapter V. A description of various access management techniques that could be used to address identified problems and opportunities.

Chapter VI. A description of various aesthetic improvements that could be implemented to improve the appearance of the corridor.

Chapter VII. Visualization of proposed restructuring of a key intersection and related aesthetic improvements using computer-generated 3-D models.

Chapter VIII. A summary of some of the key actions that need to be taken to implement this *Corridor Plan.*

Chapter II

IDENTIFICATION OF PROBLEMS & OPPORTUNITIES

Introduction

The first section of this chapter will provide a brief description of the process used to develop this *Corridor Plan*, including public meetings and site visits by the consultant team. The remainder of the chapter will summarize the problems and opportunities relating to these important transportation corridors as identified by residents, local officials and the consultant team. The consultant team focused most of its efforts and analyses on the ideas and concerns presented by local officials and residents.

Corridor Planning Process

As noted above, the development of this *Corridor Plan* was undertaken to address a need identified in the *City of Escanaba Comprehensive Plan*. Additionally, the Michigan Department of Transportation (MDOT) has noted local and regional needs to address the continued improvement of the safety and aesthetic characteristics of the Lincoln Road and Ludington Corridors as a major artery for transportation and commerce.

Funding to undertake this corridor planning process was provided by a grant of federal funds under the U.S. Transportation Equity Act for the 21st Century (TEA-21) through the MDOT. The project proposal was developed cooperatively by the City of Escanaba and the Land Information Access Association (LIAA) for submission to the MDOT. As the recipient of the project grant, LIAA engaged two highly regarded planning firms, Planning & Zoning Center and Beckett & Raeder, to support detailed analyses and assist in the development of specific recommendations.

In beginning this effort, the project's consultant team developed a detailed work plan and sensible division of labor based on experience and expertise. This work plan and Corridor Plan outline was reviewed and approved by the City of Escanaba planning staff. The consultant team worked together to identify information resources and aggregate data from several different agencies. The team then cooperated in the evaluation of existing conditions along the corridor, carefully reviewing detailed planimetric maps, aerial photography (as digital orthophotography), traffic accident reports and traffic flow data. The consultant team also completed a lengthy on-site assessment of the corridor conditions, including the collection of a detailed photographic log.

To obtain more in-depth land use planning and traffic management information, the consultant team met with appropriate staff from the City of Escanaba, Delta County, Central Upper Peninsula Planning and Development Region, and MDOT. During these meetings, we were provided additional information concerning street maintenance, recent construction along the corridor, and planned changes as well as anecdotal information concerning traffic patterns, citizen concerns, and safety concerns.

The consultant team's preliminary assessments were presented to the City of Escanaba's Planning Commission for consideration and comment. Planning Commissioners provided general information about public concerns.

To support the organization of traffic data and existing land use information, LIAA completed a large amount of geographic data entry and error correction. Using a geographic information system (GIS), LIAA compiled feature and attribute data concerning property ownership, current land use, zoning districts, planned future land use, topography, natural resources, population characteristics, and other data for evaluation. Additionally, LIAA worked to develop 3-D computer models of key areas along the corridor for comparisons of current conditions versus proposed future conditions using the modeling and planning software, CommunityViz©.

Preliminary maps, site-specific drawings, and photographic data were compiled onto large mounted display boards to support easy review. These materials were used as orientation materials at a public meeting.

Public Discussions

At the request of the consultant team, the City of Escanaba organized a public meeting to gather suggestions and recommendation for improvement to the corridor from local residents in January 2002. The meeting was publicly noticed and advertised by City planning staff. Additionally, invitations were mailed to all owners of property within approximately ½ mile of the Lincoln Road and Ludington Street corridors.

Held in the evening, the public meeting was facilitated by LIAA's staff using an interactive format, including breakout group discussions as well as large group discussions. Over 40 residents participated in this session, including 11 people representing businesses in the corridor and 17 homeowners and property owners. A number of the local public officials also attended this discussion.

Participants were asked to review maps and aerial photos of the corridor. They were encouraged to think broadly about what might improve the aesthetics, usability, and traffic flow in the corridor. The larger group was then asked to break into six (6) smaller breakout groups for detailed discussions. Each group was given maps and large flip chart paper to use in developing a list of concerns and recommendations for the corridor. Groups were instructed to begin by listing significant problems or concerns then work to identify opportunities for improvement.

After about one hour, the groups were reassembled for presentations. Each group elected a presenter who explained the topics listed. Questions and answers were encouraged. Finally, all participants were given a collection of five stick on "dots" to use in identifying what they considered the most important concerns and recommendations. A large number of concerns and recommendations received special emphasis by the participants. The results of these discussions were compiled and reviewed with the City's Planning Commission and City staff during one of the regularly scheduled meeting. The consultant team focused considerable energy discerning the most emphasized concerns.

Problems and Opportunities Identified

The public discussions and meetings with public officials, as well as the consultant team's own analyses, all pointed to the same general set of problems and opportunities. That is, there appears to be broad agreement on most issues. In general, the topics of shared concern can be grouped into three categories, as follows:

Aesthetic Improvements, including:

Excessive use of large billboards;
Inconsistent and unattractive business signs;
Insufficient and poorly managed landscaping; and
Unattractive, inconsistent and insufficient lighting.

Roadway Safety and Flow, including:

Excessive number of driveways and curb cuts;
Dangerous and difficult street access to businesses;
Excessive speeds by both trucks and cars;
Difficult left turn conditions; and
Excessive large truck traffic through City.

General Use and Access, including:

Insufficient and inconsistent sidewalks;
Difficult and dangerous pedestrian crossing; and
Unattractive and ineffective directional and street signs.

During the public discussions, a number of specific intersections were identified as problem areas. Similarly, many people noted specific locations where aesthetic improvements could be made. This *Corridor Study* incorporates these concerns and offers a number of specific recommendations on how to make these improvements.

In general, recommendations for correcting problem situations and suggested improvements were consistent. The focus of these recommendations can be traced to the concerns listed above. The following is a compilation of recommendations for change and improvement gathered at the public discussion forum.

Aesthetic Improvements

Install and maintain new landscaping (e.g., plantings, grass decorative stone);
Improve the placement, size, and character of commercial signs;
Reduce the number and/or size of billboards;
Clean up sand and dirt and cut grass and weeds along roadways and sidewalks;
Use more attractive lighting fixtures (e.g., "period" lighting);
Improve directional and street signs (e.g., larger, consistent theme);

Cleanup or remove vacant buildings; and
Improve appearance of railroad viaduct (e.g., paint, welcome sign).

Roadway Safety Improvements

Reduce speeds into and through the city (e.g., near college and high school);
Reduce driveways and curb cuts (e.g., use back access, combine driveways);
Limit or control turns (e.g., boulevard approach, turn out lanes, one-way streets);
Add traffic controls including lights and turn restrictions;
Add connections from Lincoln Road to 30th Street; and
Reduce commercial truck traffic on Lincoln Road (e.g., all trucks directed to 30th Street).

General Use and Access Improvements

Install a pedestrian bridge over Lincoln Road near Washington Street;
Add sidewalks and/or bike paths along much of Lincoln Road; and
Improve existing sidewalks.

Although the emphasis that residents and public officials place on these recommendations varies, there is fairly strong agreement on these suggestions for improving the Lincoln Road and Ludington Street corridors. Clearly, many of the changes residents seek are achievable. In fact, many of the improvements simply require a commitment to more aggressive maintenance efforts (e.g., weed control, removal of sand and dirt buildup). However, many of these changes require revisions in the City of Escanaba's Comprehensive Plan and Zoning Ordinance, the adoption of new policies, and, in some cases, specific engineering design and construction efforts. Additionally, funding will be needed to achieve many of the improvements described.

The following chapters provide a careful analysis of existing conditions along the Lincoln Road and Ludington Street corridors. Much of the information presented will be helpful in understanding the nature of the problems encountered. There are also general and specific recommendations for action along with several alternative design options for consideration.

Chapter III

CORRIDOR ANALYSIS

Introduction

Escanaba's two primary arterials, Lincoln Road and Ludington Street carry the majority of the traffic within the region. These arterials have most of the commercial development within the city but also have significant stretches with single family homes (especially on South Lincoln Road). Because of the concentration of traffic generating land uses and numerous driveways, these corridors are at times very congested and present unnecessary dangers. This chapter presents a description of each roadway, volume and crash data, an identification of traffic and access management problems, and the rationale for reducing the number of access points.

Roadway Description

The following roadway description lists the characteristics of the arterials within the study area.

Lincoln Road (north of Ludington):

- From the northern city limits to College Avenue, Lincoln Road is a divided median highway with four lanes.

- From College to 9th Avenue, Lincoln Road changes into a commercial five-lane road with signals. There are few contiguous sidewalks. The community college is a major traffic generator and is located between Danforth and College. There is a traffic signal located at Danforth Road.

- From 9th Ave to 3rd Ave, North Lincoln Road has a strip commercial character. It is a five-lane road with a center turn lane. There are few contiguous sidewalks in this area. There are large retail establishments in this area, including Wal-Mart, Kmart and the retail mall, which includes JC Penney, all on the west side of the road. There are signals at 3rd Ave and 5th Ave North.

- From 3rd Ave North to Ludington there are smaller parcels along Lincoln Road but it continues as a five-lane road lined with primarily commercial development.

Lincoln Road (South of Ludington):

- From Ludington Street south to 8th Ave, South Lincoln Road continues to be 5 lanes with a center turn lane. There are primarily commercial/institutional and residential land uses in this area. Escanaba High School is located between 3rd Ave and 5th Ave South. There are a number of churches located within this segment. There is a signal located at 5th Ave South.

- From 8th Ave South to 18th Ave South the road is four-lanes with a sidewalk. The area is primarily residential.

- From 18th Ave South to Lakeshore Drive the road continues to be four lanes with minimal development. There is a sidewalk on the west side of Lincoln Road.

- From Lakeshore Drive to the southern city limits there are no signals. It is a two-lane road with a rural landscape.

Ludington Street (West of Lincoln Road):

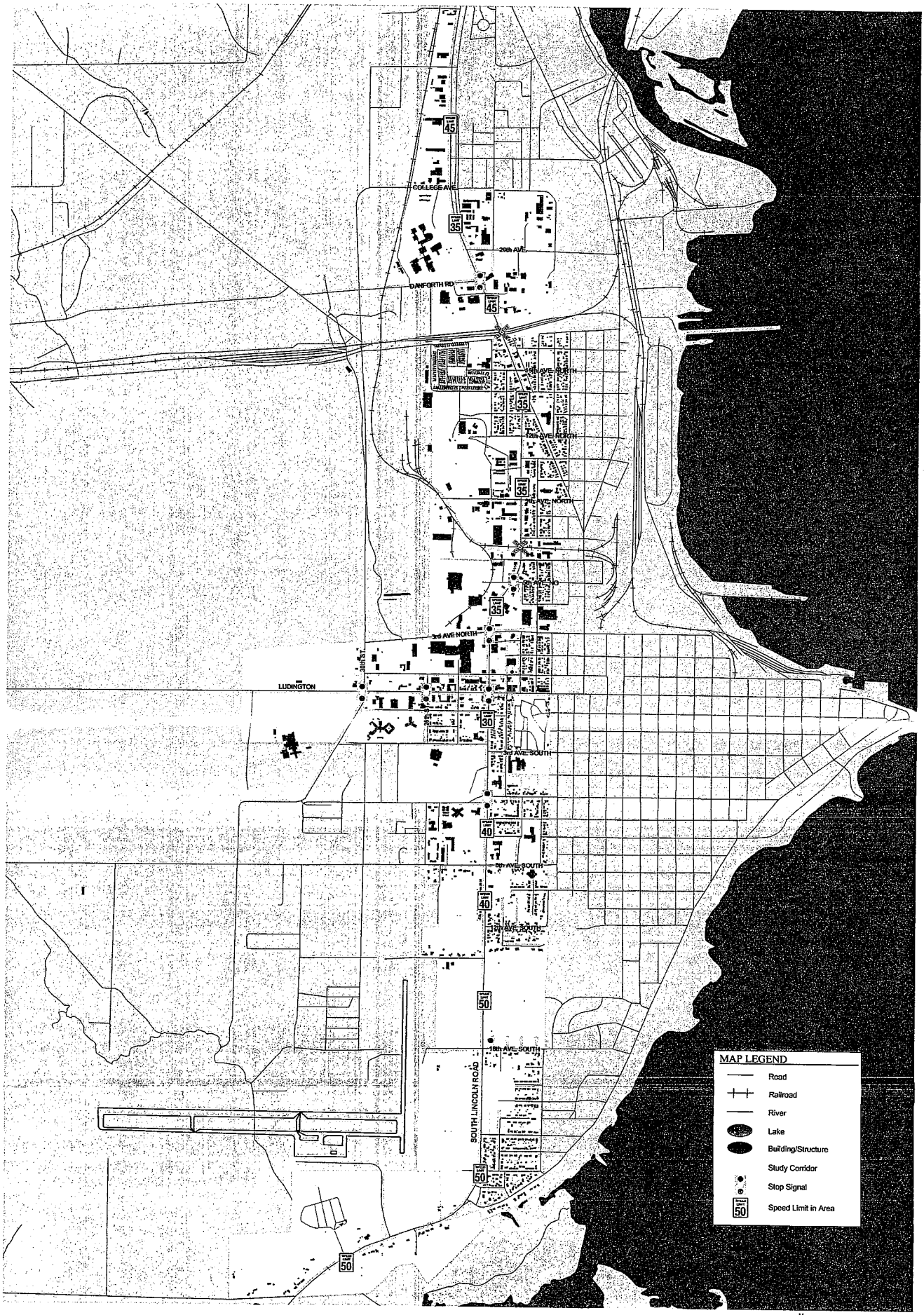
- On Ludington Street, west of Lincoln, there is primarily highway service commercial development with a five-lane road all the way to 30th Street North. Ludington quickly transitions west of 30th Street, into a more rural road with two lanes and minimal development.

- There are traffic signals on Ludington at 26th Street and at 30th Street.

Speed Limits

The speed limits for M-35 (South Lincoln Road), south of Ludington were set in 1981. The speed limits north of Ludington were set in 1971. Map 3-1 displays these speed limits and they are listed below.

- Lincoln Rd.: 50 mph from South City limits to 12th Ave. South
  40 mph from 12th Ave. South to 3rd Ave South and
  30 mph from 3rd Ave South to Ludington Street
  35 mph from Ludington to 15th Street
  45 mph from 15th Street to Danforth
  35 mph from Danforth to 25th Street
  45 mph from 25th Street to City Limits



ESCANABA CORRIDOR STUDY

SPEED LIMITS AND TRAFFIC LIGHTS

0 0.5 Miles

N

MAP 3-1

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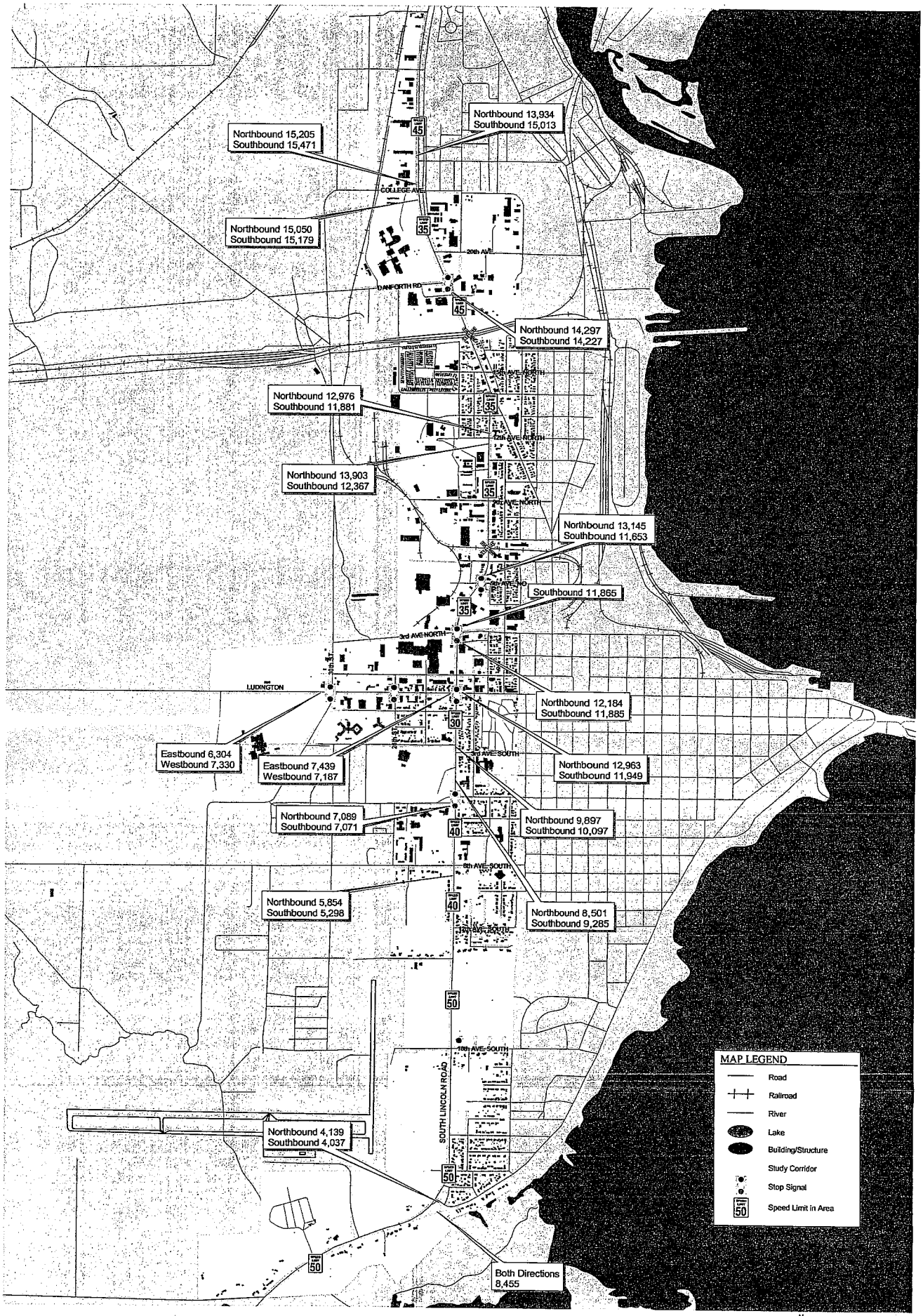

ESCANABA CORRIDOR STUDY

DIRECTIONAL TRAFFIC VOLUMES AT INTERSECTIONS WITHIN STUDY AREA

0 0.5 Miles

N

MAP 3-2

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Traffic Volumes

The following traffic volume data was provided by the Michigan Department of Transportation and collected from 1996 to 2001. This information was averaged to get a 24-hour count average over the variety of time points available.

In general, the highest traffic volumes exist on north Lincoln with traffic volumes ranging around 20,000-22,000 average daily traffic (ADT) volume at Ludington Street to about 28,000-30,000 ADT near College Ave.

Traffic Count Data

Table 3-1: US 2 Ludington St.

Control Section 21021	**Average**	
	EB	**WB**
200 ft W of N 30th/W of City Limits	6,304	7,330
	EB	**WB**
100 ft W of M-35 (23rd Street)	7,439	7,187

Table 3-3

M-35 Lincoln Rd.

Control Section 21031	**Average**	
	NB	**SB**
100 ft S of Eighth Ave	5,854	5,298
	NB	**SB**
100 ft S of Fifth Ave	7,089	7,071
	NB	**SB**
100 ft N of Third Ave S	9,897	10,097
	Both Directions	
100 ft SW of Lakeshore Dr.	8,455	
	NB	**SB**
100 ft N of Lakeshore Dr.	4,139	4,037
	Both Directions	
0.9 Miles SW of EBD Lakeshore Dr.	6,560	

Table 3-2: M-35 Lincoln Rd.

Control Section 21022

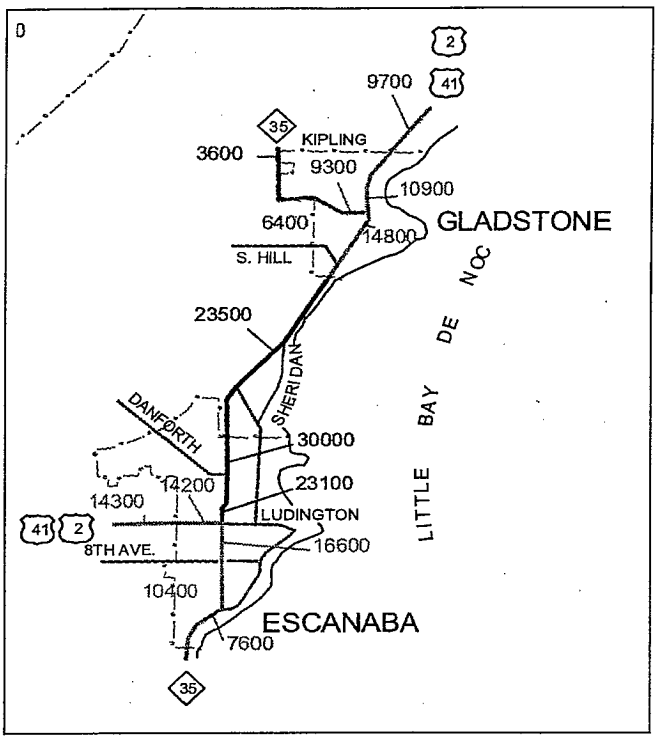
	Average	
100 ft South of 12th Ave. N.	**NB**	**SB**
	13,903	12,367
100 ft North of 12th Ave. N.	**NB**	**SB**
	12,976	11,881
100 ft North of Ludington Ave	**NB**	**SB**
	12,963	11,949
100 ft South of College (23rd)	**NB**	**SB**
	15,050	15,179
100 ft North of College (23rd)	**NB**	**SB**
	15,205	15,471
0.4 Mile N of 20th Ave	**NB**	**SB**
	13,934	15,013
100 ft South of 3rd Ave N.	**NB**	**SB**
	12,184	11,885
North of 3rd Ave N.	**NB**	**SB**
		11,865
100 ft North of 5th Ave N.	**NB**	**SB**
	13,145	11,653
100 ft SE of Danforth Rd.	**NB**	**SB**
	14,297	14,227

The volume data above shows that the majority of traffic is north of Ludington Street on Lincoln Road. The highest volumes are around the Community College and near the large retail uses along Lincoln Road (see Map 3-2).

Volumes that are presented here were compared to the 2000 annual average of 24 hour traffic volumes which MDOT prepares for all truck lines within the state (see Map 3-3). The 2000 ADT numbers are similar to the averages found above.

The 2000 numbers for the community college area on Lincoln Road are an average 30,000 trips for a 24-hour period. Lincoln Road between Danforth and Ludington has 23,100 as an average daily traffic volume. Ludington Street, west of Lincoln has an average of 14,200 trips.

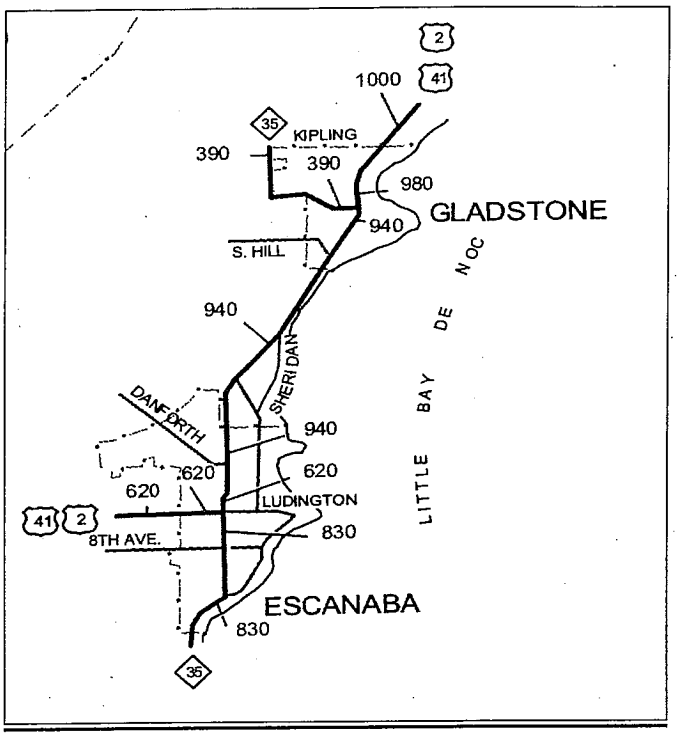
MAP 3-3: MDOT 2000 AVERAGE DAILY TRAFFIC VOLUMES



The volume data is showing a modest increase from year to year in the corridor. Citizens are concerned with this increasing traffic. One concern is with pedestrian traffic between neighborhoods located on both sides of Lincoln Road. A lack of continuous sidewalks and proper pedestrian crossings makes walking along or across this corridor dangerous.

At the December 2001 community meeting, one of the primary traffic concerns voiced was the amount and impact of truck traffic on the Lincoln Road corridor. Data representing volumes for commercial vehicles, such as trucks, versus automobile traffic is not collected on a regular basis at this time by MDOT. There is very limited information on volumes by type of vehicle for the Escanaba area. The commercial traffic ADT for Escanaba is displayed in Map 3-4. The percentage of commercial vehicles ranges from 4-6% of all traffic for the Lincoln Road corridor, according to the 2000 ADT volumes. Overall Escanaba's commercial vehicle traffic was higher than that of Marquette's (about 2-4% of the total ADT), but lower than that of Iron Mountain's (5-7% of the total ADT). More data collection with contemporary truck counts is needed in order to understand the portion of traffic that is comprised of large trucks, as compared to other commercial vehicles. The truck traffic is a special concern because trucks to or from the Menominee area currently have no other option except on Lincoln Road. Some trucks currently use Danforth Road and North 30th Street as a local bypass.

MAP 3-4 2000 ADT FOR COMMERCIAL VEHICLES (BUSES, TRUCKS, ETC.)



Crash Data

The crash data for this report was obtained from the Michigan Department of Transportation. The data is from a crash report database collected from police records. Overall there were 1,299 crashes reported on Lincoln Road and Ludington Street (west of Lincoln) from 1994 to 1998. There were slightly more crashes reported on the south side of Lincoln Road, 563 crashes, compared with the north side of Lincoln Road at 559 crashes despite much higher traffic volumes on the north side. Ludington Street had 177 crashes reported for the four years represented (see Table 3-4).

The tables 3-5, 3-6 and 3-7 reflect the crashes associated with each of the study segments on the two corridors. It also provides the lengths in miles associated with the study segment. Intersection related crashes were separated from driveway related crashes. The intersections with the highest crash rates include (1) the Lincoln Road and Ludington Street intersection with 89 crashes, (2) the Lincoln Road and 5th Ave South intersection with 56 crashes and (3) the Lincoln Road and 3rd Ave South intersection with 43 crashes. Lincoln Road from 3rd Ave South to 8th Ave South was the segment with the highest number of crashes. In fact, 20% of all crashes in the study area and nearly 50% of all crashes in the south Lincoln Road corridor are in this segment.

Table 3-4: Crash Totals
1994-1998

Ludington Street (US-2)	177
Lincoln Road (north of Ludington)	559
Lincoln Road (south of Ludington)	563
Total	1,299

Table 3-5 Section Totals for Ludington Street (US-2)	**Crashes**	**Length (in Miles)**	**Intersection Related**	**Driveway Related within 150' of Intersection**	**Other Driveway Related**
City Limits to N. 30th St.	57	0.49	19	2	1
N. 30th St. to Lincoln	120	0.51	99	7	0
Total	177		118	9	1

Table 3-6 Section Totals for Lincoln Street (M-35) North of Ludington	**Crashes**	**Length (in Miles)**	**Intersection Related**	**Driveway Related within 150' of Intersection**	**Driveway Related**
City Limits to College Ave.	90	0.76	42	8	4
College Ave to Danforth	95	0.39	69	4	1
Danforth/19th to 14th Ave. N	122	0.49	73	10	0
14th to 9th Ave. N	44	0.44	28	3	2
9th Ave. N to 3rd N	73	0.57	34	16	8
3rd N to 1st N	54	0.14	26	8	0
1st Ave. N to Ludington	81	0.11	70	11	1
Total	559		342	60	16

Table 3-7 Section Totals for Lincoln Street (M-35) South of Ludington	**Crashes**	**Length (in Miles)**	**Intersection Related**	**Driveway Related within 150' of Intersection**	**Driveway Related**
Ludington to 1st Ave. S	85	0.12	59	6	3
1st Ave S to 3rd Ave. S	32	0.09	25	4	2
3rd Ave. S to 8th Ave. S	279	0.48	177	36	17
8th Ave. S to 18th Ave.	64	0.77	35	9	2
18th Ave. to Lakeshore	68	0.7	35	3	1
Lakeshore to City Limits	35	0.81	4	0	1
Total	563		335	58	26

Crash Rates Per Mile

A crash rate per mile measure was used in order to "equalize" the crashes over a segment because the segments varied in length. The highest rates of crashes within the segments are from Ludington to 1st Street North. Closely behind is the intersection between Ludington to 1st Street South. The third worst section for crashes per mile also was the highest actual number of crashes, which was between 3rd Avenue South and 8th Avenue South. Tables 3-8 and 3-9 depict the crash rates per mile for each of the study segments on Lincoln Road and Table 3-10 shows crash rates per mile for Ludington.

Table 3-8 Section Totals for Lincoln Street (M-35) North of Ludington	**Crashes**	**Length (in Miles)**	**Crash Rate per Mile**
City Limits to College Ave.	90	0.76	118.42
College Ave to Danforth	95	0.39	243.59
Danforth/19th to 14th Ave. N	122	0.49	248.98
14th to 9th Ave. N	44	0.44	100.00
9th Ave. N to 3rd N	73	0.57	128.07
3rd N to 1st N	54	0.14	385.71
1st Ave. N to Ludington	81	0.11	736.36
Total	559		

Table 3-9 Section Totals for Lincoln Street (M-35) South of Ludington	**Crashes**	**Length (in Miles)**	**Crash Rate per Mile**
Ludington to 1st Ave. S	85	0.12	708.33
1st Ave S to 3rd Ave. S	32	0.09	355.56
3rd Ave. S to 8th Ave. S	279	0.48	581.25
8th Ave. S to 18th Ave.	64	0.77	83.12
18th Ave. to Lakeshore	68	0.7	97.14
Lakeshore to City Limits	35	0.81	43.21
Total	563		

Table 3-10 Section Totals for Ludington Street (US-2)	**Crashes**	**Length (in Miles)**	**Crash Rate per Mile**
City Limits to N. 30th St.	57	0.49	116.33
N. 30th St. to Lincoln	120	0.51	235.29
Total	177		

Other Crash Data Observations

Deer

There were 113 deer involved in crashes from 1994 through 1998 within the study area on Lincoln Road and Ludington Street. The 113 deer crashes represents 8.7% of all the crashes reported in the study area for this period.

The deer crashes were primarily located on the far west side of town, on Ludington Street, west of 30th Street North. Large concentrations of deer crashes also occurred on the south end of M-35, south of 8th Ave South. Some were also noted on the north side of Escanaba, north of Danforth Road.

Traffic Volumes and Crash Rates

An examination of the crash rates versus the volume data, reveals the highest crash areas within Escanaba are not concentrated in areas where the highest volumes are. Typically the highest crash data is related to the volumes. The highest rates for crashes were noted at the Ludington Street and Lincoln Road intersection and on the segment of Lincoln Road from 3rd Ave South to 8th Ave South. The presence of a relatively high number of crashes compared to volumes could indicate a problem with the intersection design, and/or a problem with too many conflict points within the area. The 5th Ave South intersection was redesigned in 1995, but the crash rate did not decrease with the intersection reconfiguration. The relatively high number of crashes in the section of Lincoln Road from 3rd Ave South to 8th Ave South may be related to inexperienced drivers associated with the high school.

The highest volumes along Lincoln Road were at Danforth Road, however the crash rate at that intersection was one of the lowest within the city. This indicates that the traffic on this area of the road is effectively being handled through the use of signals, limited curb cuts and the boulevard road design north of there.

Segments with Higher Than Expected Crash Rates

The National Cooperative Highway Research Program has calculated average crash rates per mile based on average daily traffic (ADT) volumes and road type (see Table 5-1). For a typical highway with two-way traffic and a left-turn lane, with an ADT from 20,000 to 30,000, the crash rate per mile average is 60 to 90 per year. Several sections of Lincoln, with ADT volumes of about 20,000 to 30,000 have much higher rates per year than this average rate. The Ludington to 1st Street North crash rate is about 175 crashes per mile per year. This is almost twice the maximum expected rate. The 3rd Ave South to 8th Ave South averages about 145 crashes per mile per year, and the volumes in this area of Lincoln Road are lower, averaging about 16,000 ADT. This is more than twice the maximum expected rate. The average crash rate per mile per year at Danforth Road is about 60 crashes per mile per year, which is considered low for the ADT volumes on this portion of the road.

Despite the relatively low number of driveway related crashes compared to intersection related crashes on Tables 3-5, 3-6 and 3-7 in these problem areas, the high numbers of driveways in these segments were in all likelihood significantly related to the crashes in these areas. This occurs by contributing to the congestion and turning movements in these areas.

Crash Types

Crash types for each study section were analyzed from the crash data. Crash types are categorized at the crash on the police report. The top three crash types listed for each study area are presented within Table 3-11. Overwhelmingly the category for most of the crash types selected in the crash reports was "rear end-straight" which means that the vehicle was traveling straight on the road and was rear-ended. This category represented 32% of all crashes on the Lincoln Road corridor. These types of crashes are often associated with quick stops. A common reason for quick stops is unexpected turning movements into or out of a driveway. The more driveways and the closer together they are, the more potential for conflict.

The crash types noted at the Ludington to 1st Ave North, and 1st Ave North to 3rd Ave North segments, reflect some of the problems with rear end crashes, but also with cars being hit at an angle. In the 1st to 3rd Ave North segment, head on crashes turning left were 11% of the total crashes within that section. This is the only section within the city on Lincoln Road where this type of a crash seems to occur with regularity. This suggests a need to restrict left turning movements in this segment with signage or roadway treatments.

Table 3-11: Crash Type by Segment

Lincoln Road: North	**1st**	**2nd**	**3rd**
Ludington-1st Ave North	Rear End-Straight	Angle-Straight	Side Swipe
1st Ave-3rd Ave North	Rear End-Straight	Angle-Straight	Head-on Turn Left
3rd Ave-9th Ave North	Rear End-Straight	Angle-Drive	Angle-Straight
9th Ave-14th Ave North	Rear End-Straight	Side Swipe	Fixed Object
14th Ave-Danforth	Rear End-Straight	Angle-Turn	Side Swipe
Danforth-College	Rear End-Straight	Angle-Straight	Side Swipe
College to City Limits	Rear End-Straight	Animal	Fixed Object
Lincoln Road: South			
Ludington-1st Ave South	Rear End-Straight	Side Swipe	Angle-Turn
1st Ave-3rd Ave South	Rear End-Straight	Angle-Turn	Angle-Drive
3rd Ave-8th Ave South	Rear End-Straight	Angle-Straight	Side Swipe
8th Ave-18th Ave South	Rear End-Straight	Angle-Straight	Angle-Drive
18th Ave-Lakeshore	Animal	Side Swipe	Backing
Lakeshore-City Limits	Animal	Fixed Object	Rear End-Straight

Main Problem Areas

There are four primary findings from the crash data.

1. Overwhelmingly, rear end crashes are the most prevalent type of crash on the corridor. These are largely the result of numerous driveways along the corridor and a lack of right-turn deceleration lanes for local streets and into properties along the corridor. This "rear-end" crash problem can be addressed through access management, which over time, would reduce the number of driveways and or conflict points, and through the use of deceleration lanes to take more turning traffic out of through lanes.
2. The Lincoln and Ludington intersection is the highest crash intersection within the study area. Currently the intersection has numerous driveways within 150 feet of the intersection. The gas station land uses on three of the intersections create conflicts with frequent ingress and egress vehicles. There is also no right-turn lane on Lincoln Road or Ludington Street. Suggestions for improving this intersection are detailed in Chapter 5 of the report.
3. From Ludington Street to 1st Ave North along Lincoln Road also has a high crash rate and is a high crash intersection. Suggestions for this intersection are detailed in Chapter 5 of this report.
4. The 3rd Ave South through 8th Ave South area has a high crash rate, and the 5th Ave South intersection has one of the highest reported number of crashes. Suggestions for this intersection are detailed later within the report. The segment has a fairly low traffic volume, so the high crash rate is troubling. The high school, churches, private residences and assisted living centers are the primary land uses in this section of Lincoln Road. The presence of the high school may indicate inexperienced drivers.

Key Problems

Access Points

The *City of Escanaba Comprehensive Plan, June 1996,* correctly noted that the lack of access control on Lincoln Road and Ludington is an aesthetic, as well as, a safety problem.

> *"Access control is a particular concern along Lincoln Road, and on Ludington, between Stephenson Avenue and Lincoln Road where the auto oriented retail has occurred and continues to be developed. Spacing of driveways, shared access drives, acceleration or deceleration lanes, visual sight lines and the number of driveways to be permitted are all issues to be resolved. Without the proper attention to this issue, the ability of a roadway to safely handle the capacity of traffic it was designed for will fall and compromise public safety." (page 14)*

> *"While the existing roads are not lacking in capacity to serve the current population, some congestion does occur as a result of numerous curb cuts along Lincoln Road north of Ludington Street." (page13)*

"Currently, the growth occurring along Lincoln Road appears to be largely random and strip commercial in nature. The development pattern is linear and consuming frontage with driveways and competing signage." (page 14)

Numerous driveways close together have been shown in national research to cause more crashes. Typically over 40 access points per mile is the threshold point when crash rates begin to rapidly increase. The consultant team reviewed the entire corridor and has provided suggestions for access control opportunities. These suggestions are provided in detail on Maps 5-2 through 5-5 in Chapter 5 of this report. This map shows consolidated driveways, closed driveways, linked parking lots, rear service roads and other opportunities for safer access.

The following set of tables shows the number of access points, or driveways, per segment of road. Lincoln Road, north of Ludington has far more access points (142) than the southern segments (70). Currently the north side has about 49 access points per mile and the south side has about 24 access points per mile. The area from Ludington to 9th Ave North has a high concentration of access points and also has 58% of the driveway related crashes on Lincoln Road north of Ludington.

The Ludington and Lincoln intersection, which is the highest crash intersection in the study area and Lincoln Road from 1st Ave North to 1st Ave South is the highest crash rate study section. This area has numerous driveways within a small area. These curb cuts are probably a contributing reason for the high rate of crashes.

Table 3-12 Section Totals for Lincoln Street (M-35) North of Ludington	**Crashes**	**Number of Access Points (on both sides of the road)**	**Length (in Miles)**
City Limits to College Ave.	90	26	0.76
College Ave to Danforth	95	7	0.39
Danforth/19th to 14th Ave. N	122	24	0.49
14th to 9th Ave. N	44	27	0.44
9th Ave. N to 3rd N	73	41	0.57
3rd N to 1st N	54	10	0.14
1st Ave. N to Ludington	81	7	0.11
Total	559	142	2.9

Table 3-13

Section Totals for Lincoln Street (M-35) South of Ludington	**Crashes**	**Number of Access Points (on both sides of the road)**	**Length (in Miles)**
Ludington to 1st Ave. S	85	9	0.12
1st Ave S to 3rd Ave. S	32	12	0.09
3rd Ave. S to 8th Ave. S	279	12	0.48
8th Ave. S to 18th Ave.	64	24	0.77
18th Ave. to Lakeshore	68	13	0.7
Lakeshore to City Limits	35	16	0.81
Total	563	86	2.97

Key Solutions

Reducing the Number of Access Points

Maps 5-2 through 5-5 suggest driveway consolidation and driveway closure of many driveways along Lincoln Road. These closures will likely improve safety conditions by reducing the number of conflict points. Tables 3-14 and 3-15 show how many access points are suggested to be closed per segment of road. The 9th Ave. North to 3rd Ave North has the largest number of access points and one of the fewest number of closures. This is because the lot pattern and size makes it difficult to close more driveways unless significant redevelopment were to occur in which case, every effort should be made further reduce the number of access points.

Table 3-14 Section Totals for Lincoln Street (M-35) North of Ludington	**Crashes**	**Number of Access Points (on both sides of the road)**	**Length (in Miles)**	**Recommended Access Points To Be Closed**	**Remaining Access Points**
City Limits to College Ave.	90	26	0.76	1	25
College Ave to Danforth	95	7	0.39	0	7
Danforth/19th to 14th Ave. N	122	24	0.49	2	22
14th to 9th Ave. N	44	27	0.44	7	20
9th Ave. N to 3rd N	73	41	0.57	3	38
3rd N to 1st N	54	10	0.14	2	8
1st Ave. N to Ludington	81	7	0.11	2	5
Total	559	142	2.9	17	125

Table 3-15 Section Totals for Lincoln Street (M-35) South of Ludington	**Crashes**	**Number of Access Points (on both sides of the road)**	**Length (in Miles)**	**Recommended Access Points To Be Closed**	**Remaining Access Points**
Ludington to 1st Ave. S	85	9	0.12	2	7
1st Ave S to 3rd Ave. S	32	12	0.09	0	12
3rd Ave. S to 8th Ave. S	279	12	0.48	1	11
8th Ave. S to 18th Ave.	64	24	0.77	0	24
18th Ave. to Lakeshore	68	13	0.7	0	13
Lakeshore to City Limits	35	16	0.81	0	16
Total	563	86	2.97	3	83

Table 3-16 reflects the number of access points which are proposed to be closed on Ludington Street. Similar to Lincoln Road, the numerous driveways could be avoided by generating access for properties from the alley and combining driveways with adjacent landowners. These closures will reduce some of the conflicts on Ludington and Lincoln Road, but a fairly high number will still remain. MDOT and the City of Escanaba need to also consider creation of right-turn

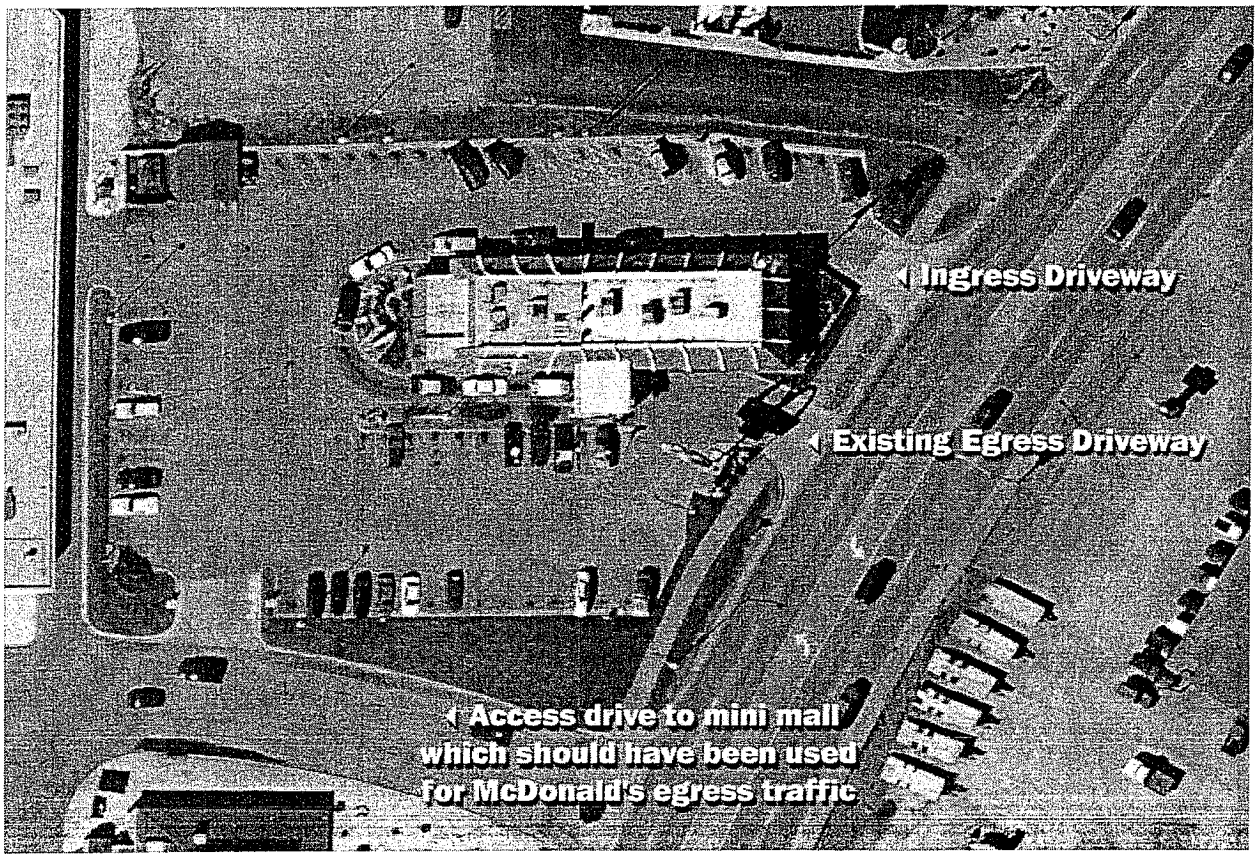
deceleration lanes, which will take right-turning traffic out of through lanes. Deceleration lanes may also help to decrease the number of rear-end crashes on the corridor.

Table 3-16 Section Totals for Ludington Street (US-2)	Crashes	Number of Access Points (on both sides of the road)	Length (in Miles)	Recommended Access Points To Be Closed	Remaining Access Points
City Limits to N. 30th St.	57	37	0.49	7	30
N. 30th St. to Lincoln	120	7	0.51	0	7
Total	177	44	1	7	37

The best time to address access management on a site is when a site is first developed. This means that a rigorous *site plan review* process is necessary for new development in order to assure that on-site circulation and access to the corridor is properly planned. Redevelopment or expansion of a building, or a change to the use of a site, also creates an opportunity to address access. These changes may also provide an opportunity for shared access or parking lot cross access with adjacent property owners. Significant additions to the *Escanaba Zoning Ordinance* are needed to incorporate access management and to add a site plan review process and standards (see Chapter 4).

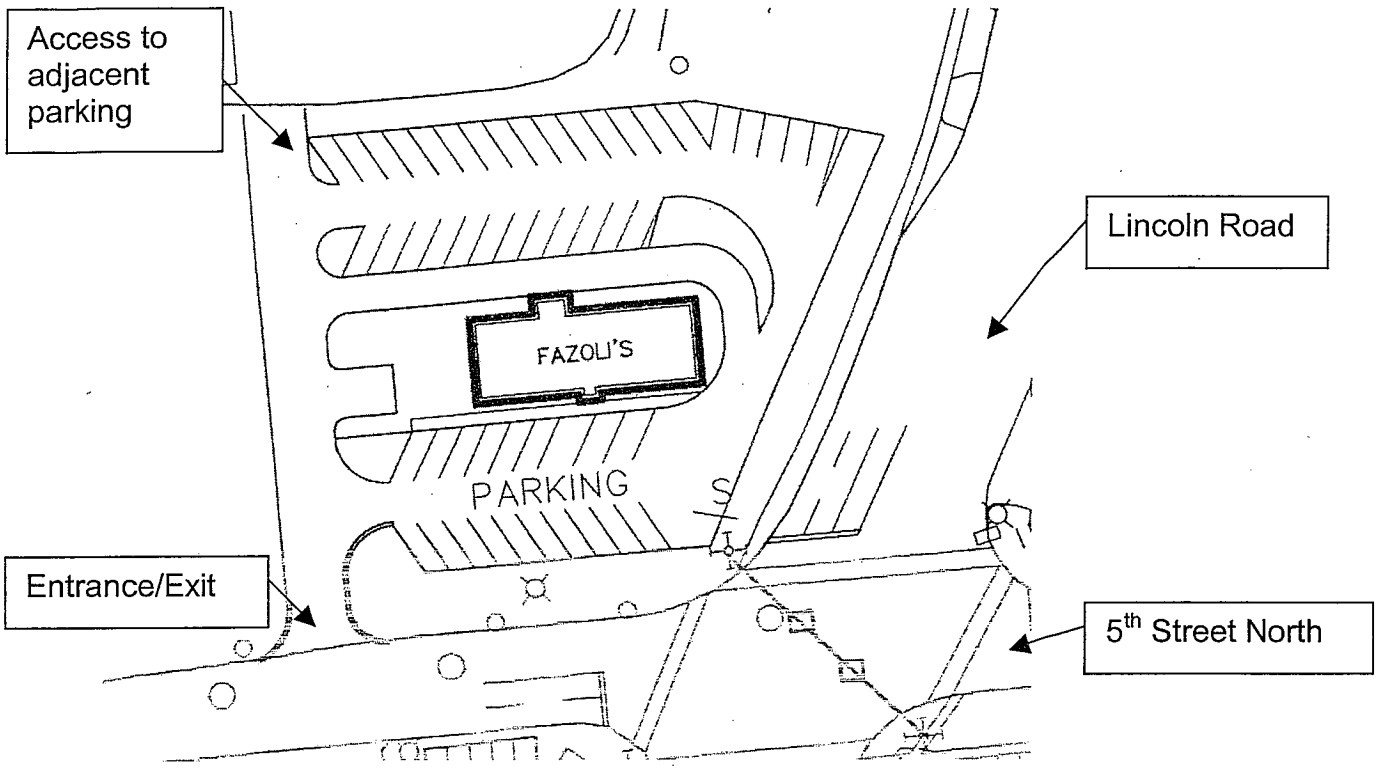
Escanaba recently missed an opportunity for improved access management with a recently remodeled McDonald's along Lincoln Road. The aerial photo shows the new McDonald's and the two access driveways which were allowed to be built. However, these driveways are too close to each other and to other driveways. The egress driveway is also partially hidden to oncoming traffic by the slant of the building around the curve. This creates a problem for drivers reacting to traffic coming out of the McDonald's, as well as to traffic attempting to make a turn into the McDonald's. The egress driveway should not have been permitted here. The building should have been set further back on the site and the drive-thru should have been located in a manner so that traffic could have exited onto the adjacent access drive for the mini-mall at the rear of this property. The rear of this parking lot should also have been connected to the abutting parking lot to the north about where the dumpster is located (see Photo 3-1).

Photo 3-1: Escanaba McDonald's



The city should make an effort to promote the sharing of driveways where they are too close together and link parking lots wherever feasible. New driveways should not be permitted in areas where driveway spacing already violates MDOT standards if at all possible. On redeveloped sites, access should come from side streets when possible. The site plan for the new Fazoli's indicates a strong observance of the benefit of taking access from the secondary street and avoiding another curb cut on Lincoln Road (see Figure 3-1). This practice should be continued.

Figure 3-1: Fazoli's Site Plan



Driveway closures, shared access and other access management topics are discussed further in Chapter 5.

Chapter IV

LAND USE ALTERNATIVES

Introduction

This chapter describes existing land use, planned future use and existing zoning of land uses along Lincoln Road and Ludington Street within the study area. It presents alternative land uses and analyzes them relative to the *City of Escanaba Comprehensive Plan* and *Zoning Ordinance.* Specific suggestions are offered for changes to the *Comprehensive Plan* and *Zoning Ordinance.*

Land Use/Transportation Relationship

The land use/transportation relationship is fundamental to the safety and efficiency of any street. It is most obvious along major arterials like US 2/41 (North Lincoln Road and West Ludington Street) and M-35 (South Lincoln Road). Here access to abutting land uses competes with the traffic movement function of the road--especially on US 2/41--causing congestion. These problems are exacerbated by a plethora of driveways close to one another and a cacophony of distracting signs making safe turning movements an unnecessary challenge for drivers--especially for tourists and infrequent visitors to Escanaba.

Ideally along a major arterial there would be very few driveways widely spaced apart since the principal purpose of an arterial is to move large volumes of traffic safely over long distances. Unfortunately, two-thirds of the study corridor has already developed as strip commercial development and much of the balance as strip residential development. Since these corridors have average sized rights-of-way and buildings are close to the right-of-way in many places, there is little opportunity to channel traffic flow. For example, a boulevard could preserve movement and increase safety in this area by channeling traffic flow and restricting turns. However, that would require very substantial land use changes. Assuming there is no support for the aggressive efforts needed to acquire additional right-of-way for a boulevard along the full length of the study corridor, the options for action are driveway consolidation, intersection improvements, and alternative access as the primary means of reducing congestion, improving safety and maintaining traffic flow. These alternatives will be discussed in more detail in the next two chapters. In this chapter, observations are made about existing land uses and alternative land uses on vacant land abutting South Lincoln Road, and in scattered locations along North Lincoln Road. Observations are also offered relative to land uses depicted on the *Future Land Use Map* and *Zoning Map* of the City in these places as well.

Alternatives are offered for several reasons. First, these alternatives suggest ways to achieve better access management through future land use changes that meet existing community needs (as described in the *Comprehensive Plan*) and current market trends without seriously undermining safety or efficiency on the roadway – if proper access management techniques were employed. Second, these alternatives are offered to suggest ways of better using underdeveloped land in some places along North Lincoln to accommodate growth while preserving traffic safety

and access management. Finally, these alternatives suggest redevelopment activities in some places to improve traffic safety and provide for some appropriate in-fill development.

Important Caveat Concerning Land Use Alternatives

Most of the vacant land along South Lincoln Road and West Ludington Street is characterized as wetlands on the *National Wetland Inventory* (see Map 4-1). While designation on this inventory does not mean a wetland is automatically subject to state or federal wetland permitting requirements--that occurs only after an on-site wetland determination--it is a significant red flag that serious development limitations likely exist on the land. If on-site determinations were to reveal the presence of regulated wetlands, very little of this land would likely be able to be developed for more than an occasional single family home, and even then, only if adequate upland were available. The text of the City's *Comprehensive Plan* and *Future Land Use Map* as well as the MIRIS Land Use/Cover Maps prepared in about 1980 suggest only some of the vacant land is wetland and that much development potential remains. From a transportation safety and efficiency standpoint, leaving these vacant lands undeveloped is best, as existing traffic problems will only be exacerbated by new development. From an environmental protection and water quality standpoint, leaving these vacant lands undeveloped is best. However, from the standpoint of maximizing the efficient use of land and tax base in the city, both the city and wetland owners of these parcels probably want to see them developed with appropriate mitigating measures and designs in place.

This *Corridor Plan* strongly opposes conversion of regulated wetlands to a more intensive use. The presentation of all the alternative land uses which follow should not be construed as promoting or supporting conversion of regulated wetlands to another use. However, the authors of this Plan are neither wetland identification experts, nor administrators of state or federal wetland permit programs. So, if at a future time, there is an official determination made by the proper state and/or federal officials that some or all of the vacant lands identified as wetlands on the *National Wetlands Inventory* along South Lincoln Road and West Ludington Street are NOT regulated wetlands, then the question of what land uses are appropriate to consider there becomes relevant. The analysis that follows identifies appropriate alternative land uses IF the vacant lands on South Lincoln Road and West Ludington Street are NOT determined to be wetland, or if sufficient upland property exists on a parcel to permit some development.

Land Use Alternatives

Table 4-1 describes the numbered areas generally shown on Map 4-2. Existing land use (as discerned from 1998 aerial photographs) is identified along with future land uses as specified in the text of the *Comprehensive Plan* and/or on the *Future Land Use Map*. The current zoning classification of the land is also identified. The last column presents alternative future land uses if the land were NOT determined to be wetland.

Table 4-1: Alternative Future Land Uses Compared to Existing, Planned and Zoned Uses

Location # on Map	General Street Location (see colored area on map)	Existing Land Uses (as appears on air photos)	Current Plan and Zoning Designations	Alternative Future Land Uses
#1	South Lincoln at Lakeshore Dr. triangular lot on SE corner	Vacant land	Plan: Undesignated Zoning: A: Single Family District and D: Local Business District	New entry sign to city (south end) and neighborhood convenience store (Local Business D zone). Access and physical exterior needs to be carefully designed to fit in.
#2	South Lincoln at Lakeshore Dr.-- west side	Currently house on mostly vacant large parcel	Plan: Multiple family housing Zoning: A: Single Family District	a. Church, medical offices, small tech park offices, light industrial, research; County Road Commission use (Commercial District "E") b. Apartments (Residential District "C")
#3	South Lincoln at 18th Ave. South --SW corner	Real estate and commercial service uses	Plan: Undesignated Zoning: A: Single Family District	a. Church, medical offices, small tech park offices, light industrial or research (Commercial District "E") b. Apartments (Residential District "C")
#4	East side of South Lincoln between 23rd and 18th	Community gardens and vacant	Plan: Undesignated Zoning: A: Single Family District	Single family residential dwellings (Residential District A or B)
#5	West side of South Lincoln between 18th and 14th	Vacant	Plan: Single family residential Zoning: A: Single Family District and part E-1: Planned Commercial District	a. Church, medical offices, small tech park offices, light industrial or research (Commercial District "E") b. Apartments (Residential District "C")
#6	West side of South Lincoln between 14th and 8th	Mostly vacant, some residential	Plan: Single family residential Zoning: A: Single Family District	a. Apartments (Residential District "C") b. Single family residential dwellings at same average density as surrounding lots. (Residential District A or B)
#7	West side of South Lincoln between 8th and 5th	Large lot single family residential and unused part of church parcel	Plan: Multi-family residential Zoning: C: Multi-family residential	Apartments or assisted living at same density as surrounding uses (Residential District "C")

Location # on Map	**General Street Location** (see colored area on map)	**Existing Land Uses** (as appears on air photos)	**Current Plan and Zoning Designations**	**Alternative Future Land Uses**
#8	West side of South Lincoln between 3rd and 1st	Large residential lots with significant unused parts.	Plan: Undesignated Zoning: A: Single Family District	Single family residential dwellings with lots same as avg. of adjoining parcels (Residential District A or B).
#9	East side of North Lincoln, north of 3rd and south of 5th	Heavy equipment sales/rental	Plan: Commercial Zoning: G: Heavy Manufacturing District	Retail commercial or restaurant (Commercial District E)
#10	East side of North Lincoln, north of 5th and south of 6th	Vacant residential lots	Plan: Undesignated Zoning: F: Light Manufacturing District	Retail commercial or restaurant (Commercial District E)
#11	In K-Mart parking lot	Excessive parking lot	Plan: Undesignated Zoning: F: Light Manufacturing District	Retail commercial or restaurant (Commercial District E)
#12	From 12th St. north to the RR trestle on both sides of North Lincoln	Mostly single family residential on small lots with some commercial and auto service uses (assume all the commercial and auto service uses remain and all residential are replaced)	Plan: Undesignated Zoning: F: Light Manufacturing District; E: Commercial District; A: Single Family District	Office or personal service uses (barber, beauty shop, shoe repair, etc), auto service stations, but not retail (Commercial District D)
#13	West Ludginton from North 30th St. to City limits on both sides of road	Mostly vacant, is an office building, hotel and hospital there now	Plan: "Future growth area" on north, undesignated on south Zoning: G: Heavy Manufacturing District on the north; F: Light Manufacturing District on the south	a. Hotel/motel and restaurants (Commercial District E) b. Small and large offices and similar institutional uses (Commercial District E)

Observations about the Alternatives

There are both apparent similarities and differences between existing uses, planned uses, presently zoned uses and alternative future uses. Generally the alternative future uses on Table 4-1 are more intensive uses than proposed in the *Comprehensive Plan* (especially on vacant land on South Lincoln Road), but less intensive than uses permitted in the current zoning ordinance on properties along North Lincoln Road.

The consultant team selected land uses that were both compatible with existing uses, appropriate for the area proposed, and appeared to fill a void in needed uses. This is especially true for the areas proposed for multi-family housing on South Lincoln Road. The *Comprehensive Plan* strongly advocates significant increases in multi-family housing (as well as for single family housing), but identifies few places for it to be constructed. South Lincoln Road provides many opportunities. If wetlands are present on most of the vacant land on South Lincoln Road, then it is likely very low density single family residential, limited multi-family residential or limited office uses would be permittable on upland portions of wetland properties. Still, great care should be taken when making driveway location and design decisions to not further undermine the functional integrity of the arterial.

Analysis of the Alternatives Relative to the Comprehensive Plan and Zoning Ordinance

A thorough, fair and rational consideration of the alternative future land uses described in Table 4-1 above, or any other future land uses along this corridor will be extremely difficult because of severe deficiencies in the *City of Escanaba Comprehensive Plan* and *Zoning Ordinance.* Additionally, there are severe deficiencies in the relationship between these two basic tools to guide future land use. Without correcting these deficiencies, it will be extremely difficult – if not impossible – to address access management problems. In addition, as long as these deficiencies continue, the City remains exposed to unnecessary risk of legal challenges that could consume large amounts of time, money and personnel resources that would be better spent on plan implementation. These deficiencies exist irrespective of the purposes and scope of issues addressed in the *Corridor Plan*. If these deficiencies are not corrected, they will remain serious impediments to implementation of this plan.

These deficiencies fall into the following categories which are described in more detail below:

- Inadequate relationship between existing uses, existing zoning and future land uses as presented in the Comprehensive Plan and Zoning Ordinance
- Omissions of consequence in the Comprehensive Plan
- Omissions of consequence in the Zoning Ordinance
- Seriously outdated District structure and Zoning Map boundaries.

Inadequate relationship between existing uses, existing zoning and future land uses as presented in the Comprehensive Plan and Zoning Ordinance

The legal structure for local planning and zoning in Michigan cities and villages was first established in 1921 and then modified in 1931. It has not materially changed since then. The Escanaba Comprehensive Plan and Zoning Ordinance are not in conformance with this structure.

The City-Village Zoning Act, PA 207 of 1921 authorizes cities and villages to adopt a zoning ordinance. In Section 1, subsection (2) the zoning regulations and districts are to be made based upon a plan designed to promote and accomplish the objectives of PA 207 of 1921. The Municipal Planning Act, PA 285 of 1931 authorizes cities and villages to create a planning commission; among its responsibilities is the preparation of a plan to guide the physical development of the community. This plan goes by various names; "comprehensive plan" or "master plan" are common names. Among other things, the comprehensive plan is supposed to serve as the legal basis for the zoning ordinance. Section 6, subsection 3 of the Municipal Planning Act set forth the following elements which must be addressed in the comprehensive plan.

> *(3) The municipal plan, with the accompanying maps, plats, charts, and descriptive matter shall show the planning commission's recommendations for the development of the territory, including, but not limited to, all of the following:*
> *(a) The general location, character, and extent of streets, viaducts, subways, bridges, waterways, floodplains, water fronts, boulevards, parkways, playgrounds, and open spaces.*
> *(b) The general location of public buildings and other public property.*
> *(c) The general location and extent of public utilities and terminals, whether publicly or privately owned or operated, for water, light, sanitation, transportation, communication, power, and other purposes.*
> *(d) The removal, relocation, widening, narrowing, vacating, abandonment, change of use, or extension of any of the ways, grounds, open spaces, buildings, property, utilities, or terminals described in subdivision (a), (b) or (c).*
> *(e) The general location, character, layout, and extent of community centers and neighborhood units.*
> *(f) The general character, extent, and layout of the re-planning and redevelopment of blighted areas.*
> *(g) A zoning plan for the control of the height, area, bulk, location, and use of buildings and premises.*

One of the statutorily required elements in the comprehensive plan is a "zoning plan" (see "g." above). This element is intended to provide a clear description of the zoning districts and uses allowed in each zone, as well as the dimensional regulations (setbacks, yards, height, lot area, etc.) which are usually included on a table in the zoning ordinance called the schedule of regulations. The zoning ordinance would then incorporate and elaborate upon these elements. The zoning plan usually also includes a description of the relationship between these elements of the zoning ordinance and the proposed future land uses as depicted on the future land use map. This requires explaining how the community proposes to move from the present to achieving the future land use arrangement depicted on the future land use map.

Most communities that understand the implications of the interdependent relationship between existing land uses, existing zoning and proposed future land uses follow a strategy with the following minimum elements:

1. Zoning districts reflect existing land uses and other compatible uses. For example, a strip commercial area would be zoned into a classification that was primarily limited to highway service uses (rather than into a light industrial classification that could permit a number of incompatible land uses or a general business classification that could permit more intensive business uses than were desirable on a small highway frontage lot).
2. Zoning districts focus almost exclusively on present land uses so that all other land uses will require either a rezoning into a different zoning classification (or in some cases a special use permit). Rezoning is the strongest local zoning tool (after creating the original zoning districts), and placing large amounts of land into a zoning classification different from existing uses promotes scattered uncontrolled development and usually results in significant incompatibilities between land uses. If an existing property is proposed to be changed to another land use, the comprehensive plan text and future land use map would be consulted for consistency. Conformance with the comprehensive plan and future land use map must be established prior to approval of the rezoning. If not, the rezoning would be withheld or denied, until the comprehensive plan and future land use map were updated to reflect the proposed future land use.
3. The future land use map of the comprehensive plan focuses on desired future land uses about 20-25 years into the future. These uses are what are feasible to adequately service within that time frame (capital improvement programs should reflect required needed improvements for a six-year period and be annually updated). In some cases, proposed future land uses may be substantially different from present uses (especially in areas with considerable vacant land and in areas where redevelopment is desirable). No rezoning would occur without first establishing consistency with the comprehensive plan, or amending the comprehensive plan to ensure the continued relationship between the plan and the zoning map.
4. The comprehensive plan and zoning ordinance are thoroughly reviewed at least once each 5 years to ensure they maintain the focus desired by the community and are appropriately related to one another.

Omissions of consequence in the Comprehensive Plan

The *City of Escanaba Comprehensive Plan* is concisely written, easy to read, well-organized, comprehensive in scope and addresses an appropriate range of contemporary issues. However, it is substantively weak with regard to public facilities, environmental constraints, description of community character (especially by neighborhood), and virtually devoid of any description of implementation methods. However, in the present context, its biggest deficiency is the lack of a zoning plan to serve as the legal basis for the zoning ordinance. By failing to include this required plan element, the community ignores a statutory mandate, which in turn can undermine the legal validity of the zoning ordinance. Given the serious deficiencies in the existing zoning district structure described below (which would have been clearly revealed if a zoning plan had

Chapter V

ACCESS MANAGEMENT ALTERNATIVES

Introduction

This chapter explains what access management is and presents basic access management techniques. Additional information on these techniques is available from MDOT's ***Access Management Guidebook***, 2001. Contact the MDOT Transportation Service Center in Escanaba for more information.

What is Access Management?

Access management is *"a set of proven techniques that can help reduce traffic congestion, preserve the flow of traffic, improve traffic safety, prevent crashes, preserve existing road capacity and preserve investment in roads by managing the location, design and type of access to property."* Michigan Department of Transportation, **Reducing Traffic Congestion and Improving Traffic Safety in Michigan Communities: The Access Management Guidebook,** October 2001, p. 1-13.

Lincoln Road and Ludington Street are similar to many other commercial arterial roads in Michigan where development has occurred slowly over time and traffic problems have grown with these developments. Access management techniques can help on arterial roads, such as Lincoln Road and Ludington Street, that have many small commercial lots with driveways in close proximity to each other. These driveways contribute to many of the crashes that are occurring on these corridors.

Why manage access? There are many reasons, but following is a list of five major benefits associated with access management:

1. Access management improves traffic safety and can prevent vehicular crashes.
2. Access management results in shorter travel times and reduced motorists costs.
3. Access management extends the function and capacity of roads.
4. Access management improves access to property while enhancing the value of private land development.
5. Access management results in nicer communities.

Access management can be utilized to remediate an existing situation or design a safe traffic environment for new developments. It is far easier to implement access management in new development, but when properties are improved or uses change, there is another opportunity for the city to achieve improved access to a property. So how does it work? Generally, access management benefits are pursued by:

- Limiting the number of driveways and conflict points.
- Separating driveways and other conflict points.
- Improving driveway operation by design.
- Removing turning vehicles from through traffic lanes.

Access Management Techniques

The following sections will introduce some selected access management techniques that could be utilized in the Lincoln Road and Ludington Street corridors to promote improved safety and efficiency on the arterials.

- Driveway consolidation
- Driveway alterations
- Signage treatments/Restricting turns
- Avoid additional curb cuts
- Front and rear access
- Improved local street connections
- Medians

Driveway Consolidation

Close driveway spacing is a problem for two reasons: 1) for drivers turning out of adjacent driveways, competing for the same roadway; 2) for drivers that have to react to the turning movements from ingress and egress traffic at several points simultaneously. Consolidating driveways can remove a conflict point from the road and if the driveways are too closely spaced, consolidating driveways can redesign a safer driveway for both businesses. Photo 5-1 illustrates some driveways on Lincoln Road which the consultant team is recommending to be consolidated in order to improve safety and reduce potential conflict points. Figures 5-1 thru 5-3 show how the driveway consolidation process and sharing driveways can remove conflict points from the arterial.

Photo 5-1: Driveways on Lincoln that are too close and confusing to drivers.

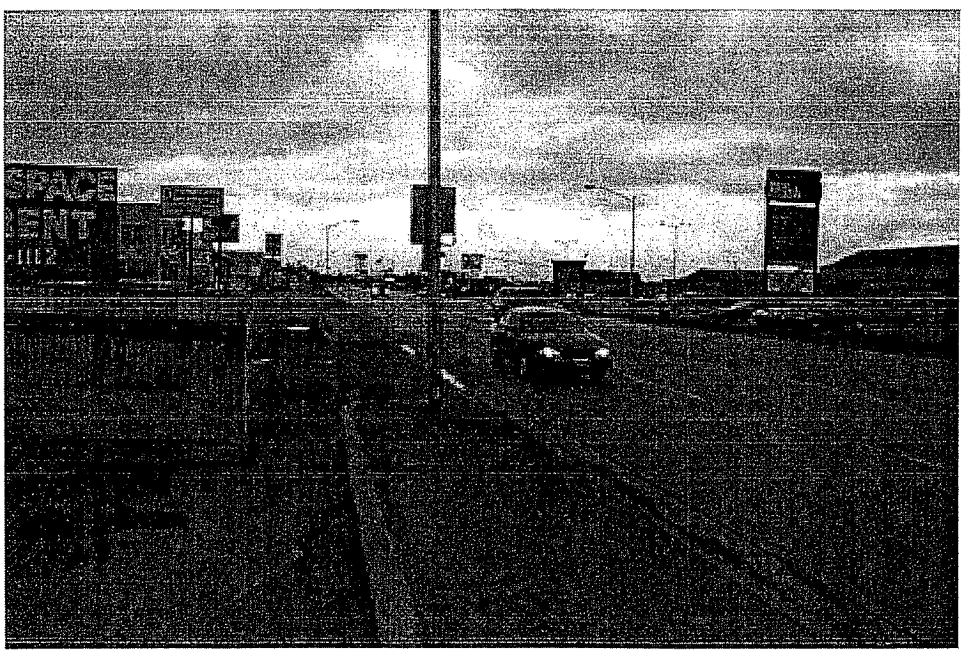
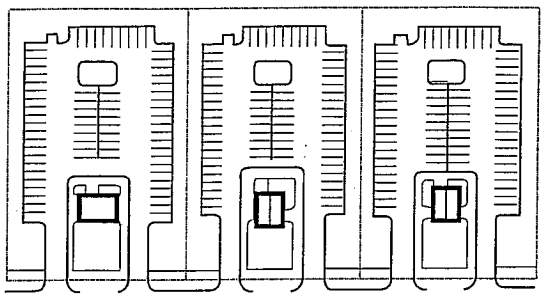
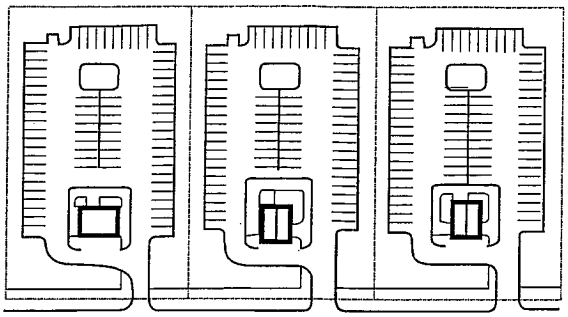


Figure 5-1



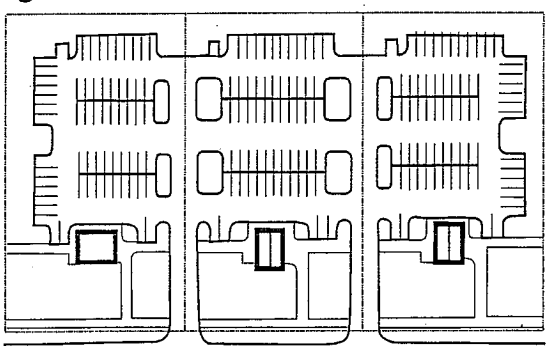
A typical pattern with separate in and out driveways.

Figure 5-2



An improvement where each site has but one two-way driveway. The total number of driveways has been cut in half.

Figure 5-3

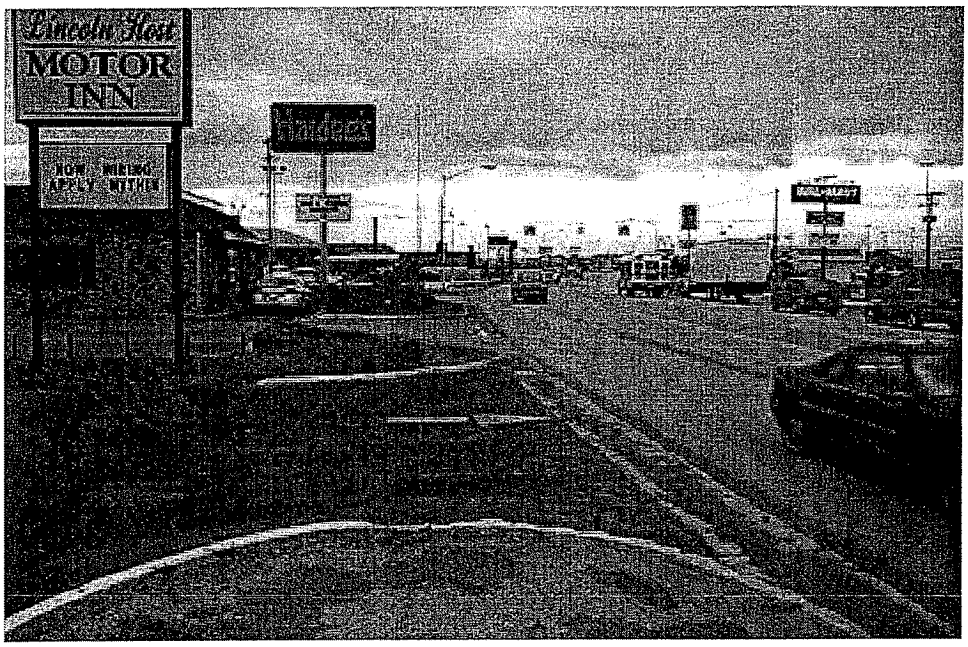


Shared driveways and connected rear parking provides fewer curb cuts and greater tree planting opportunities which will positively alter the appearance and function of these commercial uses.

Figures 5-1 through 5-3: Adapted by John Warbach, Planning and Zoning Center, Inc. from PACE, *Development Guidelines,* 1995.

The Hardee's driveway and the Motor Inn driveway shown in Photo 5-2 is an example of driveways too close to each other, which causes a potential safety problem. This is a good example of where driveway consolidation would reduce confusion and allow for more landscaping along the road.

Photo 5-2: This photo illustrates driveways that are too close to each other.

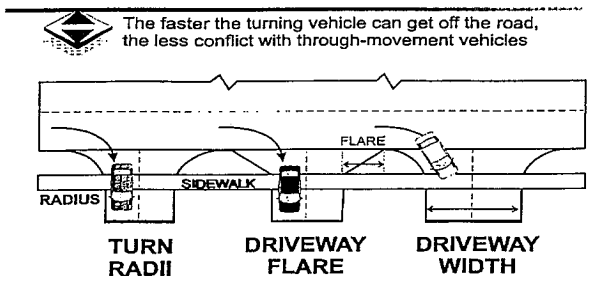


Driveway Alterations

The following excerpt from the *Access Management Guidebook* describes how driveway configurations are critical site design considerations in assuring the safe flow of traffic.

> *"The flare or angle of ingress and egress on a driveway affects the speed at which a vehicle can enter from a roadway. The quicker the vehicle can turn off of the main road the less potential conflict with through movement vehicles on that road. However, too much angle lowers good sight lines to the left. Entry or exit with no flare or taper makes for the slowest entry and exit (right angle turn) and the greatest speed differential between the turning vehicle and vehicles already on the roadway. Driveway flare, turn radii and driveway width all come together to allow a smooth and safe movement onto or off of a roadway (see Figure 5-4)."* Michigan Department of Transportation, ***Reducing Traffic Congestion and Improving Traffic Safety in Michigan Communities: The Access Management Guidebook,*** October 2001, p 3-13.

Figure 5-4



Source: FDOT, *Basic Site Planning*, 1997.

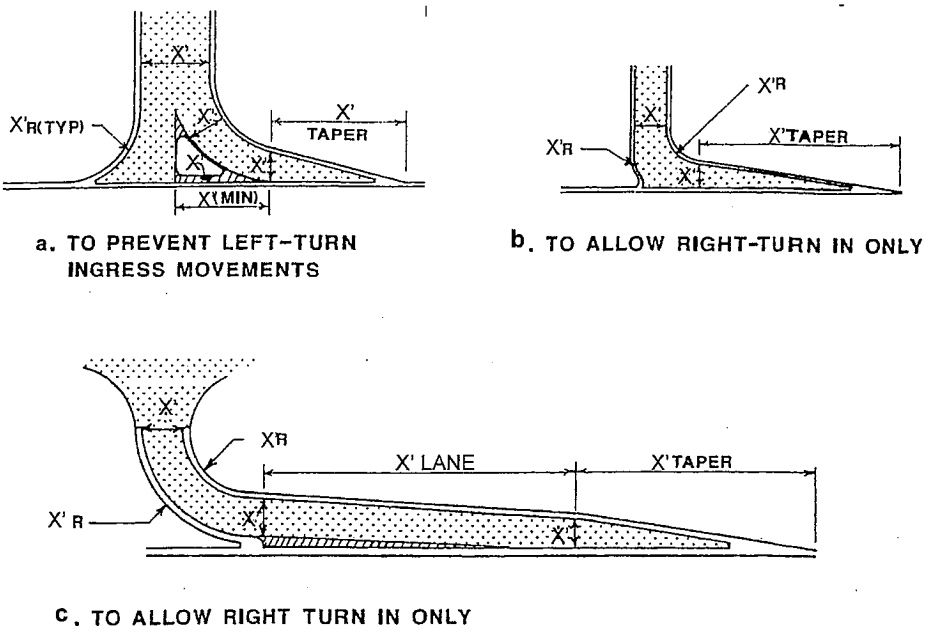
Driveway alterations can be a fairly inexpensive fix that provides a large benefit through reduction of crashes. Driveway alterations are recommended throughout the Lincoln Road and Ludington corridors. Recommendations should be made by the City and MDOT through the site plan review process at the time a permit is issued.

There is a lack of right-turn deceleration lanes on Lincoln Road which contributes to rear-end crashes as noted earlier. Right-turn deceleration lanes are particularly useful at commercial establishments with high traffic generation. A right-turn deceleration lane gets the turning automobile out of the through traffic lane. Getting the vehicle out of the through lane significantly reduces the rear-end crashes that occur because of drivers not reacting to vehicles slowing to make a right-turn. Photo 5-3 shows a commercial establishment on Lincoln Road that would benefit from a right-turn deceleration lane in addition to the small taper that already exists, similar to Figure 5-4b. Figure 5-4c. shows an example of a right-turn deceleration lane, which would allow drivers to get out of the through traffic lane sooner.

Photo 5-3: This photos shows a good location for a right-turn deceleration lane.

Figure 5-4

CHANNELIZATION ISLAND OPTIONS FOR CONTROLLING TURNS



a. TO PREVENT LEFT-TURN INGRESS MOVEMENTS

b. TO ALLOW RIGHT-TURN IN ONLY

c. TO ALLOW RIGHT TURN IN ONLY

Note: The dimension of X' is variable depending on site conditions, speed, number of vehicles and the design needs of the vehicles to use it.

Source: adapted by John Warbach, Planning and Zoning Center, Inc. from Delta Township, MI Zoning Ordinance. See also MDOT *Geometric Design Guide VII-680 and VII-650 series.*

Signage Treatments/Restricting Turns

Restricting turns into and out of establishments and/or streets can reduce crashes if particular movements are determined to be unsafe. Turns can be restricted through pavement markings, signs and modest traffic barriers. A common barrier used to restrict left-turn ingress movements is shown in Figure 5-4a.

The consultant team is recommending restricted turns at the 1st Ave North and Lincoln Road intersection. A small traffic island permitting right-in and right-out only is recommended to channelize traffic to turn right only onto Lincoln Road and to restrict turns from Lincoln Road onto 1st Ave North. The current unrestricted design is in a high crash area because vehicles back up beyond 1st Ave. North during waits for light changes at Ludington and Lincoln and then have a narrow "exit window" between light changes. The problem is exacerbated with all of the existing driveways in the immediate vicinity. An even safer, though less convenient alternative is to close off 1st Ave. North on each side of Lincoln.

Avoid Additional Curb Cuts

More driveways generally create more problems in areas that already have many driveways. For new developments, the city and MDOT should make an attempt if at all possible, to share existing driveways or side streets on Lincoln and Ludington. Also the zoning ordinance should provide for the following:

- Mixed use developments: mixed use can create the opportunity to link trips (grocery stores linked to office development, daycare, etc.) which reduces auto dependency and hence auto trips.
- Site plan review: review of site plans for new development and for expansion or alteration of existing uses can be used to identify opportunities for shared access with adjacent properties via shared driveways or connected parking lots and better design of existing driveways.

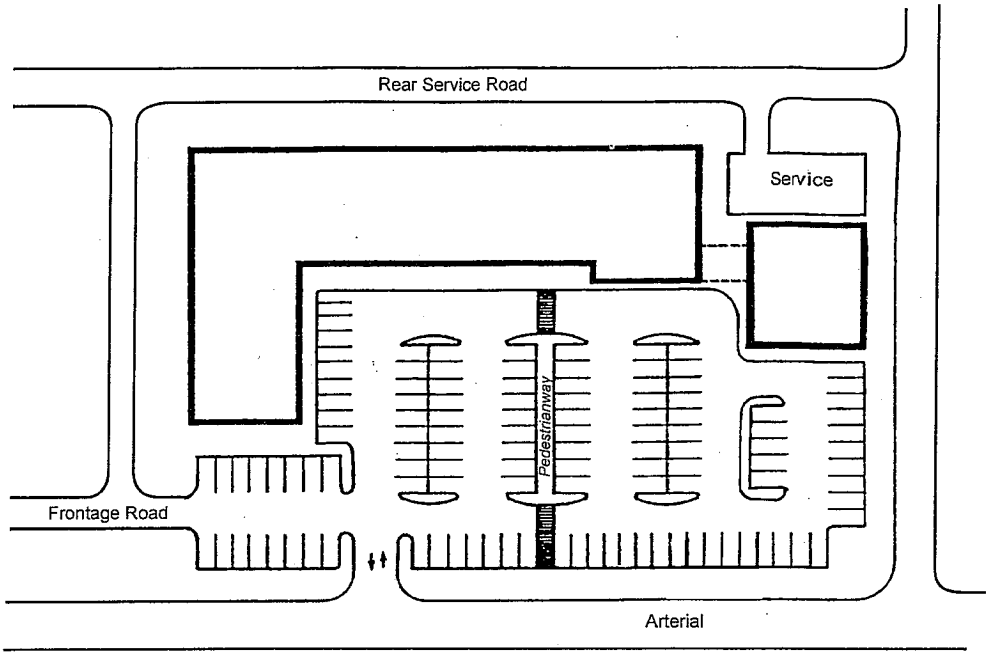
Front and Rear Access

Rear access between parcels can also aid connections between properties on a smaller scale. Rear access roads should be used whenever possible to more effectively move truck traffic around a commercial site and provide alternative access connections for automobile traffic between businesses. These connections can allow traffic to circulate between adjacent commercial properties without going onto the main arterial. See Figure 5-5 below which illustrates how rear access drives work.

The Wal-Mart, Kmart and mall area would benefit from rear access drives that would connect these large traffic generators. In the future when commercial development is planned, rear service drives should be required.

Frontage roads can also be utilized to connect properties for the same purpose as the rear drives—to keep traffic off of the main arterial (see Figure 5-5). However, frontage roads have come under some scrutiny, because they can create confusing turning movements, particularly with high traffic generation uses. Adequate space may also be unavailable for a frontage road. Frontage roads can be most effectively utilized with low traffic generators like residential and small office uses.

Figure 5-5



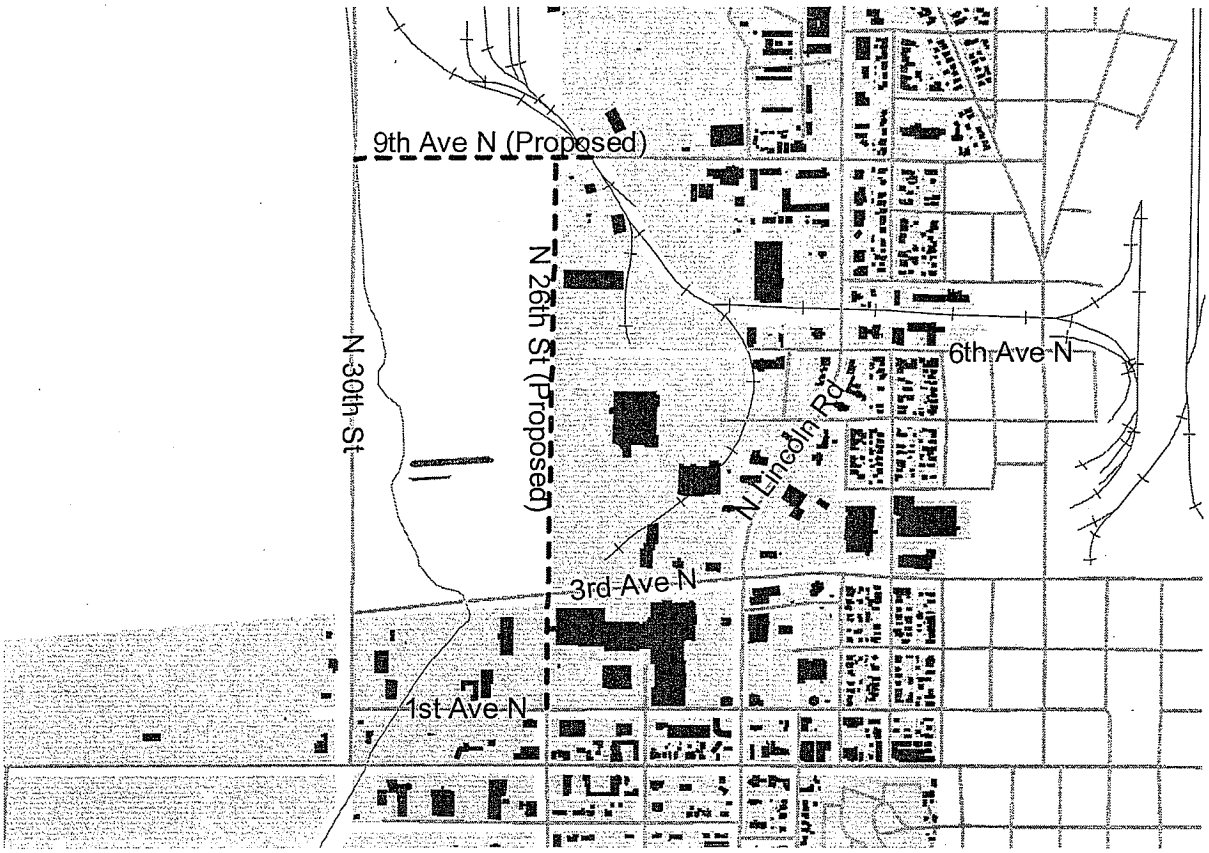
Source: adapted by John Warbach, Planning and Zoning Center, Inc. from Delta Township, MI Zoning Ordinance.

Improved Local Street Connections

Secondary streets can be a very effective means of access management because they keep vehicles off of the main roadway. For example, if better circulation existed between the commercial areas west of Lincoln Road there would likely be less crashes on Lincoln Road in this area.

The extension and connection of local streets west of Lincoln Road to 30th Ave. North south to 1st Ave North would allow some traffic to gain access to commercial businesses without making turns onto Lincoln Road. The consultant team recommends extension of 26th Street North from 1st Ave all the way to 9th Ave North. This would create another parallel option for north-south travel, it would link large commercial land uses in that area and it would open up more land to commercial development. The team also recommends the extension of 9th Ave North to 30th Street. This would provide another alternative for north-south travel. Both 26th Street and 30th Street have signals at Ludington to more safely channel traffic (see Map 5-1). These local streets are also proposed for extension in the *Comprehensive Plan* (see *Future Land Use Map*, Map 38a).

Map 5-1: Recommended Road Extensions



Constructing a Median

One way to improve traffic and safety on Lincoln Road and Ludington Street would be to improve roadway operations by separating opposing traffic lanes and eliminating left-turns into and out of driveways along the arterials. There are many benefits to median construction. *"Several operations studies have indicated that removing left-turning vehicles from the through traffic lanes reduces delays whenever the number of travel lanes is not reduced."*[1]

What are the Benefits of Medians?

- Safety
  - Fewer and less severe traffic crashes
  - Less auto/pedestrian conflict
- Efficiency
  - Greater vehicle capacity
  - Less stop and go traffic
- Aesthetics
  - More room for landscaping and pedestrians
  - More attractive corridors

[1] Gluck, J, Stover, V. and Levinson, H. National Cooperative Highway Research Program (NCHRP), Report 420: Impacts of Access Management Techniques, 1999, p.9.

Table 5-1 below indicates the average crash rates for three highway types according to average daily traffic volumes. Undivided roads with no turn lanes have the highest crash rates, roads with left-turn lanes improve the crash rate, but medians typically are ranked the safest because they remove many of the conflicting traffic maneuvers.

Table 5-1: Total crashes per mile per year on the basis of an average of seven crash prediction models

ADT	Undivided Highway	Two-Way Left-Turn Lane	Non-traversable Median
10,000	48	39	32
20,000	126	60	55
30,000	190	92	78
40,000	253	112	85

Source: National Cooperative Highway Research Program, Report 420, **Impacts of Access Management Techniques**, Washington DC, 1999.

Medians that allow limited direct left-turns have different effects on traffic patterns than medians which only allow U-turns. *"U-turns result in a 20 percent accident rate reduction by eliminating direct left-turns from driveways and a 35 percent reduction when the U-turns are signalized. However, indirect U-turns may require a median width of 40 to 60 feet at the intersections."*

Medians are very costly to construct because of the necessary right-of-way that is needed in order to get the proper turning radius to allow U-turns. Medians are difficult to construct in older urban areas because the original building setbacks are often not great enough to allow additional road right-of-way without significant demolition. It would be difficult and expensive for Escanaba or MDOT to acquire the right-of-way on Lincoln Road to construct a median with indirect U-turns. A median in the current left-turn lane would be the only option within the current right-of-way.

A median may be most advantageous between 3rd Ave. South to 5th Ave. South on Lincoln Road by the High School because of all the traffic crashes in the area. A median may also be effective on the southern end of Lincoln Road where the road curves at Lakeshore Drive in order to separate traffic. Left-turns would still need to be permitted at Lakeshore Drive.

Alternatives in Specific Segments

Lincoln Road: 14th Avenue North at Washington

For the Lincoln Road/14th Ave./Washington intersection (see Photo 5-4), the consultant team has proposed several options for redesign of the intersection.

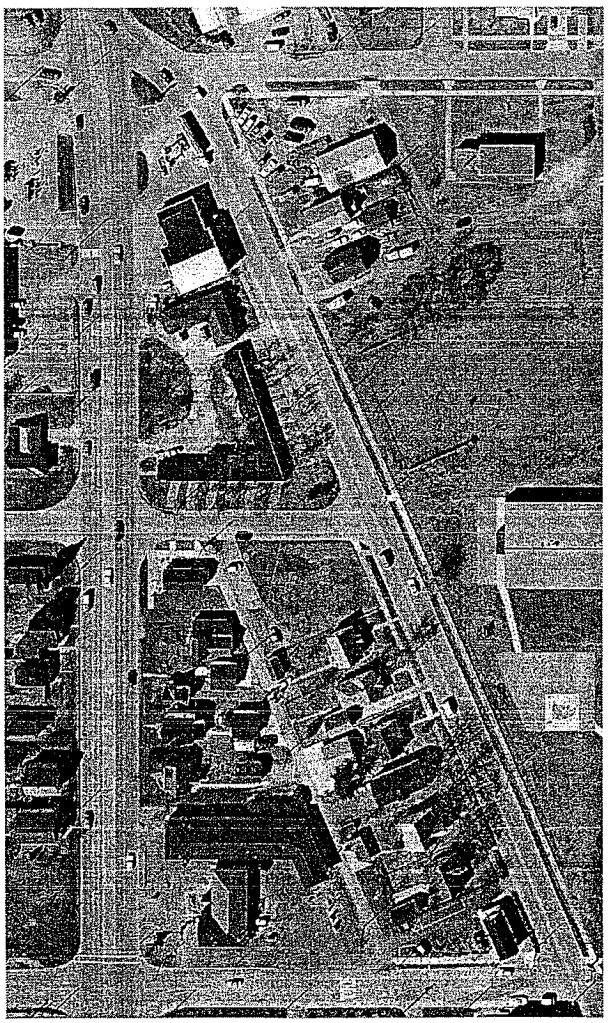
Overall suggestions for this area:

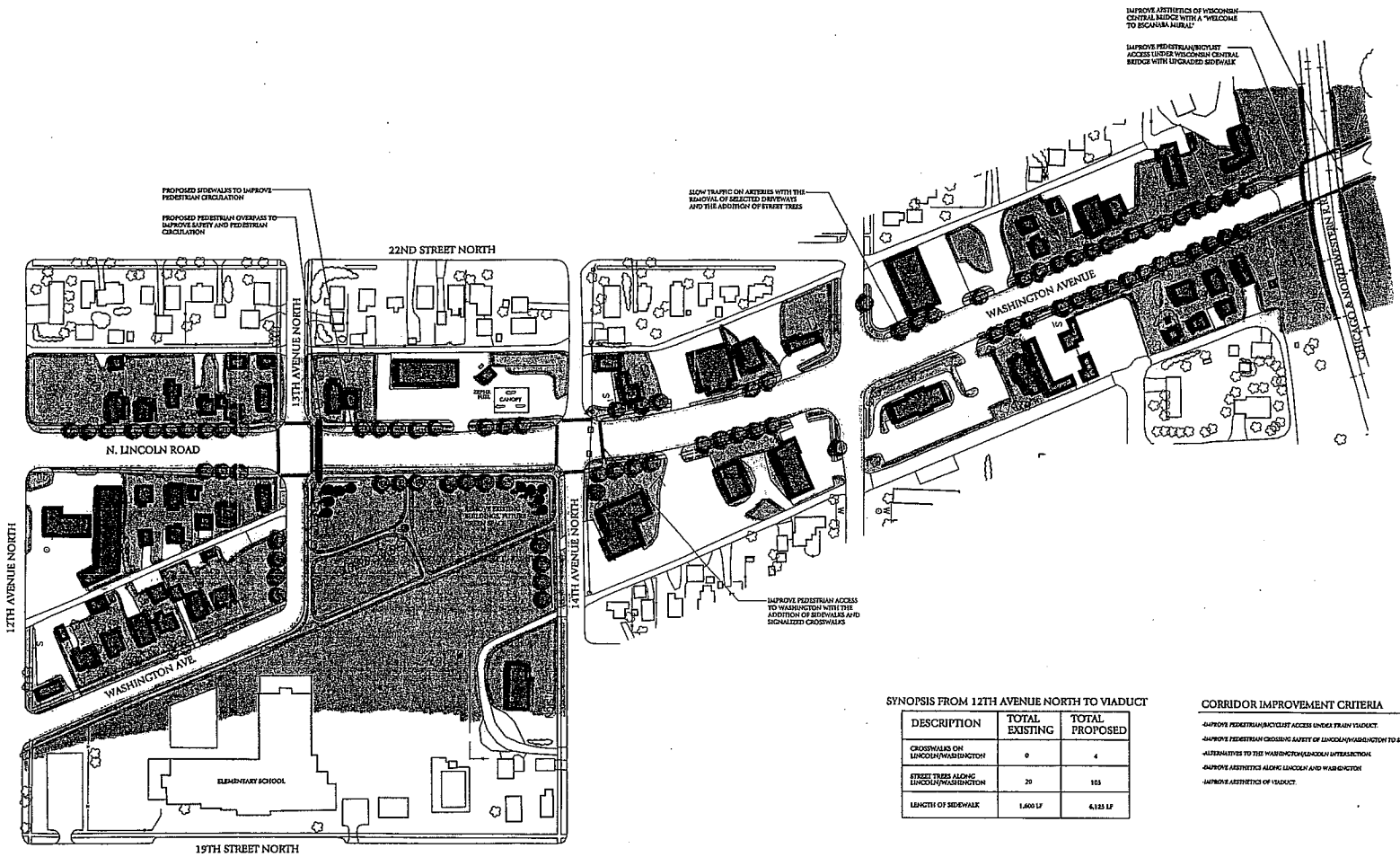
- The primary issue in this area is the lack of attention to the pedestrian. Students going to and from the elementary school have no designated crosswalk across

Lincoln Street. Continuous sidewalks should be added throughout the neighborhood (on both sides of Lincoln).

- A pedestrian overpass or signalized crosswalk (which would be a regular signal) should be constructed for pedestrian traffic crossing Lincoln Road, a pedestrian overpass being the more desirable option if the number of students served warrants it. If a signal meets warrant standards, the signal should be at the 14th Ave./Lincoln Road/Washington Street intersection and the overpass should be at 13th Ave. Alternatively, the signal could be at 12th Ave. where it would have the added benefit of helping direct traffic during the state fair.
- Despite the angular intersection and considerable cut-thru traffic, the 14th Ave./Lincoln Road/Washington Street intersection does not have a large number of crashes associated with it. This diminishes the need for reconfiguration. However, as the following options demonstrate, the opportunity to create a desirable entry into the city or to provide much needed housing (near a school) may add weight to the need to take action here.

Photo 5-4: The intersection of Lincoln Road, 14th Avenue, and Washington.





SYNOPSIS FROM 12TH AVENUE NORTH TO VIADUCT

DESCRIPTION	TOTAL EXISTING	TOTAL PROPOSED
CROSSWALKS ON LINCOLN/WASHINGTON	0	4
STREET TREES ALONG LINCOLN/WASHINGTON	20	103
LENGTH OF SIDEWALK	1,600 LF	6,125 LF

CORRIDOR IMPROVEMENT CRITERIA

- IMPROVE PEDESTRIAN/BICYCLIST ACCESS UNDER TRAIN VIADUCT.
- IMPROVE PEDESTRIAN CROSSING SAFETY OF LINCOLN/WASHINGTON TO SCHOOL.
- ALTERNATIVES TO THE WASHINGTON/LINCOLN INTERSECTION.
- IMPROVE AESTHETICS ALONG LINCOLN AND WASHINGTON
- IMPROVE AESTHETICS OF VIADUCT.

12TH AVENUE NORTH TO BRIDGE VIADUCT-OPTION 1

ESCANABA CORRIDOR STUDY

CITY OF ESCANABA, MARCH 2002

0 30 60 120 180 240

MAP 5-2

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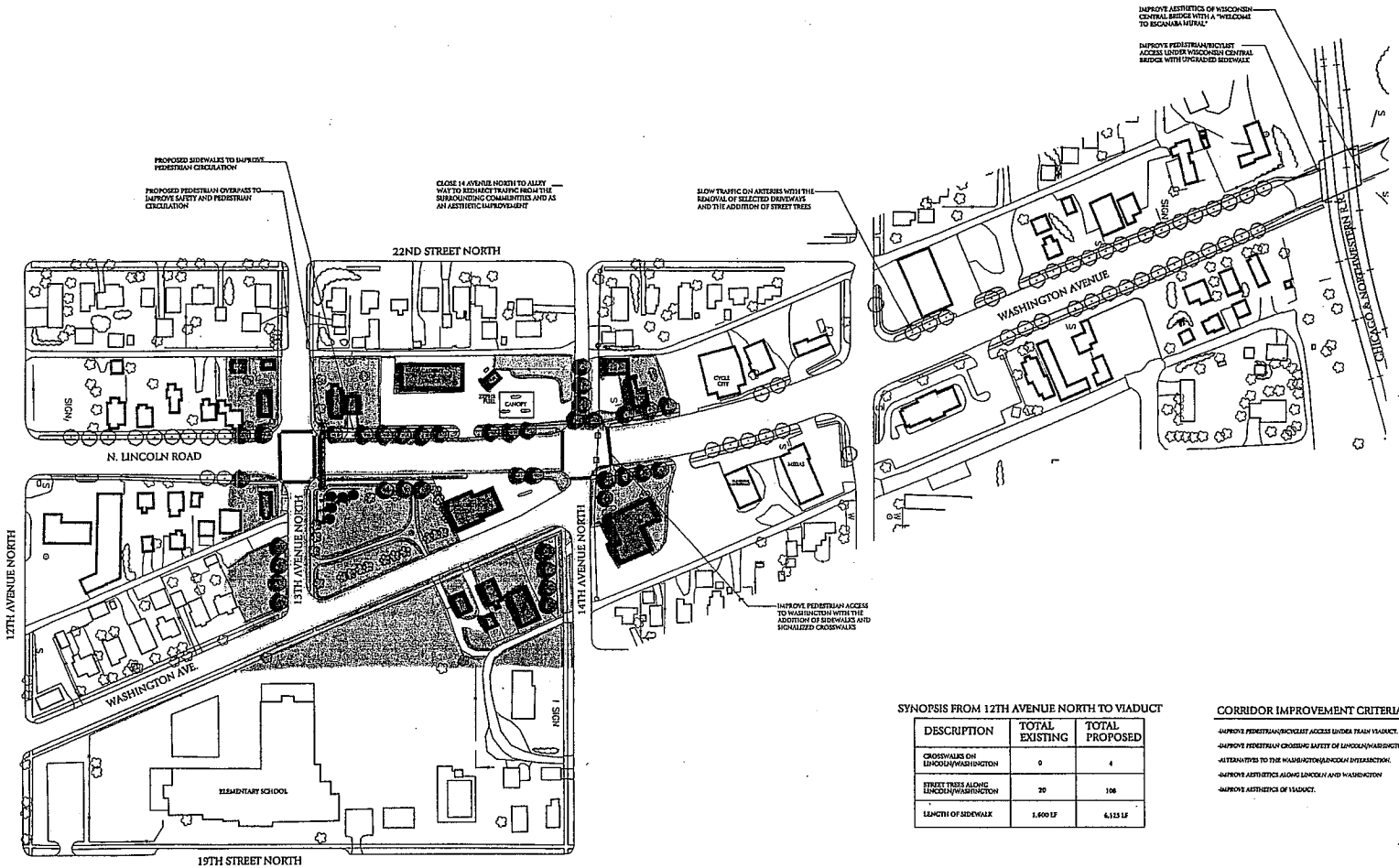

SYNOPSIS FROM 12TH AVENUE NORTH TO VIADUCT

DESCRIPTION	TOTAL EXISTING	TOTAL PROPOSED
CROSSWALKS ON LINCOLN/WASHINGTON	0	4
STREET TREES ALONG LINCOLN/WASHINGTON	20	108
LENGTH OF SIDEWALK	1,600 LF	6,125 LF

CORRIDOR IMPROVEMENT CRITERIA

- IMPROVE PEDESTRIAN/BICYCLIST ACCESS UNDER TRAIN VIADUCT.
- IMPROVE PEDESTRIAN CROSSING SAFETY OF LINCOLN/WASHINGTON TO SCHOOL.
- ALTERNATIVES TO THE WASHINGTON/LINCOLN INTERSECTION.
- IMPROVE AESTHETICS ALONG LINCOLN AND WASHINGTON
- IMPROVE AESTHETICS OF VIADUCT.

12TH AVENUE NORTH TO BRIDGE VIADUCT-OPTION 2

ESCANABA CORRIDOR STUDY

CITY OF ESCANABA, MARCH 2002

0 30 60 120 180 240

MAP 5-3

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Landscape Architecture Planning & Engineering

Option 1 – Complete Reconfiguration of Intersection

This option offers a complete reconfiguration of the area. The gas station and the motel would be removed allowing for open space to extend all the way from the Lincoln Road intersection to 13th Ave. Washington Street would be reconfigured to dead end into 13th Ave. A signal would be added at 14th Ave. to accommodate cars and pedestrians. A map of this redesign option is presented as Map 5-2.

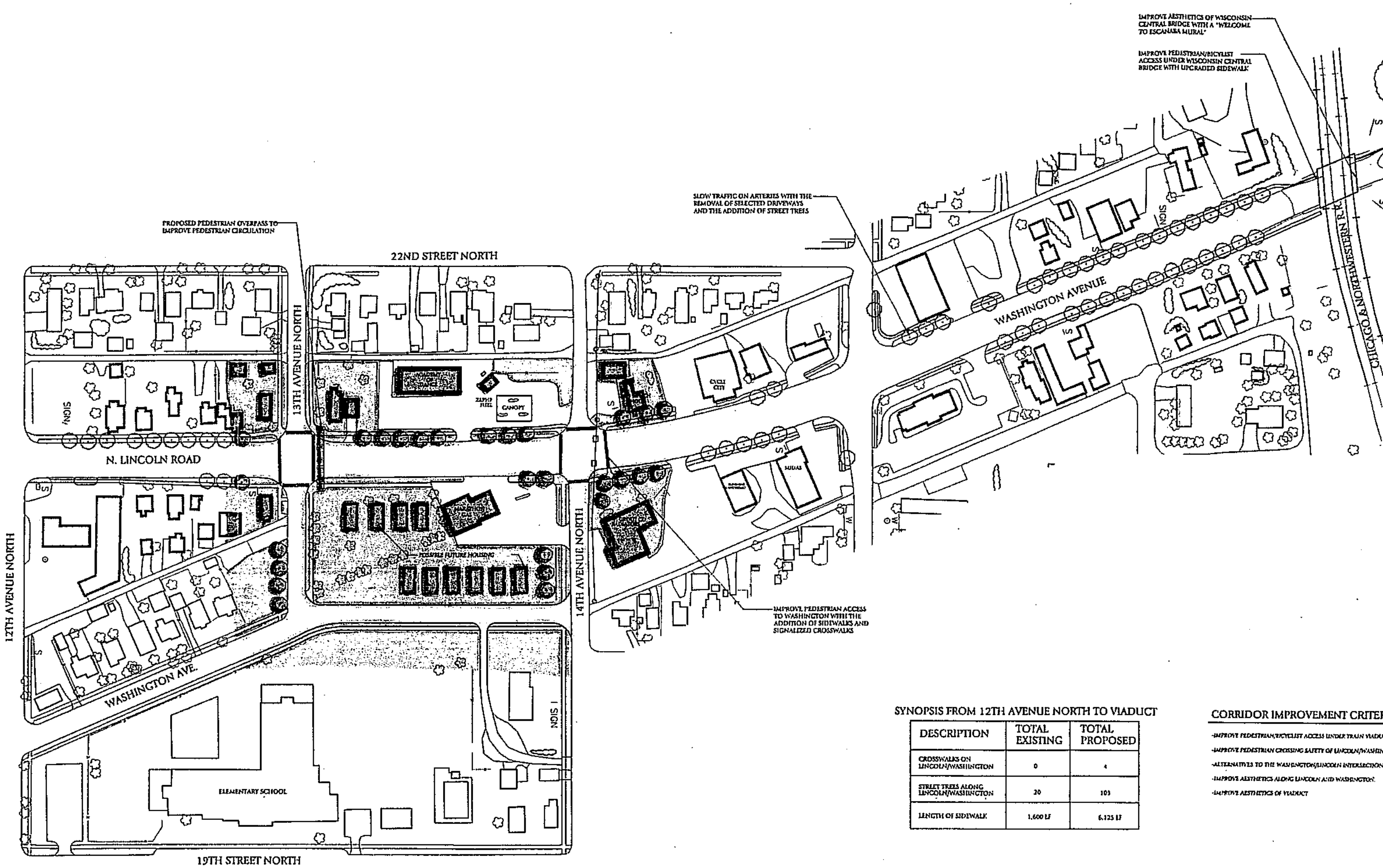
- This configuration eliminates a straight-thru connection for the mobile home park and the neighborhood immediately adjacent onto Washington.
- The light proposed at 14th Ave would not handle the new traffic diverted to 13th Ave. Also, the traffic crash data and volume data does not suggest that a light at this intersection is necessary under the current configuration.
- The suggested signalized crosswalk at 14th Ave. may not adequately handle students attempting to cross Lincoln Road that may "cheat" at 13th Ave. because it is a more direct route from the school. Also, signalized crosswalks which only operate when school is open are generally not as accepted by MDOT because drivers are conditioned to go though the intersection without stopping at other times.
- Students and cars would still need to be separated on 13th Ave.
- Removal of the gas station and buildings across the street (east) next to the school, is expensive, with possible contamination issues.

Option 2 – Removal of Many Existing Structures

Another option might be to remove all of the blighted motels (south of the gas station on Lincoln between 13th and 14th Avenues) and close off 14th Ave. on the west side of the street. A pedestrian overpass would be constructed at 13th Ave. In this scenario, the existing configuration of the 14th Ave. and Washington intersection could remain. All of the current restrictions on turning movements would also remain. The City could utilize the motel property as increased green space, a "Welcome to Escanaba" or neighborhood sign and/or landscaping, or new housing. This option is depicted in Map 5-3.

Option 3 – Partial Reconfiguration of Streets With Some Structure Removal

Another option is to reconfigure Washington Street to eliminate the angular connection at 14th Ave. In this scenario the gas station on the corner could be retained, but other buildings east of the gas station along 14th Ave. N. would need to be removed. At some point in time, a traffic light may be needed at 14th Ave. to handle left turning cars from 14th Ave. onto Lincoln Rd. Putting a light at 14th Ave would also allow straight-thru movements from east to west. The timing for establishment of a light would depend on conformance with MDOT warrant standards. Locating a light at 12th Ave. N. instead of 14th Ave. N. may be more effective, especially when the State Fairgrounds are actively being used. This option is depicted in Map 5-4.



SYNOPSIS FROM 12TH AVENUE NORTH TO VIADUCT

DESCRIPTION	TOTAL EXISTING	TOTAL PROPOSED
CROSSWALKS ON LINCOLN/WASHINGTON	0	4
STREET TREES ALONG LINCOLN/WASHINGTON	20	103
LENGTH OF SIDEWALK	1,600 LF	6,125 LF

CORRIDOR IMPROVEMENT CRITERIA

- IMPROVE PEDESTRIAN/BICYCLIST ACCESS UNDER TRAIN VIADUCT.
- IMPROVE PEDESTRIAN CROSSING SAFETY OF LINCOLN/WASHINGTON TO SCHOOL.
- ALTERNATIVES TO THE WASHINGTON/LINCOLN INTERSECTION
- IMPROVE AESTHETICS ALONG LINCOLN AND WASHINGTON.
- IMPROVE AESTHETICS OF VIADUCT

12TH AVENUE NORTH TO BRIDGE VIADUCT-OPTION 3

ESCANABA CORRIDOR STUDY

MAP 5-4

CITY OF ESCANABA, MARCH 2002

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Lincoln Road at 1st Street North

The Lincoln Road and 1st Ave. North intersection also has a high crash rate associated with it. Crash data suggests problems with rear-end and left-turn crashes. The area has numerous driveways within a short distance and it is also in close proximity to the Lincoln Road/Ludington signal. Traffic often backs up from the signal, creating problems for traffic attempting to turn at 1st Ave.

The consultant team suggests restricting turns at this intersection through the construction of a small traffic island, which would serve as a traffic channelization device, and signage. Traffic would be allowed to turn right-only in and out of 1st Ave. The consultant team also recommends minimizing driveways within this small area by utilizing the alley for access to businesses and sharing driveways. If restricted turns will not adequately improve the crash situation, 1st Ave. N. may need to be completely closed on each side of Lincoln. See Map 5-5. Analysis of detailed traffic counts in all flow directions should be performed before any final decision on traffic restricting designs is made.

Map 5-5 illustrates the potential that exists for reducing conflict points and adding landscaping for improved aesthetics along the corridor. Specifically, it depicts driveway consolidation, new landscaping, new sidewalks, and potential new building construction from Ludington St. to 9th Ave. N. See Chapter VI for a further description of alternative corridor aesthetic improvements.

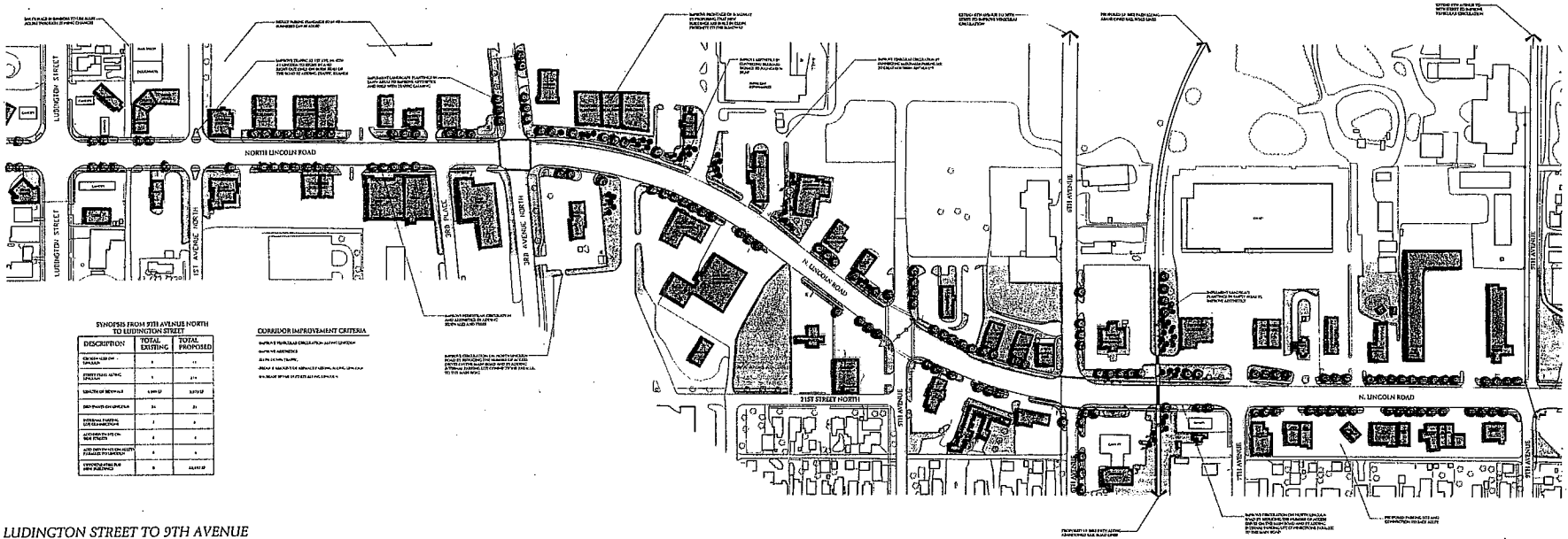
Lincoln Road at Ludington

The current configuration of the Lincoln Road and Ludington Street intersection consists of five lanes with dedicated left-turn lanes. The signalization at the intersection allows left-turners green time with a green arrow. Photo 5-5 shows an aerial view of the current configuration along with the adjacent businesses and their driveways.

The biggest safety problem at this intersection is created by the numerous driveways which are within close proximity of the signal. The three gas stations on the corners have frequent ingress and egress traffic which creates more of a problem. At a minimum, each gas station should only have one driveway on each street and it should be as far from the intersection as possible.

Another issue is the absence of right-turn lanes at this intersection, which may cause slow downs and rear-end crashes.

The consultant team suggests attempting to convert the gas stations to other uses overtime, which would have less auto traffic associated with them. In the meantime, the driveway configurations can be altered to restrict turning movements and improve safety. Businesses should utilize the alleys for access and rear parking should be redesigned to facilitate shared parking (especially at the restaurant on the SE corner). See Map 5-5. If



SYNOPSIS FROM 9TH AVENUE NORTH TO LUDINGTON STREET

DESCRIPTION	TOTAL EXISTING	TOTAL PROPOSED

CORRIDOR IMPROVEMENT CRITERIA

LUDINGTON STREET TO 9TH AVENUE

ESCANABA CORRIDOR STUDY

CITY OF ESCANABA. MARCH 2002

MAP 5-5

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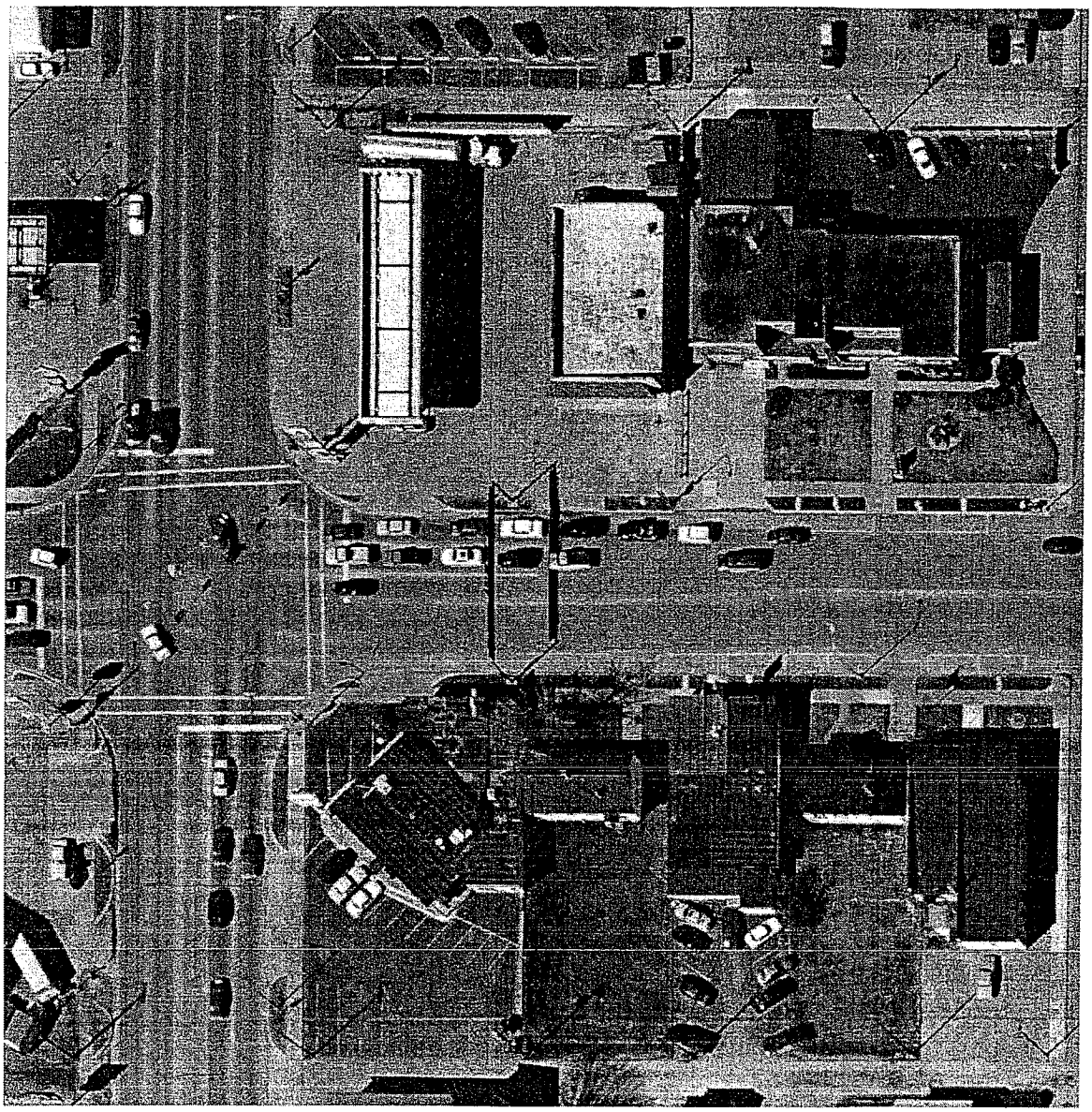
possible, right-turn lanes should be constructed at this intersection to allow right-turn traffic to move out of the through lanes.

Photo 5-5: This aerial photo depicts the Lincoln Road and Ludington intersection.



Lincoln Road: 5th Ave South

The 5th Ave. South intersection near the high school had a signal added in 1995, at about the same time the road was widened. However, according to the crash data presented earlier, there are still significant problems at this intersection. One obvious problem is the continued existence of the original street. The street was realigned several years ago to line up with the other side of the street. However, the original street remained open.

These two streets are too closely aligned to allow for safe turning movements. Also the existence of the two roads is confusing to drivers.

The recommendation is to close off the original 5th Ave. South (now called 6th Ave. S.) to traffic all together, and provide the church, which is located south of 5th Ave. S. direct access to 5th Ave. S. and the light. Landscaping could be provided in the closed off area.

Another reason for the high crash rate near the high school may be the existence of numerous inexperienced drivers. A separate study may need to be conducted regarding the traffic circulation in and around the high school, which may be creating some problems during peak use times (i.e. lunch traffic, football traffic, etc.). As mentioned earlier, a median in front of the High School may also be useful to both slow traffic and channel turns at the light. See Map 5-6.

Map 5-6 also depicts proposed driveway consolidations and new landscaping from 8th Ave. S. to Ludington. See Chapter VI for a fuller description of proposed aesthetic improvements in this area.

Chapter VI

AESTHETIC IMPROVEMENT ALTERNATIVES

Introduction

As the central spine through Escanaba, Lincoln Road has a high profile. The corridor stretches the length of the city and acts as the Central Business District. Despite other positive attributes of Escanaba, the strongest impression of the city is formed here where fragmented, strip development and auto-oriented land uses predominate. Few trees line the street, and an overabundance of signs detract from the overall visual appeal of the corridor. Alternatives for aesthetic improvements seek to better reflect the character of Escanaba and create a corridor more welcoming of pedestrians as well as businesses. To this end, the objectives of the aesthetic improvements are as follows:

1. To mitigate the scale and auto-oriented focus of the corridor.
2. To reduce the visual impact of the competing commercial signage.
3. To "soften" the built environment with landscaping and reduce the amount of bituminous pavement where possible.

Different improvement alternatives are suggested for specific sections of the corridor, with some key elements used throughout. Street trees, for example, are suggested along most of the length of the corridor. To the extent possible, indigenous plants should be used for street trees and right-of-way plantings. Species native to northern Michigan are better adapted to the ecological context of the city, and help to define the character of the place. A more in-depth discussion of the types of native plants suggested appears at the end of this chapter.

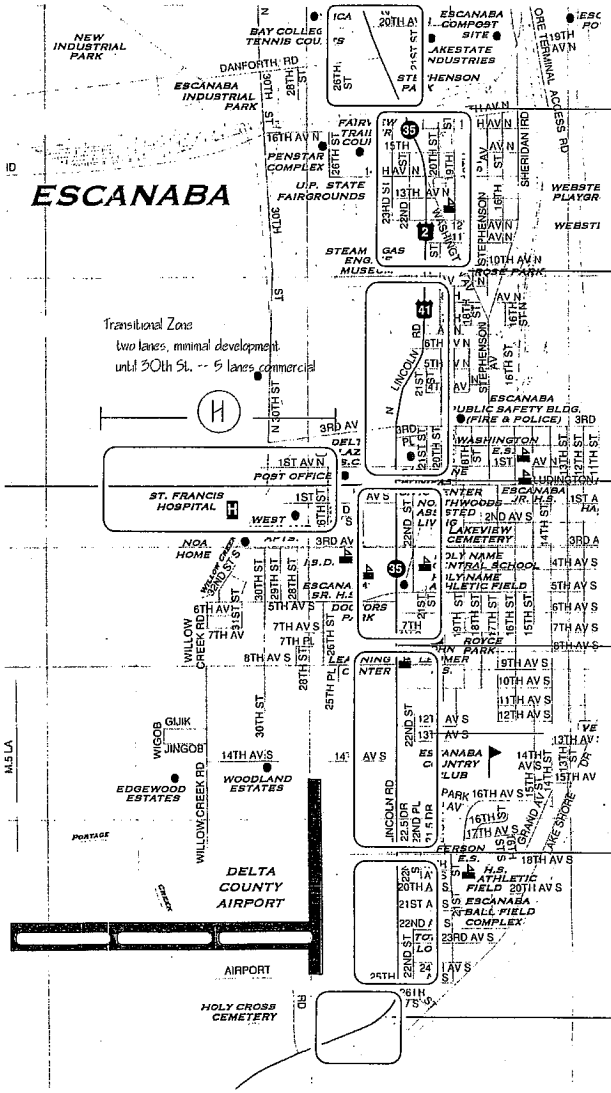
Also suggested throughout the length of the study area is new lighting. Decorative roadway lighting will give the street more visual appeal, and pedestrian-scale lighting will provide comfort to sidewalk users.

Changing the type of commercial signs used along Lincoln Road will greatly enhance the aesthetics of the corridor. The reduction in size and number of commercial signs and billboards is recommended throughout the length of the corridor. One way to decrease the visual impact is to convert tall pedestal-style signs to lower, foundation-style signs, and replace any old or unsafe signs immediately.

Other suggested improvements are specific to individual sections along the corridor. Following is a discussion of the recommendations for each section. The designated letter corresponds with the illustrated map (Map 6-1) on the following page.

Aesthetic Improvements

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Streetscape Amenities:								
Pedestrian Scale Lighting				✔				
Decorative Roadway Lighting		✔	✔		✔	✔		
Screen Walls					✔			
Foundation Signage					✔		✔	✔
Other Improvements:								
Street Trees		✔	✔	✔	✔	✔	✔	✔
Welcome Mural						✔		
Welcome Sign	✔							✔
Continuous Sidewalk	✔		✔	✔	✔	✔		
Landscaped/Grass Panels				✔	✔			
Reduce Pavement (by converting some parking to new retail uses)					✔	✔		



(G) Divided Median with R.O.W. Landscaping

Wisconsin Central Bridge

(F) Single Family Residential
five traffic lanes
fragmented sidewalks

9th Ave. N.

(E) Big Box Commercial Zone
five traffic lanes
extensive parking lots
fragmented sidewalks
high intensity of signs

Ludington Street

(D) Commercial, Institutional
five traffic lanes
some underutilized land
large individual parcels

8th Ave. S.

(C) Residential
four traffic lanes
sidewalks on west side only

18th Ave. S.

(B) Minimal Development
four traffic lanes
some vacant parcels

Lakeshore Drive

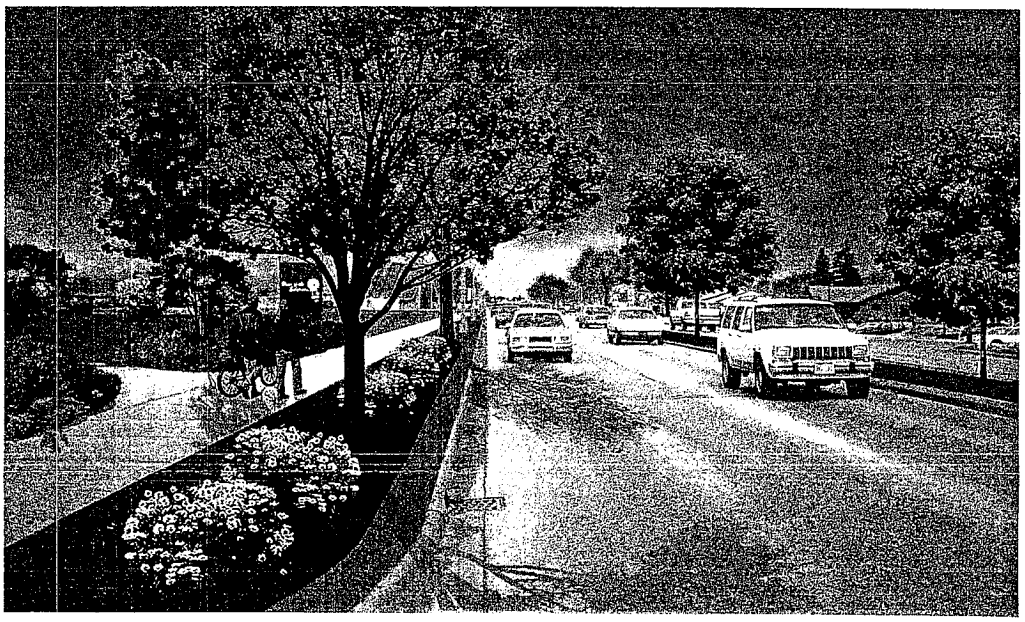
(A) Rural Zone
entrance into city

B R
Beckett&Raeder
Landscape Architecture
Planning & Engineering

PLANNING & ZONING CENTER, inc.
715 Cedar St., Lansing, MI 48906

Lincoln Road Corridor Study
Escanaba, MI

Lincoln Road at Escanaba Senior High School



Simulation Showing Proposed Improvements
Including the addition of a median with ash trees
and right -of -way landscaping with native plants

Roadway Descriptions by Section

Section A extends from the south city limits to Lakeshore Drive. Generally rural in character, this area includes some single-family homes on large lots as well as the Delta County Airport. This section is the gateway into the Central Business District for those entering from the south. As such, the suggested aesthetic improvements include:

- Adding a welcome sign with landscaping, to be located on the east side of Lincoln Road as it curves at Lakeshore Drive;
- Maintain the natural vegetation that already lines much of this segment;
- Implement sidewalks as new development occurs.

Section B stretches from Lakeshore Drive north to 18th Ave. South. This area is the transition from the rural surroundings to the beginning of development. This section has minimal development, with some vacant land. The following aesthetic improvements are suggested:

- Add street trees that build on the surrounding natural character of the area and begin to define a "sense of place" for the corridor;
- Incorporate decorative roadway lighting;
- Add a sidewalk on the east side of Lincoln to facilitate movement and promote pedestrian use of the corridor.

Section C begins at 18th Ave. South and extends to 8th Ave. South. At this point, Lincoln Road is four-lanes wide with a sidewalk on the west side only. The area is generally residential in land use with some large parcels of open space. Aesthetic improvements include:

- a continuation of street tree plantings;
- the addition of decorative roadway lighting; and
- a continuation of sidewalks on the east side of Lincoln.

Section D extends from 8th Ave. South to Ludington Street. The predominant land use in this section is the Escanaba Senior High School, with large-lot residential uses and some commercial uses closer to Ludington Street. Here, Lincoln Road is five-lanes wide and difficult for pedestrians to cross. Therefore, as-mentioned in Chapter 5, a median is recommended in front of the high school to limit left turns, slow traffic and facilitate safe crossing for students. In addition to these benefits, a median would significantly enhance the visual appeal of this section of the corridor. (See Photo Exhibit 6-1 on the following page.) Other aesthetic improvements include the following:

- Incorporate street trees to help calm traffic;
- Provide additional cross-walks, specifically at the intersection of Lincoln and 5th Avenue South;
- Provide pedestrian-scale lighting along the sidewalk;
- Implement landscape plantings, using native plants. The front of Escanaba Senior High School is an ideal spot to begin to capture the character of Escanaba through the use of indigenous landscape plants.

The following table provides a synopsis of the suggested improvements. Map 5-6 in Chapter 5 illustrates the aesthetic improvements in conjunction with traffic-safety improvements.

Synopsis of Physical Improvements for Section D.

Description	Existing	Proposed
Number of crosswalks	0	7
Street Trees	42	206
Length of Sidewalk	4,839 lf	6,800 lf

lf = linear feet

Section E begins at Ludington and continues up Lincoln to 9th Ave. South. Along with several small businesses, this section is characterized by the "big box" commercial uses, such as the K-Mart. As such, commercial signs are extensive, and an abundance of driveways and parking lots exist, fragmenting sidewalks and offering little in the way of visual relief. This segment is most in need of elements to enhance the visual appeal of the streetscape. Traffic safety improvements go hand-in-hand with the aesthetic improvements, and are therefore presented together in the following criteria for improvement of this section of the corridor.

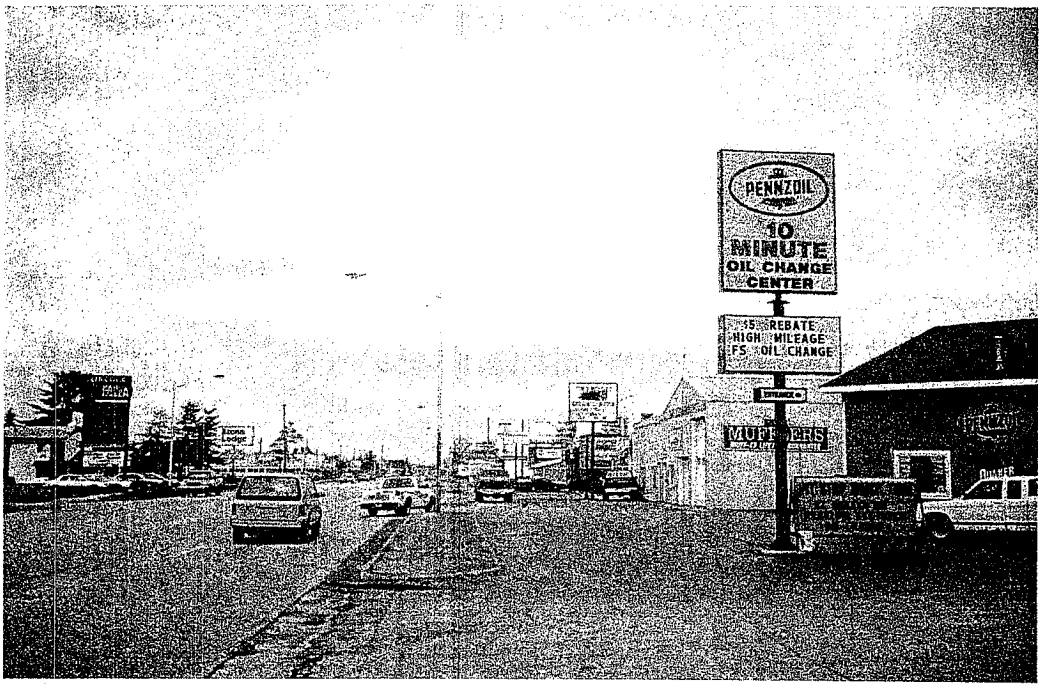
1. Improve aesthetics along street corridor.
2. Slow traffic.
3. Reduce the size of paved parking lots along Lincoln Road.
4. Increase the opportunities for new retail establishments.
5. Provide better safety and access for pedestrians.

One way to increase the appeal of the corridor is to decrease the amount and size of competing signs. Foundation-style signs should be used instead of pedestal signs. Some variation can be allowed, but all commercial signs should have height and size requirements. Photo Exhibit 6-2 on the following page illustrates how existing signs could be converted to foundation-style signs, allowing visibility for businesses while providing visual relief to drivers. Additional improvements include the following:

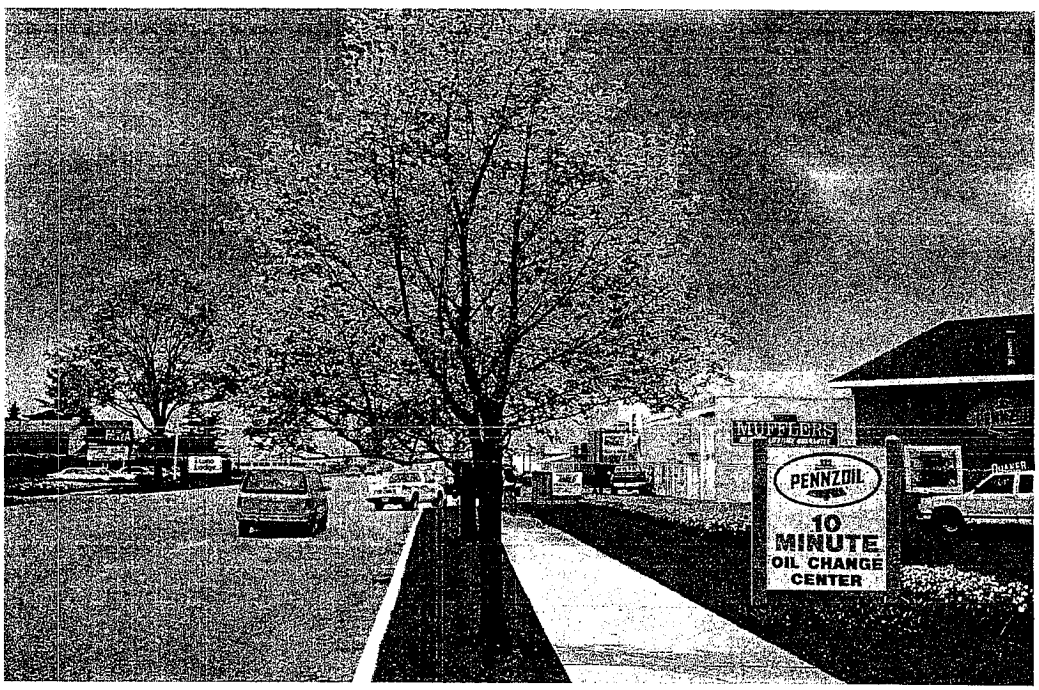
- Improve frontage of roadway by adding new buildings in close proximity to the roadway. This could be accomplished in the K-Mart parking lot by replacing a portion of the front parking lot with new retail buildings intermixed with landscaping along the roadway.
- Implement landscape plantings in lawn areas to improve aesthetics and help with traffic calming;
- Provide continuous sidewalks and street trees along Lincoln Road;
- Incorporate lawn panels along both sides of the street to provide a planted buffer between the sidewalk and street;
- Include decorative roadway lighting.

Map 5–5 in Chapter 5 illustrates the suggested improvements for this section.

Lincoln Road Corridor Study
Escanaba, MI



Lincoln Road Between 5th and 6th Ave. N.



Simulation Showing Proposed Improvements
Including driveway closures, conversion to foundation signs, and the addition of grass panels, landscaping, street trees and a continuous sidewalk.

Synopsis of Physical Improvements for Section E.

Description	Existing	Proposed
Number of crosswalks	4	10
Street Trees	5	174
Length of Sidewalk	4089 lf	5973 lf
Driveways	54	23
Internal Parking -- Lot Connections	2	6
Driveways on side street	0	4
Driveways on alleys parallel to Lincoln	0	4
Opportunities for new buildings	0	63,452 sf

Section F extends from 9th Avenue N. to the Wisconsin Central Bridge. This section is characterized by a mix of single family homes on small lots, some auto service uses and a few older motels. The Webster Elementary School lies just east of the corridor, off Washington. Lincoln Road changes names to Washington Avenue where the two streets merge. Finally, at the north end of this segment the road passes under the railroad viaduct. Criteria for improvements in this section include:

1. Provide safe pedestrian crossing of Lincoln and of Washington near the elementary school.
2. Propose alternatives to Washington/14th/Lincoln intersection.
3. Improve aesthetics along Lincoln, and especially at the railroad viaduct.
4. Improve pedestrian and bike access under the railroad viaduct.

Three separate alternatives proposed for this section of roadway and presented below, meet these criteria.

Option 1 – Lincoln Road at Washington Avenue

This option suggests closing Washington Avenue between 13th and 14th Ave. N. and providing a pedestrian walkway in place of the street. In conjunction with the closure, the plan suggests relocating the existing Marathon Gas Station and removing the blighted motels, opening up the land for a green space adjacent to the pedestrian walkway. In addition, this option includes the following improvements:

- Better pedestrian access to Washington with the addition of sidewalks and signalized crosswalks;
- A pedestrian overpass at Lincoln and 13th Ave. N. provides added safety and better circulation;
- Slower traffic on Lincoln with the addition of street trees;
- Removal of selected driveways and connecting business parking lots;
- a "Welcome to Escanaba" mural at the railroad viaduct;
- Improved pedestrian/bicyclist access the viaduct with an upgraded sidewalk.

Map 5-2 in Chapter 5 provides an illustration of these aesthetic recommendations together with traffic safety improvements.

Synopsis of Physical Improvements for Section F, Option 1.

Description	Existing	Proposed
Crosswalks- Lincoln \ Washington	0	4
Street Trees	20	103
Length of Sidewalk	1600 lf	6125 lf

Option 2 – Lincoln Road at Washington Avenue

Instead of closing Washington Avenue, this option suggests closing 14th Ave. N. on the west side of Lincoln, between Lincoln and the alleyway. This will eliminate the "blind" intersection for cars traveling from the west side of 14th turning onto Lincoln. Closing the street has the additional benefit of creating a pedestrian mall for safe travel. Improvements to the railroad viaduct, sidewalks and streetscape proposed in Option 1 also apply for this alternative and can be seen in **Map 5-3** in Chapter 5.

Synopsis of Physical Improvements for Section F, Option 2.

Description	Existing	Proposed
Crosswalks- Lincoln \ Washington	0	4
Street Trees	20	108
Length of Sidewalk	1600 lf	6125 lf

Option 3 – Lincoln Road at Washington Avenue

This alternative proposes all of the improvements of Option 1 including additional street trees, continuous sidewalks and bridge improvements. However, this alternative changes the orientation of Washington Street between 13th and 14th Avenues to enter 14th at a 90° angle. This change brings Washington further away from the intersection of Lincoln and 14th,decreasing the number of access points and increasing safety for pedestrians and vehicles.

Map 5-4 in Chapter 5 shows these improvements and intersection reconfiguration.

Synopsis of Physical Improvements for Section F, Option 3.

Description	Existing	Proposed
Crosswalks- Lincoln \ Washington	0	4
Street Trees	20	103
Length of Sidewalk	1600 lf	6125 lf

Section G extends from the railroad viaduct north to the city limits. This section is a mixture of wholesale, retail and highway service land uses, along with the Bay de Noc Community College. Most of this stretch of Lincoln is a four-lane highway, divided by a boulevard. Improvements will be minimal, but include:

- Providing a continuation of street trees;
- Converting commercial pedestal-style signs to foundation-style signs.

Section H follows Ludington Street from Lincoln to the west city limits. This section is characterized by commercial development and five lanes of traffic up until 30th Street N., where it transitions to a two-lane highway with minimal development. Suggested improvements include:

- Providing a welcome sign at the gateway to the city;
- Providing a continuation of the street trees;
- Converting commercial pedestal-style signs to foundation-style signs.

Suggested Native Plants

There are at least two important reasons to incorporate native plants in landscaping the Lincoln Road Corridor. First, local species are more adapted to local climatic conditions and therefore, fit better into the overall ecological context of the area; and second, native plants can help create a sense of place by mimicking the local "ecosystems" and, in effect, extending the surrounding natural beauty into downtown.

Provided by a recent Escanaba arborist, James Lempke, the following themes are derived from surrounding landscapes and are followed by a list of associated plant species.

1) "Oak/pine Openings"
Envisioned for the high school grounds, this is the primary model inspired by the sandy, lake plain adjacent to the lakeshore.
Species include: Red oak, Hill's oak, serviceberry, sumac, bush honeysuckle (Diervilla), Hawthorne, sand cherry, sweet fern, blueberry, hazelnut, little bluestem, sedges, blazing star, black-eyed Susan, coreopsis, evening primrose, and others that
capture the spirit of this theme.

2) "Lake Michigan shoreline"
Sand dunes were the inspiration for this model.
Species include: Beach grass, wild roses, shrubby cinquefoil, creeping juniper, silverweed, etc. These can be used in small areas that are exceedingly sandy.

3) "The Juniper Landscape"
Small alvars in the area on limestone pavement inspired this theme.

Species include: Juniperus communis, J. horizontalis, and many of the low-growing grasses and wildflowers from the oak openings. These plants are suggested for use in the right-of-way near the railroad viaduct.

Due to relatively heavy snowfalls that can be expected in Escanaba, and the subsequent use of salt as an ice deterrent, plants used along the roadway need to be salt tolerant. Little information exists that rates the salt tolerance level for native herbaceous plants. However, based on initial screening by Escanaba's arborist, many of the above species have exhibited tolerance to salt, with the exception of Coreopsis and Black-eyed Susan. Any future landscape plans for Lincoln Road should be based on the above landscape themes and carefully chosen for salt tolerance.

Chapter VII

THREE-DIMENSIONAL MODELS WITH CommunityViz

Introduction

To better visualize the alternatives for improving the traffic management and aesthetic characteristics of the Lincoln Road Corridor, the consultant team developed a series of three-dimensional (3-D) models using the land use planning and modeling computer application, CommunityViz©. Developed by the Orton Family Foundation, this software provides for the creation of scaled models of limited areas for consideration and review as computer generated displays. This application gives the expert user the ability to combine properly scaled digital maps with a model of earth's surface elevations and physical features within a limited area of a community or region. CommunityViz was used by the consultant team to better visualize recommended alternatives and communicate the "look and feel" of these alternatives to local officials and residents.

This section briefly reviews the 3-D model results and provides several illustrations derived from CommunityViz as "computer screen-captures" and displayed as still images. A more complete collection of illustrations, including videos depicting a "drive through" vision of these alternatives in presented on the City of Escanaba's web site, found at www.littlebaydenoc.us.

CommunityViz Process

LIAA used CommunityViz to develop models for sections of the corridor consistent with the recommendations provided in previous chapters. The models developed focus on two specific areas of the corridor that represent most of the problems and opportunities encountered in the Lincoln Road corridor.

To begin developing these models, LIAA started with detailed digital maps of the area including the building outlines or *footprints*. Numerous digital orthophotographs of the corridor were joined together to create a seamless scaled image within ESRI's ArcView GIS program. The mapped locations of key infrastructure such as streetlights, parking lots, and curbs were also integrated into the GIS data set. Additionally, a digital elevation model was created and integrated into the total data set, providing specific topographic information. CommunityViz uses all of this information to support the creation of 3-D models as an add-in software component or *plug-in* to the ArcView GIS program.

The GIS map layers provided the locations for the placement of 3-D model elements such as representative buildings, signs, automobiles, and landscaping. With all the digital data integrated in an accurate mapping environment, the 3-D model elements were placed where they appeared in the orthophoto on the day the aerial photograph was taken in 1999. This allowed the creation of a 3-D model of conditions at that time; conditions that are very similar to what exists today. This *current condition model* was then altered by rearranging or replacing elements according to the different scenarios described in this *Corridor Plan*.

Models of Alternatives for Lincoln Road at Washington Street

The most concentrated physical change discussed in this Corridor Plan focuses on the Lincoln Road corridor at Washington Street and 14th Avenue. Responding to many concerns voiced by residents and local officials, the consultant team studied ways in which a number of desirable changes could be accomplished at this location to provide much greater pedestrian safety, increase traffic safety, improve access management, and substantially improve the aesthetic character of this primary entrance to the City of Escanaba.

The consultant team developed three alternatives for restructuring this complex intersection to achieve the desired objectives. These Options and their implications are detailed in Chapters V and VI, including the presentation of street maps that indicate three options for improved street designs. The 3-D models developed in CommunityViz offer different perspectives of these options. This software allows the computer user to move through this modeled space at different elevations as walking or flying through the scene.

As demonstrated at public meetings during the development of this *Corridor Plan*, these computer-generated models can be helpful in more fully visualizing potential changes to the physical environment. To support future discussions of these various options, brief sequences of movement through the three models have been saved as animated video clips. The animations can be viewed on the Internet through the Little Bay de Noc website (www.littlebaydenoc.us) or using transferable media such as a CD-ROM.

The following images are computer screen views captured to depict several different views of each of the three options described in this Corridor Plan. A brief summary of key elements in the view is provided with each graphic. Of course, such graphics are only an aid to visualization and discussion. While such 3-D models can be very helpful in thinking through the costs and benefits of such major changes, no model can be used as the final plan. Detailed engineering plans and drawings would be needed to fully and accurately assess the costs of such substantial changes.

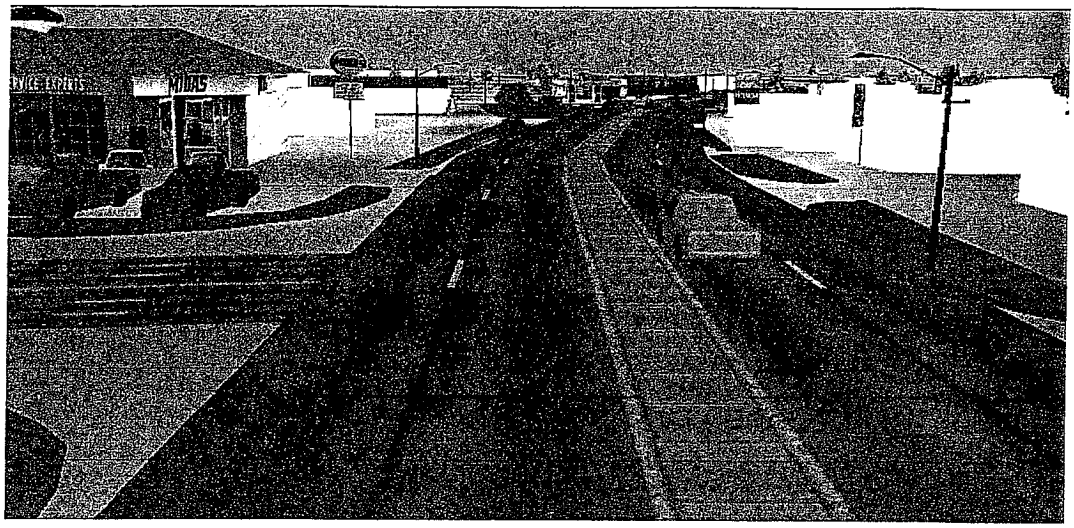


Figure 7-1. This model view shows the appearance of the corridor under current conditions looking south along Lincoln Road just north of 15th Avenue.

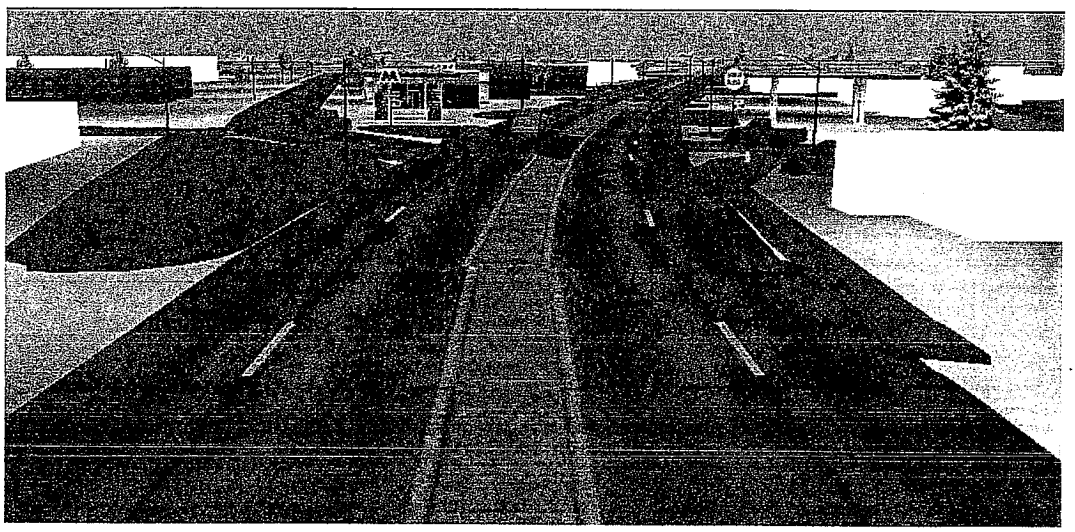


Figure 7-2. This view is the general appearance of the corridor looking south near the 14th Avenue and Washington Street intersection on Lincoln Road.

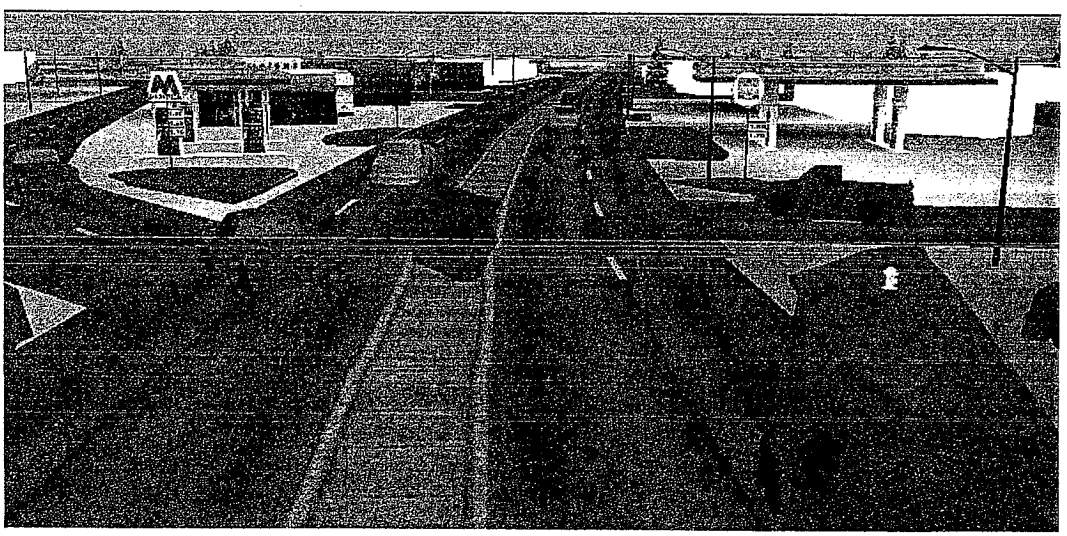


Figure 7-3. This is the model's depiction of the area just past the intersection of Lincoln Road with 14th Avenue.

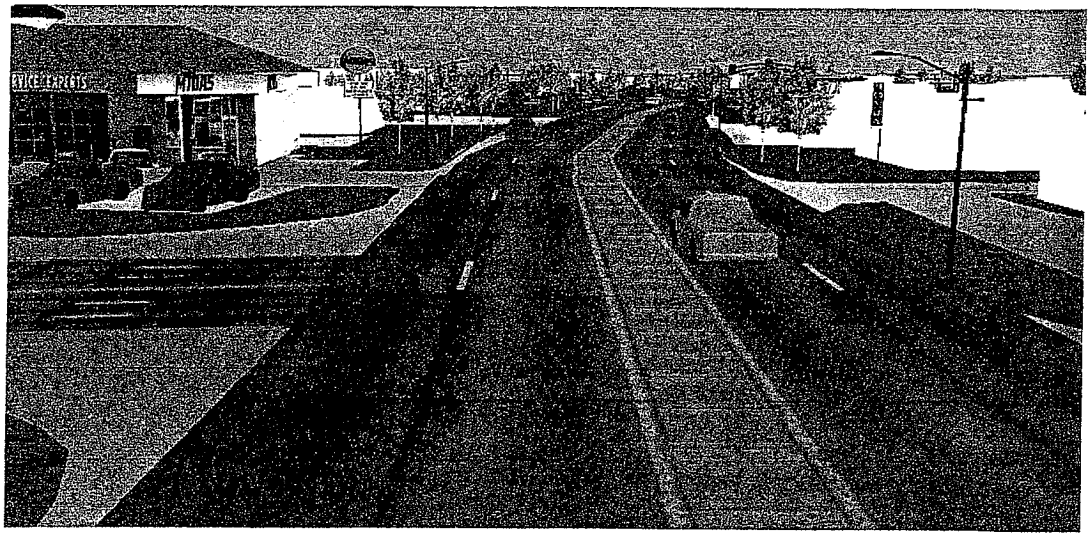


Figure 7-4. This model view shows the appearance of the corridor under Option 1 looking south along Lincoln Road just north of 15th Avenue.

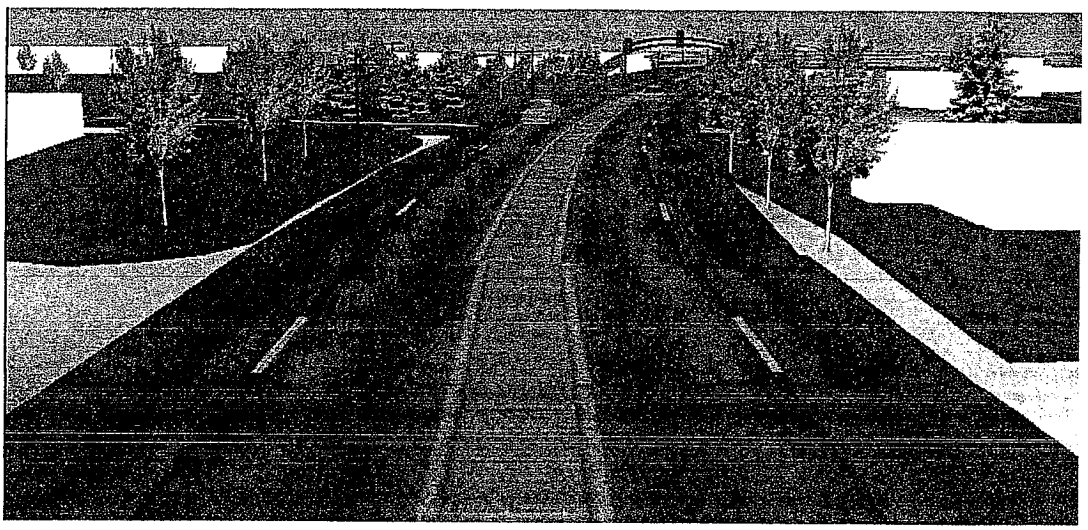


Figure 7-5. This view is Option 1 looking south near the 14th Avenue and Washington Street intersection on Lincoln Road.

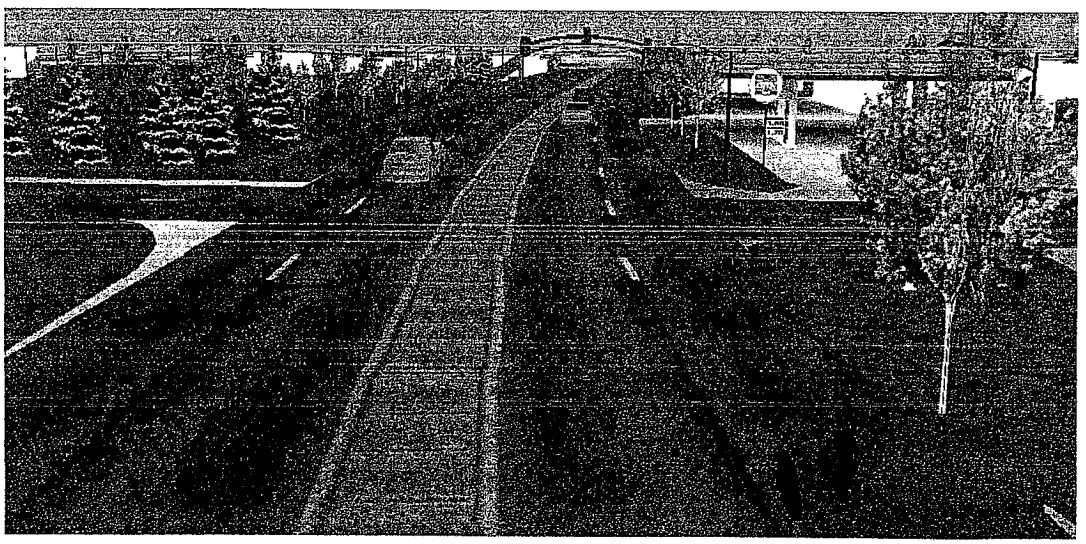


Figure 7-6. This is the model's depiction of Option 1 in the area just past the intersection of Lincoln Road with 14th Avenue.

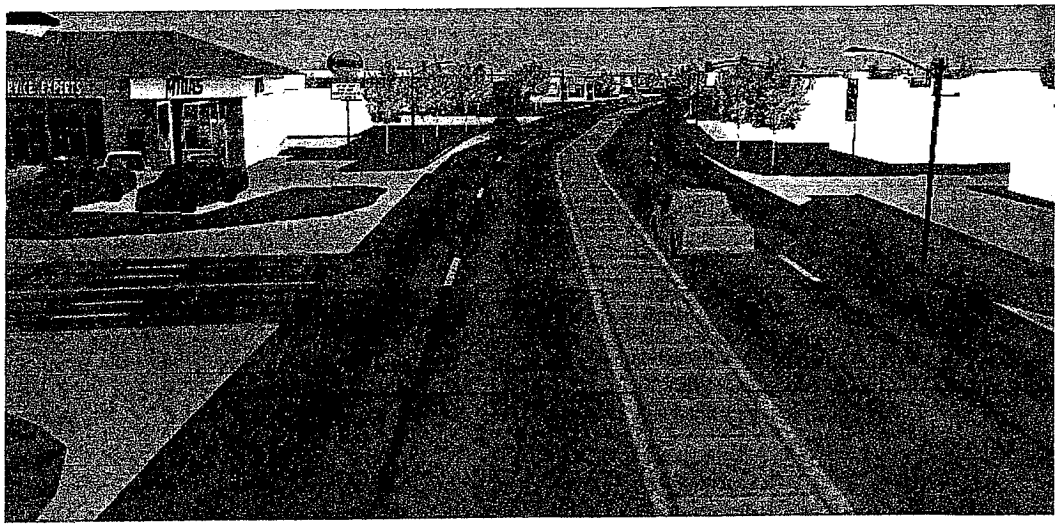


Figure 7-7. This model view shows the appearance of the corridor under Option 2 looking south along Lincoln Road just north of 15th Avenue.

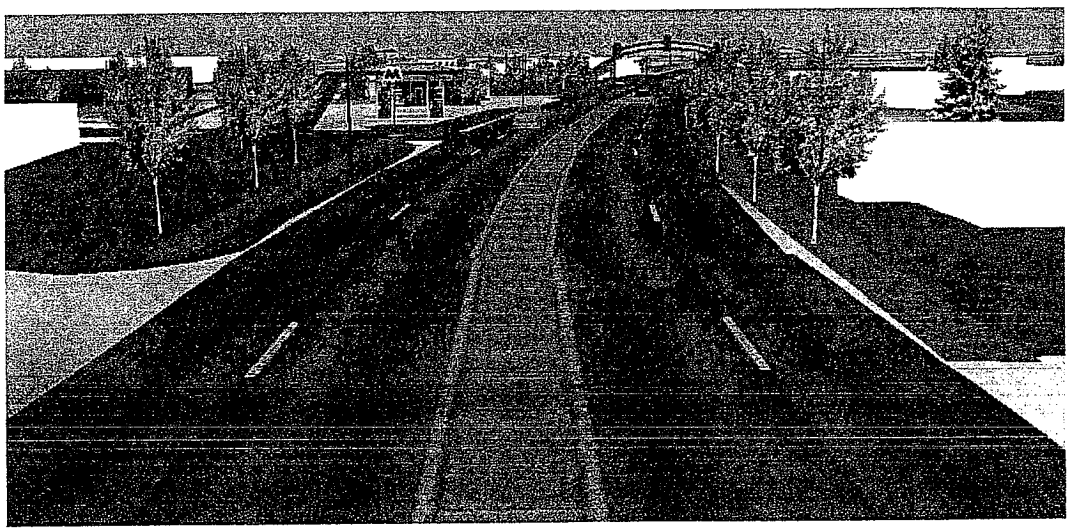


Figure 7-8. This view is Option 2 looking south near the 14th Avenue and Washington Street intersection on Lincoln Road.

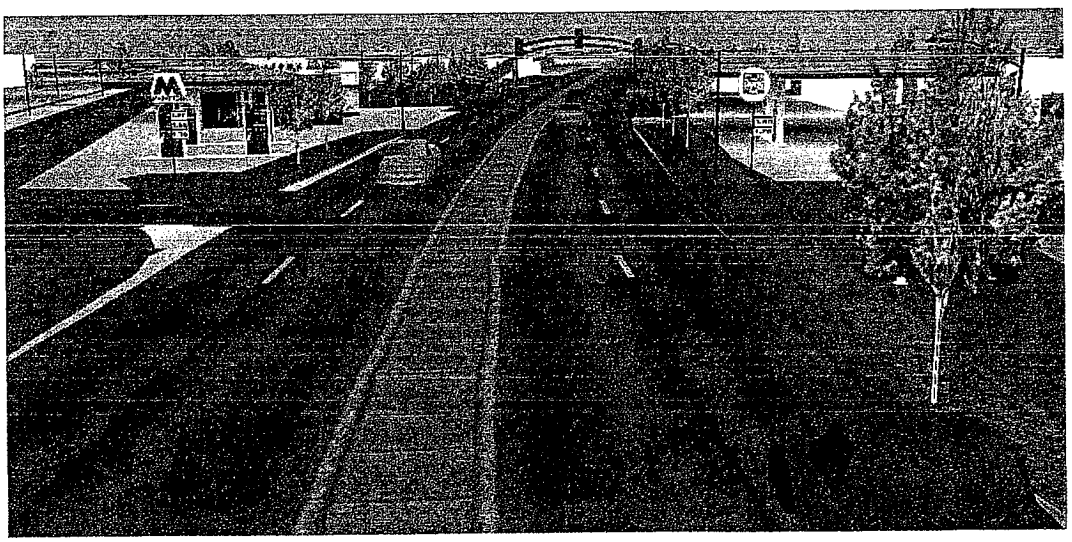


Figure 7-9. This is the model's depiction of Option 2 in the area just past the intersection of Lincoln Road with 14th Avenue.

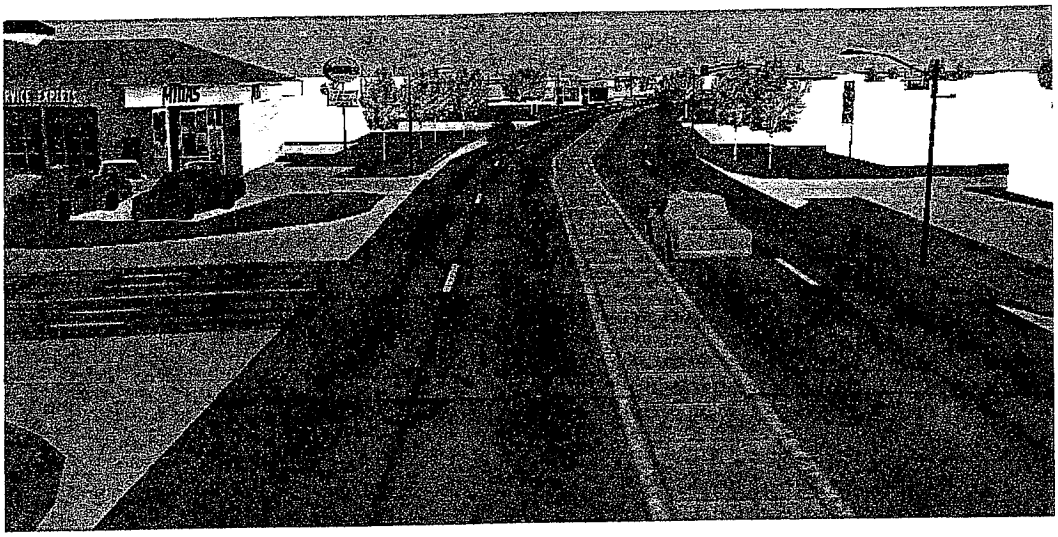


Figure 7-10. This model view shows the appearance of the corridor under Option 3 looking south along Lincoln Road just north of 15th Avenue.

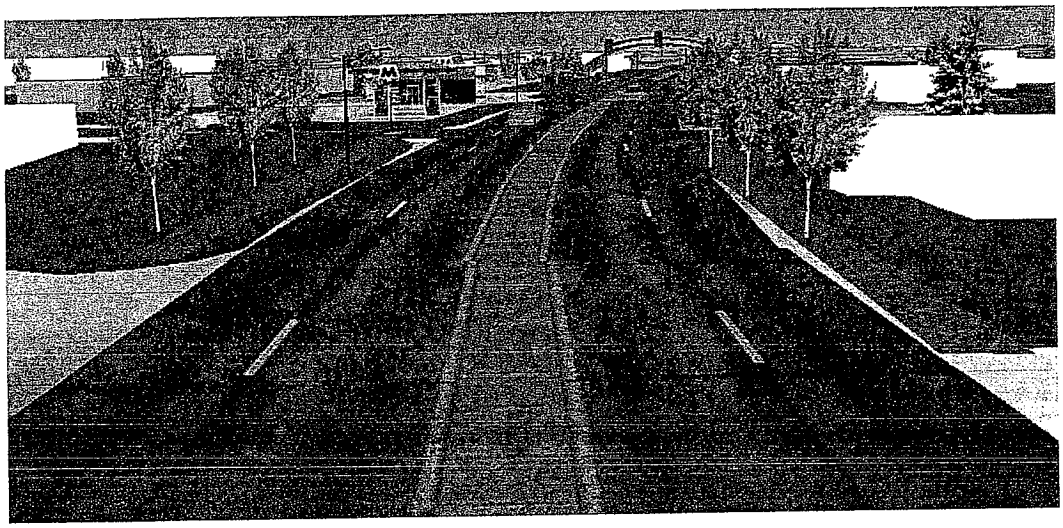


Figure 7-11. This view is Option 3 looking south near the 14th Avenue and Washington Street intersection on Lincoln Road.

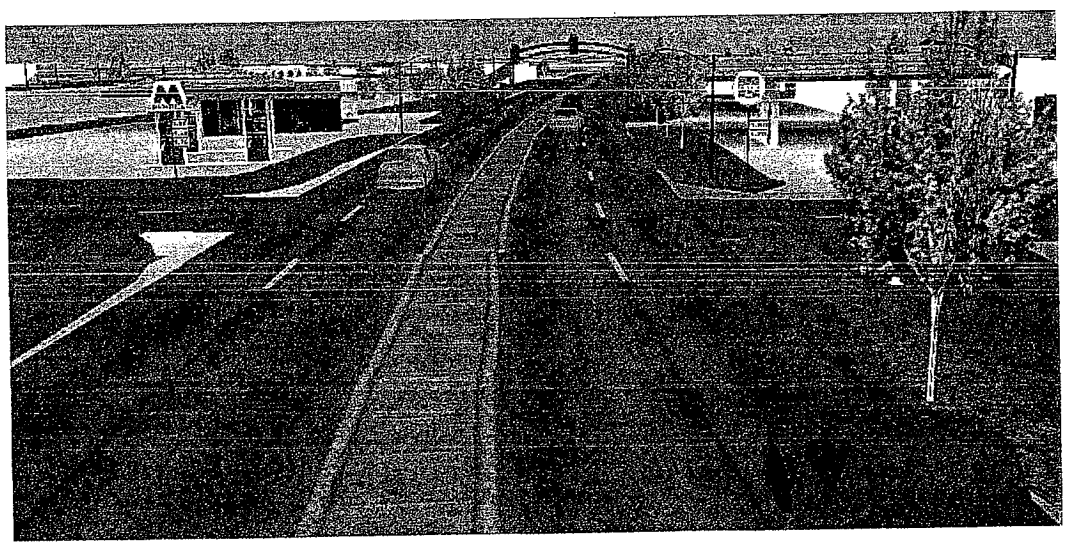


Figure 7-12. This is the view of Option 3 in the area just past the intersection of Lincoln Road with 14th Avenue.

Chapter VIII

SUMMARY OF PROPOSED ACTIONS

Introduction

This *Corridor Plan* was developed to provide the City of Escanaba and MDOT a well-documented analysis of the characteristics of the Lincoln Road corridor and specific guidance for improving the safety, efficiency and aesthetics of this major transportation artery. The previous chapters have provided analyses and a number of detailed recommendations on addressing access management, local land use, and corridor aesthetics issues. In this final chapter of the *Corridor Plan*, we will summarize these recommendations and organize them into a flexible action plan for review and consideration in future decision processes related to the corridor.

Summary of General Recommendations

The following paragraphs provide a brief summary of general recommendations compiled by the consultant team. By taking appropriate actions under each of these headings, the City of Escanaba (in cooperation with MDOT) would help improve conditions along the entire stretch of the Lincoln Road Corridor.

Revision & Improvement of Land Use Planning and Zoning Activities

A significant portion of the problems and opportunities identified by the residents, public officials, and consultant team can be linked to planning and zoning activities undertaken by the City of Escanaba. Chapter IV of this *Corridor Plan* includes several very strong and direct statements about flaws in the City of Escanaba's existing *Comprehensive Plan* and *Zoning Ordinance*. Through its analysis, the consultant team has determined that the current land use planning and zoning documents severely limit the City's ability to make productive and desirable changes in the corridor. Further, the current *Comprehensive Plan* and *Zoning Ordinance* put the City at risk for legal challenges.

As detailed in Chapter IV, there is an inadequate relationship between the *Comprehensive Plan*, the *Zoning Ordinance* and existing land use. The City needs to take action to revise, re-write, and update both the *Comprehensive Plan* and the *Zoning Ordinance*.

The *Comprehensive Plan* should be revised to establish more inclusive guidance for City development as well as the legal basis for local zoning. The consultant team recommends that the *Comprehensive Plan* more fully address topics such as public facilities, environmental constraints, and community character as well as implementation methods. Perhaps most important, there needs to be a zoning plan included. Since this *Comprehensive Plan* was adopted in June 1996, a review and revision would be timely.

The City of Escanaba's *Zoning Ordinance* is also seriously deficient and must be revised if there are to be significant improvements in the Lincoln Road Corridor. Some of these revisions are necessary to assure the basic enforceability of the ordinance itself. Many of the changes and additions to the *Zoning Ordinance* recommended in Chapter IV can be clearly related to successful corridor management. For example, *site plan review* is a well-tested, basic tool for assuring that proper design standards are used in commercial developments. Many of the traffic safety and access concerns identified could be addressed during a rigorous site plan review process. Other corridor concerns that should be addressed in a properly structured city ordinance include sign and landscaping standards as well as access management standards.

Application of Access Management Techniques

Common techniques for access management are discussed in Chapter V of this *Corridor Plan*, providing some detail on concerns identified in the Lincoln Road Corridor. Again, the recommendations provided in this chapter are consistent with and supported by comments made by residents and public officials at the public meetings.

In general, the consultant team recommends the application of access management techniques for any new development along the corridor as well as redevelopment situations whenever possible. The techniques identified as most directly applicable are:

- Reducing driveways by limitation, consolidation and alteration
- Providing new signage treatments and turn restrictions
- Developing rear access to many locations

Specific recommendations for the application of these and other access management techniques are discussed below.

Enhancing Aesthetic Characteristics

The potential for making aesthetic improvements along the corridor is discussed in Chapter VI of this *Corridor Plan*. All of the improvements recommended were mentioned during the public meetings. Many of the recommendations are applicable to the whole corridor to some extent.

The more generalized aesthetic improvements recommended could be accomplished through direct intervention by the civic organizations, City of Escanaba and MDOT. These generalized recommendations include:

- Street and roadside maintenance (e.g., sand removal, weed and grass trimming)
- Addition of street trees and right of way plantings
- Addition of decorative roadway lighting
- Change of commercial signs (e.g., reduced sizes and frequencies)

Location specific recommendations are provided in Chapter VI and below.

Options for Site Specific Corridor Improvements

Proposed Land Use Alterations

Chapter IV of this *Corridor Plan* includes a table of recommended changes to land use along the corridor consistent with the community goals articulated in the *City of Escanaba Comprehensive Plan*. Through Map 4-1 and Table 4-1, the consultant team recommends specific changes in specific areas along the corridor. In general, these changes would provide for additional multifamily dwelling and some additional services. In addition, the *Corridor Plan* suggests ways of reducing the commingling of conflicting land uses by reducing the amount of corridor area zoned as *manufacturing* and increasing the *retail* and *restaurant commercial* area.

Maps 5-5 and 5-6 in Chapter V identify a number of locations where additional retail, restaurants, and services might be constructed. With appropriate site planning, these new commercial structures could add value, break up and reduce paved surfaces (in some little used parking lots), and increase attractive landscaping along the corridor.

Traffic Controls

The traffic controls identified throughout this *Corridor Plan* emphasize the reduction of driveway and curb cuts through driveway consolidation efforts and design controls over new construction. Additionally, the consultant team recommends more use of right-turn deceleration lanes, median and islands, interconnecting businesses through rear access roadways, and new connections between local streets. The following is a summary of specific recommendations within this *Corridor Plan* found in Chapter V.

Lincoln Road at 5th Avenue South – Close off 6th Ave. South (the original 5th Ave. South) near the school to all traffic and incorporate a median in Lincoln Ave. for at least one block north of 5th Ave. South. These changes would help to channel traffic and reduce accidents in this area of frequent crashes.

Lincoln Road at Ludington – Reduce the number of driveways near the intersection (related to the existing gas stations), provide more use of alleys for access, and build in right-turn lanes to get traffic out of through lanes.

Lincoln Road and 1st Avenue North – Install an island to permit only right-turns onto 1st Ave. from Lincoln Road and right-turns from 1st Ave. onto Lincoln Road. This should result in fewer auto crashes at this location.

Lincoln Road, Between 7th & 9th Avenues North – Install a rear access drive behind businesses on the west side of the road, including Wal-Mart, K-Mart, and the mall area. This should reduce local traffic on Lincoln Road performing on and off maneuvers.

Local Street Connections – Extend 9th Ave. North to connect Lincoln Road to 30th Street North. Extend 26th Street North from 1st Ave. North to the newly extended 9th Ave. North. This would reduce local traffic on Lincoln Road and open up some areas to new development.

Driveway Consolidations – The consolidation of existing driveways along much of the Lincoln Road corridor should be considered. The reduction in commercial driveways would help to reduce the number of accidents and improve the appearances of the corridor. Again, the maps provided in Chapter V provide a number of specific suggestions for driveway consolidation.

Lincoln Road at Washington Street

During the development of this *Corridor Plan*, both residents and local officials frequently encouraged the consultant team to consider ways of improving Lincoln Road near the northern end of Escanaba, particularly near Washington Street. People pointed out the need to improve pedestrian safety and movement (particularly for school children crossing Lincoln Road), enhance the aesthetic character of this important entry to Escanaba, and reduce traffic confusion.

In response to these concerns, the consultant team worked to develop several different options that might adequately represent many of the choices possible. These options detailed in Chapters V and VI, and illustrated in Chapter VII, are intended to stimulate discussion and focus attention on the potentially substantial improvements that can be achieved at this location.

Aesthetic Improvements

Chapter VI of this *Corridor Plan* describes and illustrates many of the aesthetic improvements recommended by the consultant team. These enhancements would improve the overall appearance of Escanaba to travelers and visitors as well as increase community pride. As described and illustrated in this report and the large format illustrations accompanying this report, the consultant team recommends a substantial increase in available sidewalks, the installation of street trees and other landscaping, reductions in the quantity and size of signs, and improvements in street and sidewalk lighting.

Again, the recommendations provided here are to encourage discussion and provide guidance for the management of future development. However, many of the actions recommended in this *Corridor Plan* can be achieved through direct action by the City of Escanaba and MDOT. The following section provides a brief description of some potential funding sources to consider in taking action to enhance the Lincoln Road and Ludington Street Corridor.

Funding Corridor Improvements

Financing infrastructure and streetscape improvements can come from a variety of sources. One suggestion is to expand the Downtown Development Authority (DDA) district to include the Lincoln Road Corridor. The DDA can tax properties, borrow money, or issue revenue bonds, own property, and generally make improvements in infrastructure and public facilities.

The City could establish a Tax Increment Financing (TIF) plan. Utilizing TIF, the authority (DDA or municipal agency) captures any increases in property valuation above a base level established before the development process begins. TIF revenues can be used to finance additional redevelopment projects and for necessary infrastructure improvements, further increasing property values and tax revenues as well as encouraging private investment.

Another City-based approach is to establish a Business Improvement District (BID). This is an area in which the private sector delivers services for revitalization "beyond what the local government can reasonably be expected to provide." The properties and/or businesses within this legally constituted district pay a special tax or assessment to cover the cost of providing facilities or services for which the district has a particular need. The oversight board, made up of property owners and/or business leaders, can generate financing for capital improvements for more attractive streetscapes.

The City and partners could look to the Transportation Equity Act for the 21st Century (TEA-21) and its reauthorization. The U.S. Department of Transportation provides funds for transportation enhancements, including transit facilities, pedestrian and bicycle improvements, and infrastructure safety mechanisms. TEA-21 projects generally need to serve a broad, ideally large, population and encourage pedestrian, bicycle, or transit use.

The Michigan Department of Transportation also has programs for funding improvements such as those suggested for Lincoln Avenue. Two funds, in particular are appropriate for this type of enhancement: Economic Development Fund, Category A and Category F. Information on both of these programs follows.