Interstate 394 Business Impact Study

Research Summary and Key Findings

Prepared for

Minnesota Department of Transportation

June 2007

Interstate 394 Business Impact Study
Research Summary
and Key Findings

Prepared by:

CH2M HILL

Howard Preston, P.E.
Mary Gute, AICP
Richard Storm, P.E., PTOE™

Center for Transportation Research and Education
Iowa State University

David Plazak
Chris Albrecht

June 2007

Published by:

Minnesota Department of Transportation

Acknowledgements

The authors of this report would like to acknowledge and thank the businesses and communities located along the I-394 corridor who participated in this study. With the support of these businesses and communities, we have been able to further our study regarding how major transportation projects, such as the conversion of US 12 to I-394, impact businesses once construction is completed.

We would also like to especially acknowledge several individuals at the Minnesota Department of Transportation's (Mn/DOT) Office of Investment Management and Office of Right-of-Way who played key roles in the development of this report.

SECTION 1

Introduction

1.1 Purpose of I-394 Business Impact Study

The traffic safety and operational benefits of highway improvement projects are well documented in transportation research. However, the economic impacts of these projects, especially if changes in access are involved, are not as well documented. The few studies that have been done in this area reveal that access modifications did not cause inordinate damage to businesses or commercial land values (see Section 2).

The lack of research, and a lack of Minnesota specific examples, has left Mn/DOT staff unable to provide a clear and credible response to business owners and commercial property owners concerned about potential economic effects of highway projects. Mn/DOT is attempting to address this information gap by conducting a comprehensive and systematic analysis of economic effects of a highway improvement project—the conversion of US 12 to Interstate 394 (I-394). This I-394 Business Impact Study is a first step in documenting credible, local information about the potential business related impacts associated with highway improvements. This research is intended to provide a comprehensive long-term evaluation of the transportation, business, and land development impacts of a major transportation project in the Minneapolis-St. Paul metropolitan area.

1.1.1 Types of Highway Project Impacts

Highway construction and reconstruction projects often result in two types of impacts to the businesses that are located directly along the highway corridor undergoing improvements:

- ***Land Acquisition***—This is the most obvious and direct type of impact—the purchase of property for transportation use. Measuring the level of impact caused by land acquisition is relatively straight forward. Qualified appraisers estimate the market value of the land needed by the state for the highway project.[1] A written offer is made to the property owner based on fair market value. If the property owner accepts the offer, the process is complete. If the price of the property cannot be agreed upon by the seller and highway agency, the process moves into eminent domain (also known as condemnation). This process culminates with court-appointed commissioners making a decision regarding the selling price. The commissioners' decision can also be appealed. While this process is not without controversy, the general idea of tying a value to land is less complicated than measuring other types of project impacts, such as changes in access.
- ***Changes in Access***—Highway projects oftentimes involve relocating or consolidating driveways, installing medians, and substituting interchanges for at-grade intersections. In some cases, including the conversion of US 12 to I-394, all direct driveway accesses were closed and replaced with a system of frontage roads. This changed the way in

[1] Appraisals are normally based on studies of recent similar sales of property in the area.

which people accessed many businesses along the corridor, and also sometimes affected the visibility of businesses from the mainline highway. However, unlike determining a value for land acquisition, determining the impact of and putting a price on changes in access and travel patterns to a business parcel are not as clear-cut.

1.1.2 Methods used to capture economic conditions of corridor before and after freeway conversion

A comprehensive documentation of the economic impacts of changes in access is beyond the scope of the I-394 Business Impact Study. Rather, this study attempts to capture the economic climate along the corridor both before and after conversion to a freeway. A variety of macro and micro level indicators were used to take snapshots of the corridor's economic health both before and after freeway conversion. The macro-level economic indicators are discussed in Section 3 and include:

- Changes in land use, and whether or not land uses became more or less intensive[2]
- Income trends of those living along the corridor and in communities bordering the corridor
- Retail activity
- Employment trends
- Business turnover rates, including how many businesses located along the corridor before freeway conversion are still operating today)
- Land values along the corridor, including how the values compare to similar corridors in the Minneapolis-St. Paul metropolitan area

The mirco- or individual business indicators that were examined for this study are discussed in Section 4 and include:

- Historic estimated market values
- Travel time comparisons before and after freeway conversion to and from the parcel
- Comparison of before and after I-394 access paths to and from the parcels
- An interview with representatives from a sample of businesses was completed; generalized comments are also included in Section 4

While this approach does not directly correlate to a documentation of economic impacts of changes in access, it does at the very least provide documentation that this particular freeway conversion and all associated changes in access and travel patterns to and from businesses did not adversely affect the economics in the corridor. As will be demonstrated in Sections 3 and 4, a variety of other factors play into the success or failure of businesses—the surrounding transportation network is just one of the many factors.

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[2] In terms of urban land markets, office is considered one of the highest uses of land. Such development is often found on land parcels with high values. Commercial is the next "highest" use, followed by industrial, residential, and agricultural.

1.2 Business Concerns Regarding Economic Impacts of Highway Projects

Based on the experience of Mn/DOT staff as well as a review of documentation from past condemnation proceedings, owners of businesses located along highways being considered for highway improvements often suggest that any change to the existing transportation network will result in one or more of the following adverse impacts:

1. a reduction in property values;
2. a reduction in retail sales; or
3. business failure.

Mn/DOT receives comments on economic impacts on projects ranging from minor transportation system modifications to major highway expansions, which means that business owners are concerned regardless of a project's magnitude. These concerns are expressed throughout project development—from early on, during corridor planning or environmental documentation all the way through construction.

1.2.1 Concerns of Business Owners Located along the Study Corridor during Freeway Conversion

In line with the discussions above, changes in access proved to be the biggest challenge for appraisers to assess during condemnation proceedings for the I-394 project. Overall, the I-394 conversion project cost approximately $300 million; this price includes approximately $125 million for right-of-way acquisition. Approximately 400 parcels were located along the US 12 corridor at the time of the freeway conversion project, many of which were businesses. Roughly 100 of these parcels required total acquisition; most of the remaining parcels required partial acquisitions to accommodate a change of access, a loss of parking spaces, or relocation of driveways. Finally, a small number of parcels had no acquisition, but petitioned through the courts to be allowed to participate in condemnation solely because of changes in access.

Before freeway conversion, US 12 was a signalized arterial with frontage roads on both sides of the road; slip ramps provided a connection between the main lanes and the access roads (see Section 3). In many cases, businesses located next to the frontage road placed driveways opposite the slip ramp. When the road was upgraded to a freeway, the slip ramps were closed. This resulted in changes of how a business parcel was accessed.

In many cases, the businesses owners affected by this type of change in access claimed that that the increased distance people needed to travel to reach their parcel would result in decreased business. The following is a hypothetical example: before freeway conversion, a business owner's driveway was 100 feet from the slip ramp entrance off of US 12; after freeway conversion, business patrons would need to travel a half a mile down to an interchange and a half a mile back to get to the parcel, resulting in a longer trip.

This hypothetical example does not recognize that most business patron trips neither start nor end at the access affected by the change. Therefore, it is subjective to presume that a longer distance from the highway's mainline to a particular business will discourage people from

making the trip. The Travel Behavior Inventory for the Minneapolis-St. Paul metropolitan area shows that the average one-way trip length in this part of the Minneapolis-St. Paul metropolitan area is approximately five miles (see Section 3 for additional details). Also, most trips originate outside the corridor and include travel on both the regional and the local road systems. Reasoning that changes in access which require longer travel distances from the mainline also ignores the fact that highway improvements, including removal of traffic signals, may actually decrease overall travel times to a business (see Section 3 for results).

1.2.2 Why did Mn/DOT choose I-394?

I-394 is a major east-west freeway that runs between downtown Minneapolis and the western suburbs of the Minneapolis-St. Paul metropolitan area (see Figure 1. Before the mid-1980s, the highway was a high-speed, at grade arterial, designated as US 12 (also known as Wayzata Boulevard). Prior to conversion to a freeway, US 12 between I-494 and Penn Avenue, was a four-lane divided arterial with left and right turn lanes at intersections. Some short segments of the highway did have freeway design characteristics.

The I-394 corridor was chosen as a good place to start examining the economic impacts of access management on businesses because of two key factors. First, a large amount of information on the I-394 corridor was readily available for study; including early corridor studies, as well as detailed information on right-of-way acquisition and construction stages of the project. Secondly, the fundamental different patterns of access resulting from the freeway conversion (US 12 provided at-grade access to properties along I-394, while I-394 provides access via a system of interchanges, local streets, and frontages roads) made the I-394 corridor an ideal case study for assessing the impacts associated with a major highway project that included substantial changes in access and travel patterns for getting to a business parcel.

1.3 I-394 Business Impact Study—Process and Approach

The approach used to complete this study involved three parts—the literature review; the corridor overview; and the parcel studies. The process used is shown in Figure 2 and described below. Mn/DOT sponsored this research project involving CH2M HILL, an engineering and planning consulting firm; and Iowa State University's Center for Transportation Research and Education (ISU CTRE).

- **Literature Review**—This section looked at existing literature on the economic impacts of transportation improvement projects, many of which included changes in access. Generally, it was found that a great deal of literature exists that clearly demonstrates the safety and operational benefits of access management. However, relatively little literature was found that addressed economic impacts to businesses affected by transportation projects. Findings of this review are discussed in ***Section 2***.
- **Corridor Overview**—The initial overview of the corridor includes documentation of changes to the physical characteristics resulting from the I-394 conversion process—including changes to the number of access points, number of lanes, and highway design type. After that, a review of changes to transportation, land use, demographic, and

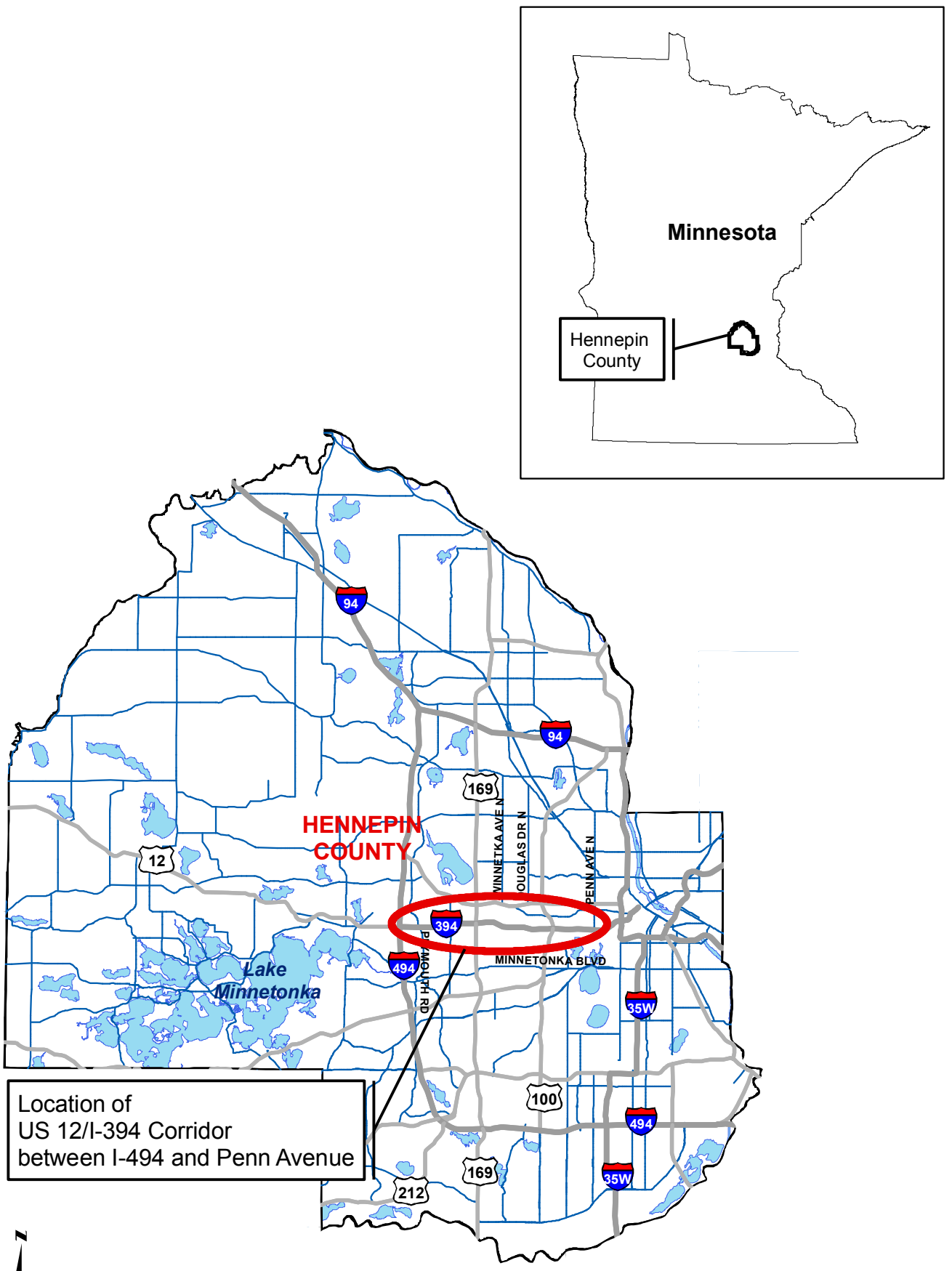

Figure 1-1
US 12/I-394 Corridor
Project Location Map

economic trends along the I-394 corridor were assessed for the time period between 1980 and the early 2000s. This review was done using variety of secondary data sources (from Mn/DOT, the Metropolitan Council, the Minnesota Department of Revenue, the U.S. Census Bureau, several private business directories, and the archives of a local commercial real estate brokerage and appraisal firm). This review paints a picture of the transportation, land use, and business environments for a corridor as a whole, before, during, and after the I-394 conversion project. The results of this corridor overview are the topic of ***Section 3***.

- **Business Level Overview** – The second line of research focused on land parcels and businesses. This approach provided insight into how individual firms fared during the transition from arterial highway to interstate, including the higher level of land access control and the resulting changes in travel patterns to specific businesses. The results of this corridor overview are the topic of ***Section 4***.

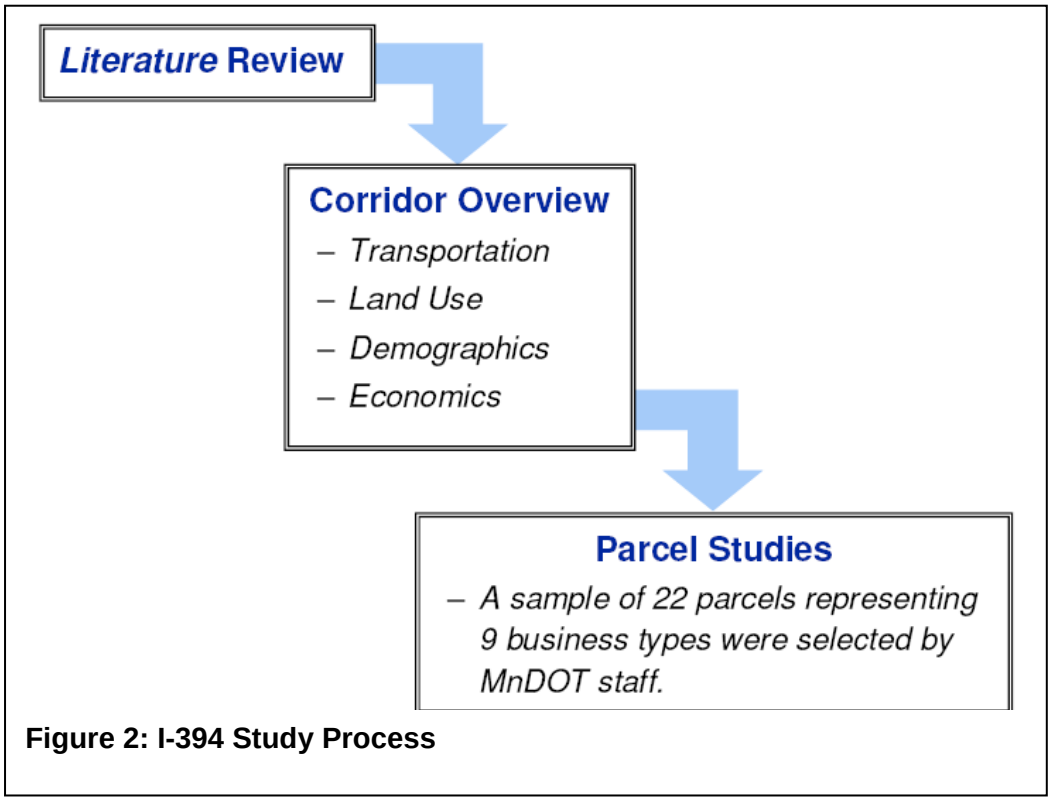

Figure 2: I-394 Study Process

SECTION 2

Literature Review

2.1 Safety and Traffic Operations Benefits of Transportation

There is a wide body of research demonstrating that highway improvement projects, including changes in access, provide major benefits to the public by preserving travel capacity and traffic flow; and reducing crashes between vehicles (Gluck, Levinson, and Stover, 1999). While these positive safety and operational results benefit motorists and justify project costs, business owners typically remain uncertain about the project's influence on sales and other economic indicators. This is especially the case if proposed transportation improvements involve control or elimination of access to businesses, which is likely to affect travel patterns (see Section 1).

Unlike the vast amount of information that is available on safety and operational benefits, there are relatively few studies that address the economic impacts of transportation projects. As discussed in Section 1, this is due in part to the difficulty of determining the effects and costs associated with changes in access and travel patterns. Another challenge to quantifying economic impacts is difficulty in attaining sales data for individual businesses. If this data were available, researchers could compare before and after construction sales data to determine the economic changes that have occurred since the completion of the transportation project. Though this obstacle persists, the economic impacts of transportation projects have been researched through business and customer perception surveys and comparison of business vitality among different roadway corridors (Kristine Williams, 2000).

2.2 Impacts of Transportation Projects on Property Values

Research that has been done to measure the relationship between property values and transportation improvements has achieved varied results. More recent studies have found that transportation network and access changes to land parcels are simply two of many variables that impact property values, and that generally, unless a transportation project is very large in scale, the improvements are likely to have only a minor influence on property values. Other factors that impact property values include distance or travel time from a transportation facility (Ryan 1999; Knapp, et al, 1996).

2.3 Economic Impacts of Projects Involving Changes in Access

The states of Florida, Iowa, Kansas, and Texas have conducted studies in an effort to determine the impact of transportation projects, which involve changes in access, on business vitality.[1] These studies all contribute to the minimal amount of literature available on the topic of the economic impacts of transportation projects (Kristine Williams, 2000: 1). Each state conducted different types of studies, but each provided strong evidence that access management techniques do not have overriding negative economic impacts. The bullets below summarize the premise and findings of these studies:

- The **Kansas Department of Transportation** studied businesses that filed lawsuits claiming their businesses were negatively impacted by a variety of access management treatments. This involved "before" and "after" studies of a limited number of parcels from around Kansas that were involved in litigation. ***Key Finding***: Relatively minor changes in access (less than one mile) were not sufficient to cause significant changes in land use and value.
- The **Texas Department of Transportation** studied the economic impacts (changes in property values) of restricting left turns by installing raised medians in a limited number of improved urban arterial corridors. In lieu of sales data, the researchers in Texas personally interviewed business owners, and found that owner perception of business change due to the access treatment was generally more negative than the actual change. ***Key Finding***: Property values along the improved corridors continued to rise
- Researcher in Iowa used secondary data, interviews, and field investigations to determine the effects of changes in access on business vitality. ***Key Finding***: The Iowa study found that corridors with completed access treatments reported higher overall sales than corridors with uncontrolled access. This is the same overall conclusion as the Florida study.
- The state of Florida performed two studies on the economic impacts of median reconstruction projects. ***Key Finding***: Perceptions of business vitality after construction were found to be more negative than what actual economic conditions. This is the same result found in the Iowa study.

Generally, these state studies demonstrate that business owners' perceptions of how transportation projects, most of which involved changes in access, would affect their companies were usually worse than the actual, measured impacts. These studies also indicate that these projects did not lead to significant increases in business failure rates; and that businesses located in the vicinity of managed corridors did not suffer inordinate retail sales losses. In fact, the Iowa study showed that businesses located along newly access-managed corridors actually outperformed other businesses in their communities in terms of sales growth.

[1] Access management is a type of transportation improvement; therefore, this line of research is worth considering when asking how and if access management impact property values.

2.4 Summary of Economic Impact Studies

Below is a summary of conclusions drawn from the few studies that have been completed.

- The economic impacts (mainly involving land development and business sales) of transportation projects have not been researched as extensively as the safety and operational impacts.
- The business impacts studies that have been performed in states such as Florida, Iowa, Kansas, and Texas have similarly concluded that businesspersons' perceptions of the impacts of changes in access on their companies are almost always worse than the actual impacts as measured after the fact.
- Before and after studies of transportation projects involving changes in access indicate that such projects do not lead to significant increases in business failure rates.
- Research also indicates that businesses along and near access-managed corridors do not suffer inordinate retail sales losses. In fact, businesses along newly access-managed corridors in Iowa actually outperformed other businesses in their communities in terms of sales growth.
- Literature on the impacts of transportation accessibility on land values suggests that such impacts would be very difficult to demonstrate either in a positive or negative direction. Variables such as parcel size and the overall location of the parcel would appear to matter more.

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SECTION 3

Corridor Overview—Transportation, Land Use, Demographics, Economics

Interstate 394 (I-394) is a major east-wet freeway that runs between downtown Minneapolis and the western suburbs of the Minneapolis/St. Paul metropolitan area (see Figure 1-1). This corridor has been, and continues to be an important arterial highway for the western Minneapolis/St. Paul Metropolitan Area suburbs. This documentation provided in this section provides the background for the individual business investigations that were completed for this study, which is documented in Section 4.

3.1 Physical Highway Changes: Before and After Freeway Conversion

This section documents the physical changes made to the highway during freeway conversion, including the number of access points, number of lanes, and the highway design type.[1] Completion of this inventory made it possible to document changes in traffic characteristics.

3.1.1 Highway Design

Prior to conversion from an expressway to a freeway, the highway between I-494 and Penn Avenue was designated as US 12, also known as Wayzata Boulevard. US 12 was a four-lane divided, high-speed, at-grade arterial with left and right turn lanes at intersections. However, several short segments the road had freeway design characteristics; specifically, interchanges at where major roads intersected US 12 (see Section 3.1.2 below for more access details).

Between 1985 and 1993, 10 miles of US 12 were converted to a freeway, built to urban interstate standards. This included removal of the at-grade intersections, direct access, and slip ramps. I-394 is now a six-lane freeway with some auxiliary lanes that create a four-lane cress section in each direction. Between I-494 and MN 100, the inside lane in both direction is a HOV lane during peak periods. Between MN 100 and I-94, two reversible flow lanes were constructed in the center of the highway for carpools, buses, and motorcycles.

3.1.2 Access Patterns

Access for US 12 was predominately at-grade intersections with interchanges at major cross streets and slip ramps to and from adjacent parallel frontage roads. US 12 had a total of six interchanges, ten full access intersections, two partial intersections, six Right In/Right Out (RI/RO) intersections, and seven slip ramps. The eastern part of the corridor had more traffic signals than the west end. Conversion to I-394 resulted in controlled access with interchanges. The number of accesses was reduced to ten interchanges; three system interchanges and seven

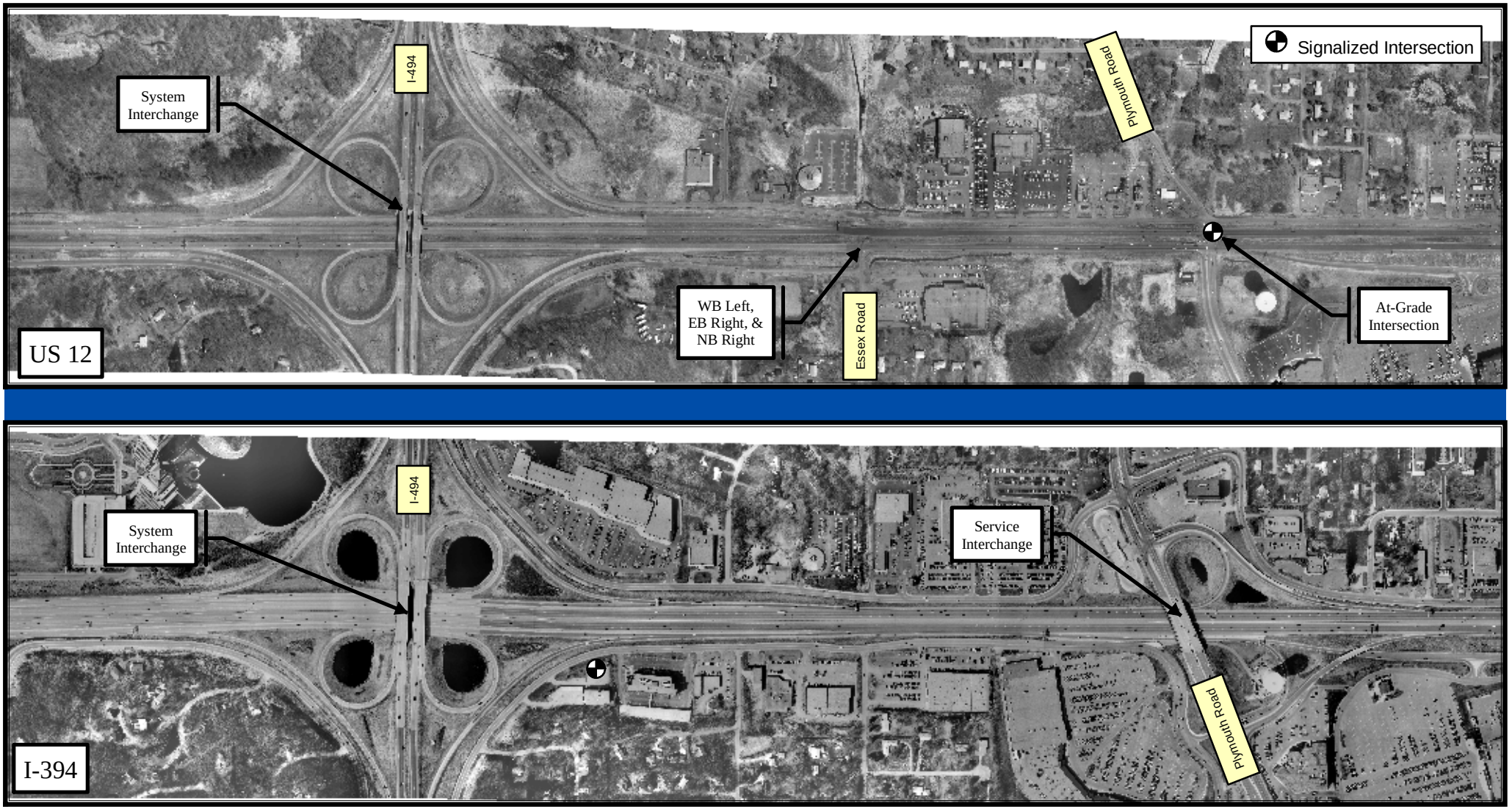
[1] The majority of the information regarding the "before" freeway conditions of I-394 was obtained from the I-394 Land Use Study that was completed by Mn/DOT in November 1987.

service interchanges. Table 3-1 provides a summary of the access changes made at major cross streets. Figures 3-1 through 3-6 document the existing and historic access along the corridor.

TABLE 3-1

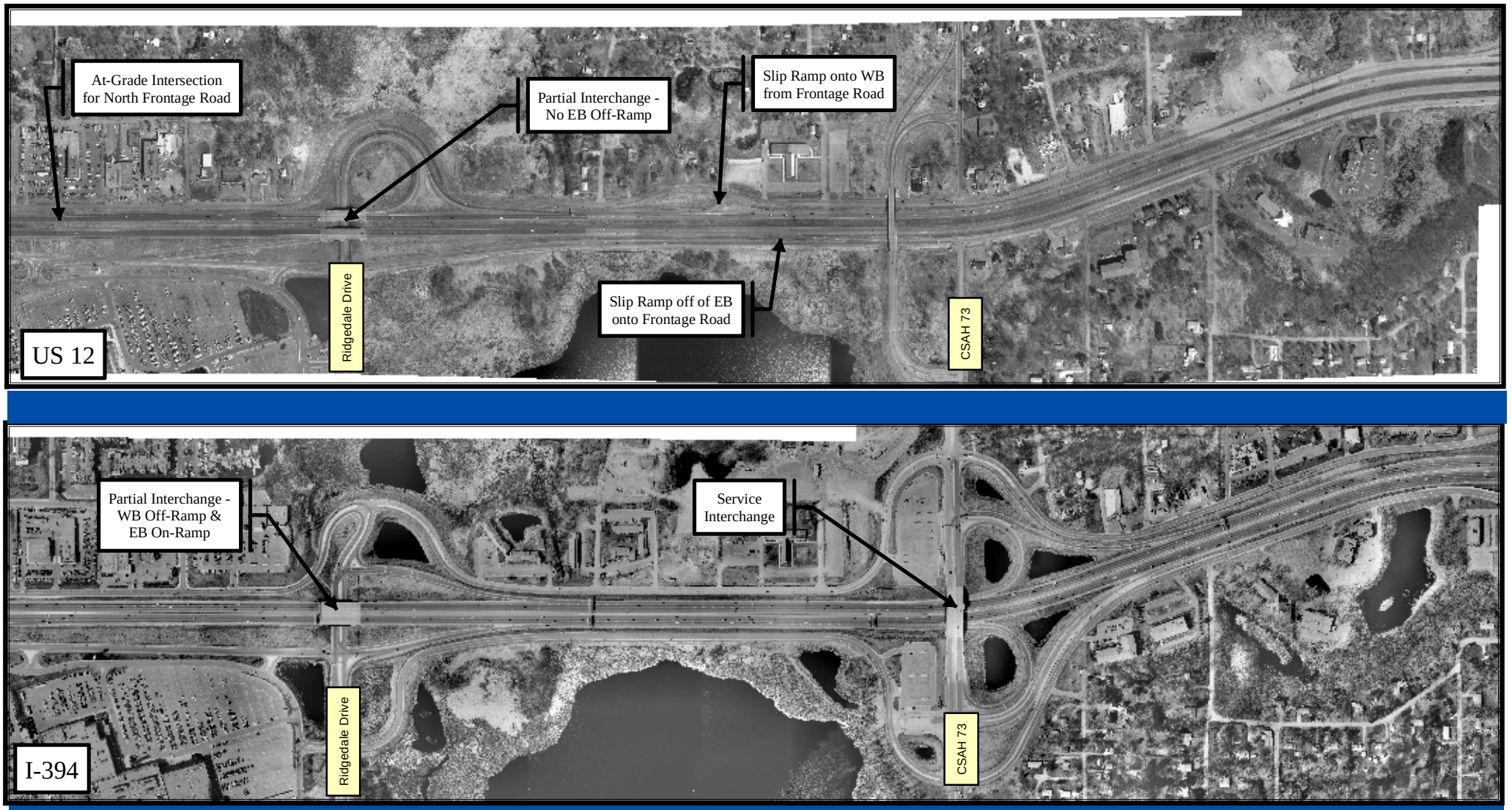
Access Change at Major Cross Streets

Cross Street	Before Conditions	Existing Conditions
I-494	System Interchange	System Interchange
Essex Road	RI/RO for EB	Closed
Plymouth Road	At-Grade, Full Access Intersection	Service Interchange
Ridgedale Drive	Service Interchange (On/Off for WB Traffic and On for EB Traffic)	Service Interchange (Half diamond with WB-Off and EB-On)
CSAH 73 (aka Hopkins Crossroad)	WB - On Slip Ramp; EB - Off Slip Ramp	Service Interchange
US 169 (CSAH 18 before construction)	System Interchange	System Interchange
General Mills Boulevard	WB - Off Slip Ramp	Service Interchange (part of CD roads for US 169)
Field Drive	At-Grade, Full Access Intersection	Closed
Winnetka Avenue	At-Grade, Full Access Intersection	Closed
Texas Avenue	RI/RO for EB and WB	Closed
Pennsylvania Avenue	At-Grade, Full Access Intersection	Closed
Louisiana Avenue	At-Grade, Full Access Intersection	Service Interchange
Florida Avenue	At-Grade, Full Access Intersection	Closed
Colorado Avenue	RI/RO for EB and WB	Closed
Xenia Place (Turners Crossroad before construction)	At-Grade, Full Access Intersection	Service Interchange
MN 100	System Interchange	System Interchange
Natchez Avenue & Fairlawn Way	EB - Off Slip Ramp	Closed
June Avenue	At-Grade, Full Access Intersection	Closed
Tyrol Trail	At-Grade, Full Access Intersection	Closed
Wirth Parkway	Service Interchange	Closed
Penn Avenue	Service Interchange	Service Interchange



I-394 Business Impact Study

Figure 3-1:
US 12 and I-394 Access between I-494 and Plymouth Road

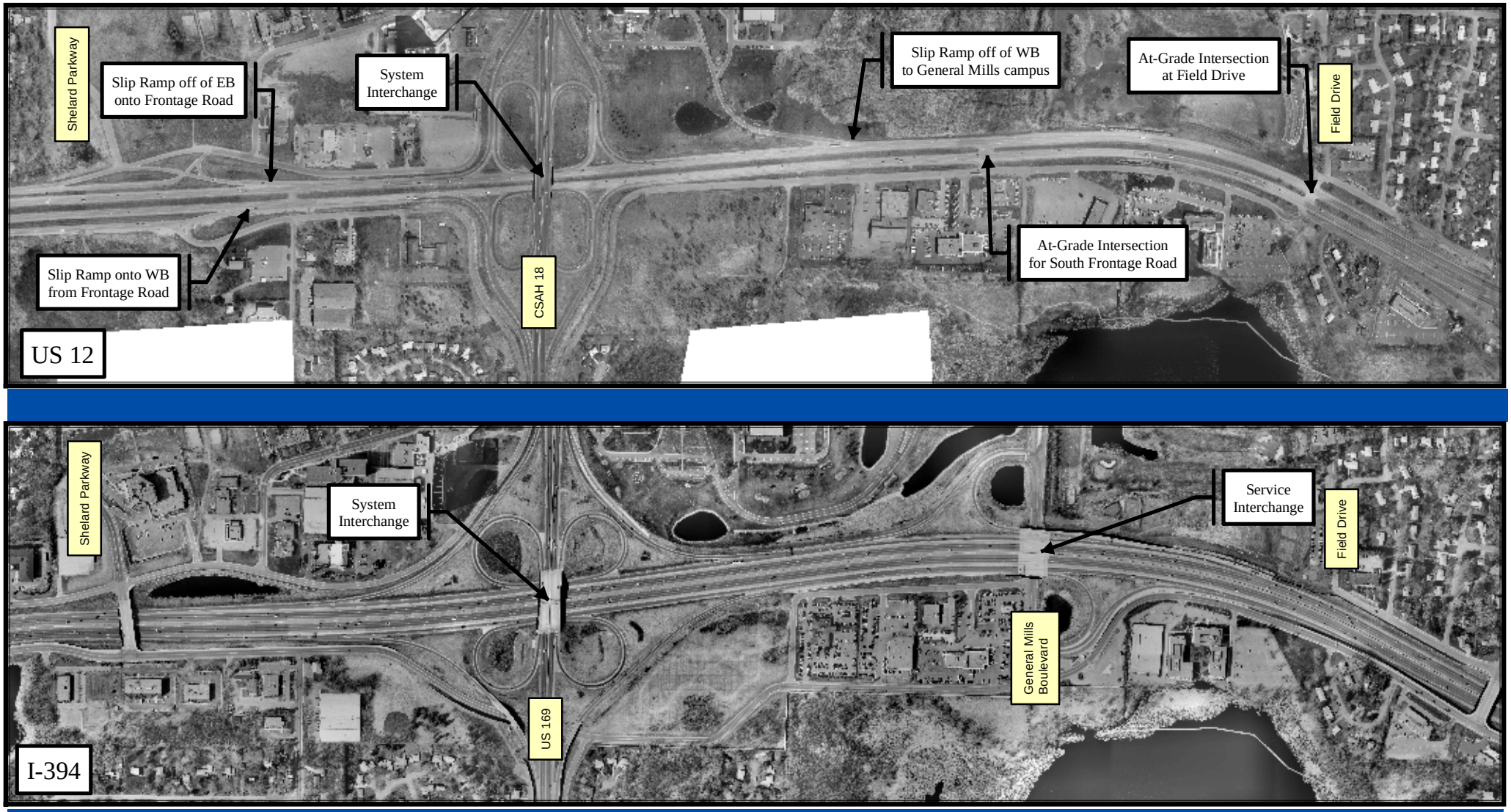


0 0.05 0.1 0.15 0.2 0.25 Miles

N W E S

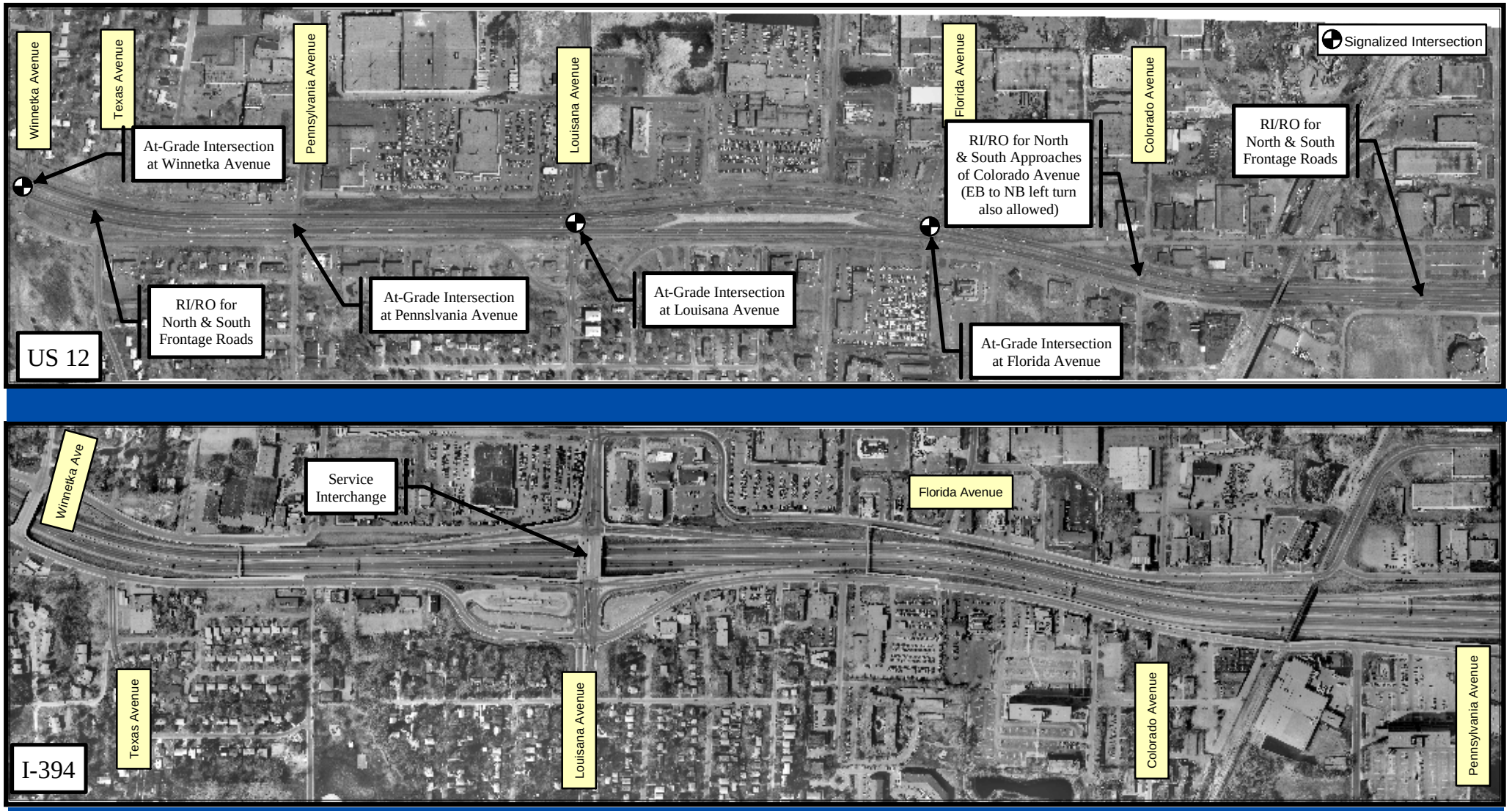
I-394 Business Impact Study

Figure 3-2:
US 12 and I-394 Access
Between Plymouth Road and Shelard Parkway



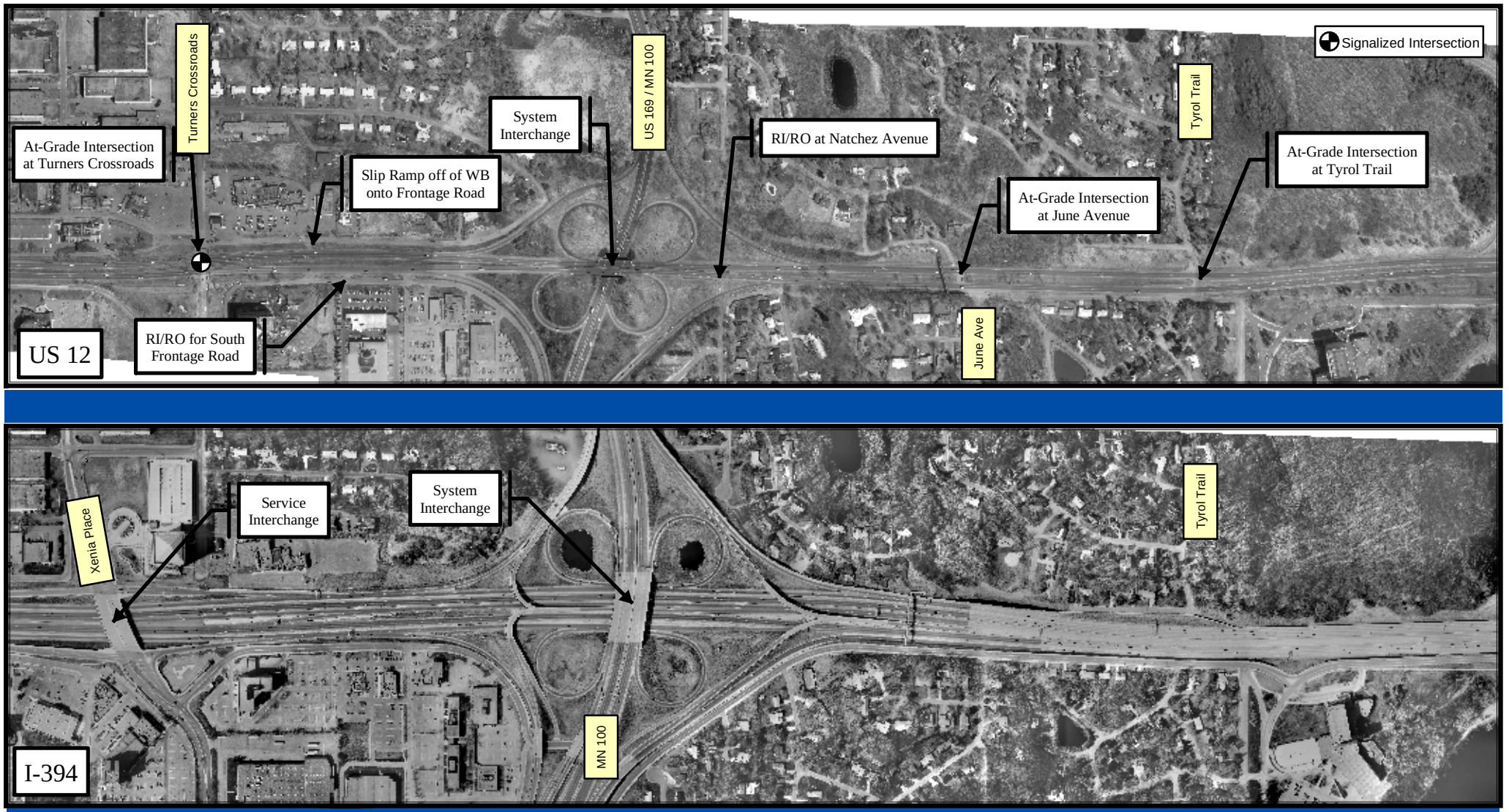
I-394 Business Impact Study

Figure 3-3:
US 12 and I-394 Access Between Shelard Parkway and Field Drive



I-394 Business Impact Study

Figure 3-4:
US 12 and I-394 Access Between Winnetka Avenue and Colorado Avenue



I-394 Business Impact Study

Figure 3-5:
US 12 and I-394 Access
Between Xenia Place and Tyrol Trail

I-394 Business Impact Study

Figure 3-6:
US 12 and I-394 Access
Between Wirth Parkway and Penn Avenue

3.2 Traffic Impacts: Before and After Freeway Conversion

This section summarizes the historic daily traffic volumes, historic travel speeds, and crash records for the corridor both before and after construction of I-394. The "before" and "after" results of this analysis indicate that the conversion of US 12 to I-394 project ultimately had a positive impact on traffic operations and safety. Below is a brief summary the traffic conditions comparison before and after freeway conversion:

- The corridor experienced substantial increases (3.0 to 5.1 percent annual growth) in daily traffic volumes between 1980 and 2000.
- Even with significant increases in daily traffic volumes, the levels of traffic operations in 1980 are approximately the same as the levels of traffic operations in 2000. The current peak period travel speeds are also higher than the 1980 peak period travel speeds.
- After construction of I-394, the total fatal and injury crashes dropped below the crash total for US 12. Most of the reduction in crashes occurred in the major and moderate injury crash types; fatal and minor injury crashes were also reduced.

3.2.1 Traffic Volumes

As shown below in Table 3-2, traffic volumes along I-394 increased substantially after freeway conversion, more than doubling in some areas. Traffic volumes west of MN 100 were more than double the volumes of the highway before freeway conversion. Traffic volumes between MN 100 to Penn Avenue increased by 70 percent over the pre-build traffic volumes.

TABLE 3-2
Daily Traffic Volume Summary

Segment	Before Condition (1980)	After Condition (2000)
I-494 to US 169	40,000 vpd	109,000 vpd
US 169 to MN 100	50,000 vpd	133,000 vpd
MN 100 to I-94	80,000 vpd	145,000 vpd

Historic daily traffic volumes (1972 to 2002), obtained from the Mn/DOT Office of Transportation Data and Analysis.

The increased traffic volumes might be attributed to growth outside the corridor—particularly in the suburbs west of the corridor; growth and redevelopment in the corridor; and shifting of traffic from roadways parallel to I-394.

3.2.2 Travel Speeds

Even with the spike in traffic volumes, average travel speeds in 2000 were still between 2 and 25 mph higher than in 1980 (pre-construction) (see Table 3-3).

TABLE 3-3
Peak Period Travel Speed Summary

	Segment	Before Condition (1980)	After Condition (2000)*
Morning Peak Period - Eastbound Traffic	I-494 to US 169	38 mph	63 mph
	US 169 to MN 100	35 mph	38 mph
	MN 100 to I-94	37 mph	47mph
Afternoon Peak Period - Westbound Traffic	I-494 to US 169	41 mph	62 mph
	US 169 to MN 100	37 mph	39 mph
	MN 100 to I-94	39 mph	42 mph

*NOTE: Travel speeds for vehicles in the high occupancy vehicle (HOV) lanes were not included when determining the average travel speed. Including vehicles in the HOV lanes would result in slightly higher average travel speeds.

3.2.3 Traffic Operations

Traffic engineers estimate the quality of traffic operations using the concept of Level of Service (LOS). LOS is presented in the form of a letter grade (A through F, like an academic report card). LOS A indicates no congestion, C is approaching congestion, and F represents extremely congested conditions. Figure 3-7 shows examples of these conditions.

Despite the significant increase in daily traffic volumes, analysis found that the Level of Service (LOS) experienced in the corridor "before" and "after" freeway conversion is approximately the same (LOS D, E, or F) (see Figure 3-8). This finding is consistent with the data in Section 3.2.2. Recent peak period travel speeds are higher than the 1980 peak period

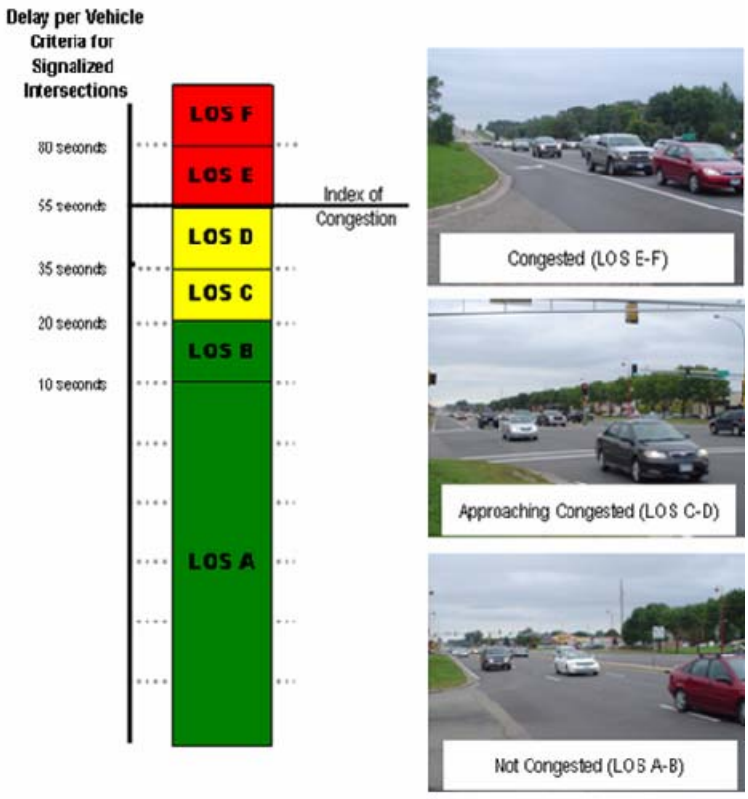


Figure 3-7: Level of Service Examples

travel speeds because freeway lanes have higher operational efficiency than facilities with at-grade signalized intersections.

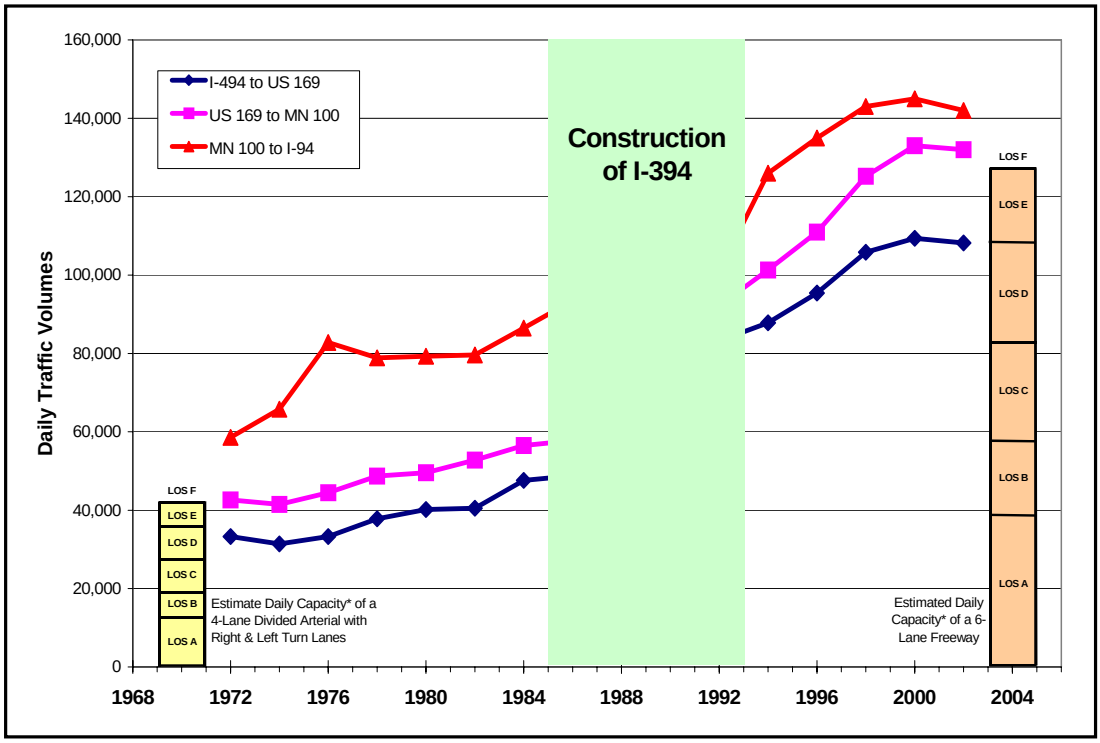


Figure 3-8: Before and After Level of Service on I-394 Corridor

Before freeway conversion, the US 12 corridor (between I-494 and Penn Avenue) operated at congested LOS E or F (see the left side of Figure 3-8). Immediately after construction, the corridor was still operating LOS D or E due to the large increase in volumes that occurred towards the end of construction. As of 2004, approximately 20 years after construction began, traffic volumes are such that the entire corridor operates at LOS E or F (see the middle and right sections of Figure 3-8).

3.2.4 Before and After Safety Conditions—Crashes

Despite increased traffic volumes, there are fewer crashes on I-394 than US 12—an average of 60 fewer crashes per year (see Table 3-4).

TABLE 3-4
Average Number of Injury and Fatal Crashes Per Year Before and After Construction of I-394

Crash Severity	US 12 (Two Year Average)*	I-394 (Eleven Year Average)*
Fatal Crash	2	1
Injury Crash	172	109
Major Injury	19	3
Moderate Injury	65	26
Minor Injury	88	80

TABLE 3-4
Average Number of Injury and Fatal Crashes Per Year Before and After Construction of I-394

Crash Severity	US 12 (Two Year Average)*	I-394 (Eleven Year Average)*
Total Crashes	**174**	**110**

* US 12 fatal and injury crash records from 1984 & 1985; I-394 records from 1992-2002 (Mn/DOT Office of Traffic, Security, and Operations)

Injury crashes are categorized based on the severity of the injuries sustained, as major, moderate and minor. The majority of reduction in crashes occurred in the major and moderate injury crash types—the two most severe injury crash types. There was also a reduction in minor injury crashes. The number of fatal crashes also dropped from an average of two per year before freeway conversion to one fatality per year.

3.2.5 Travel Times

3.2.5.1 Trips from Metropolitan Area to the Study Corridor

The average trip length for all trips from the Minneapolis/St. Paul metropolitan area to the study corridor increased from 4.1 miles in 1980 to 6.5 miles in 2000.[2] This trip length increase is partially explained by the increased travel distance on the local road system (i.e., frontage roads) resulting from the change in access when I-394 was built. The increase can also be explained by people selecting longer distance trips on the regional road system (i.e., US 12 of I-394).

3.2.5.2 Travel Times to and from Select Parcels

Changes in travel times to and from individual business parcels located along the study corridor between 1980 and 2000 were also studied. (The aggregate results of the parcel-level studies are discussed in Section 4). Before and after travel times for individual parcels were computed for arriving and departing drivers in both east and westbound traffic. Travel time estimates were developed using distance, travel speed, acceleration and stops at controlled intersections. Distances were measured using aerials provided by Mn/DOT's Office of Land Management.

This analysis revealed that travel time to and from the selected parcels on the local road system increased on average between one and four minutes after conversion to I-394; although some parcels experienced travel time increases as great as six minutes. Increased travel times on the local road system likely occurred for the following reasons:

- Closure of at-grade intersections and conversion of several intersections into interchanges increased travel distances.
- Changes to the frontage road system increased the distance between corridor businesses and the regional road system.

[2] Source: 1980 and 2000 Travel Behavior Inventories (TBI).

- Installation of traffic signals and STOP signs on the local road system to accommodate increasing traffic in the area increased travel times.

While trip times on the local road system increased, travel times to and from the selected parcels on the regional road system decreased an average of three to five minutes (see Table 3-5).

TABLE 3-5
Before and After Freeway Conversion Travel Time Changes (1980-2000) for 17 Sample Locations

Indicator	To/From East	To/From West
Mean Change	-6% (~ 1 minute faster)	-5% (~ 1 minute faster)
Median Change	-7% (~ 1 minute faster)	+1% (~ 10 seconds slower)
Number of Locations with Improved Travel Times	12	8
Number of Parcels with Worse Travel Times	4	9
Number of Parcels with No Change in Travel Times	1	0
Number of Locations with Large Positive Changes in Travel times (over 2 minutes faster)	6	3
Number of Locations with Large Positive Changes in Travel times (over 2 minutes slower)	2	4
Number of Locations with Small Changes (within 2 minutes, either faster or slower)	9	10

Note: Typical total trip times on I-394 are 15-20 minutes. Trip times include "line haul" and "access" components.

Overall, round trip travel times for entire trips (both local and regional roadway network) generally decreased for the parcels studied. However, increases were estimated for a few parcels; these increases were generally minor and were limited to one or two minutes.

3.3 Land Use Changes: Before and After Conversion

An analysis of land use change along the I-394 corridor between 1980 and 2000 was completed for this study. Two approaches were used in the analysis—one qualitative, based on land use planning documents obtained from cities located along the I-394 corridor, and one quantitative, based on geographic information system (GIS) land use data obtained from the Metropolitan Council. This data was used to determine land use changes within a quarter mile on each side of I-394 for the years 1984, 1990, and 2000.

3.3.1 General Land Use Changes in Cities

The cities closer to the urban core of Minneapolis are now almost fully built out, but over time, land uses may change due to reclassification or redevelopment. Minneapolis is located just to

the east of this study corridor. The cities studied along the I-394 corridor include St. Louis Park, Minnetonka, and Golden Valley (see Figure 1-1).

GIS analysis was used to determine land use changes for the three cities through which the study corridor passes—St. Louis Park, Minnetonka, and Golden Valley—as well as for the entire study corridor. There are roughly 1,300 acres included within a ¼ mile buffer around I-394. This was the entire area used for the land use change analysis.

In 1984, around 36 percent of the buffer was developed as commercial land, 27 percent was vacant, and 20 percent was in single-family residential land use. By 2000, there had been a 60 percent decline in vacant land, a 19 percent decline in single-family residential land use, and a 13 percent increase in commercial land use.

Overall, commercial land uses has increased more than other land uses along I-394. The corridor has increasingly come to be dominated by commercial land development, which now makes up 40 percent of the land use. Commercial land use increased by 61 acres, from 463 acres in 1984 to 524 acres in 2000. Much of the new commercial development (since 1984) occurred in Minnetonka. Industrial land use increased from 65 acres in 1984 to 81 acres in 2000, an increase of 16 acres. The land use trend along the corridor is an evolution from residential to commercial uses. The land use analysis findings for the cities in the study corridor are presented below:

- ***St. Louis Park***—Commercial land use increased along I-394 through this city between 1984 and 2000. 114 acres were used for commercial purposes in 1984; this increased to 133 acres by 2000. There was also a small increase in industrial land use between 1984 and 2000.
- ***Minnetonka***—Commercial land use increased by a total of 59 acres from 1984 to 2000. In 1984 there were 210 acres of commercial land use, increasing to 269 acres in 2000. Multi-family residential use increased by 29-acres during this same time period.
- ***Golden Valley***—Unlike the other corridor cities, Golden Valley saw a slight decrease in commercial land use along the study corridor between 1984 to 2000. The 139 acres of commercial use in 1984 dropped to 122 acres in 2000. Industrial land use increased from 53 acres in 1984 to 63 in 2000, which may explain some of the commercial land decline.

3.4 Demographic and Economic Overview

I-394 is a major commercial corridor for the western Twin Cities suburbs. This has been an important corridor for decades, predating its conversion to a freeway. The corridor is influenced by several elements, including land use, commuter traffic patterns, demographics, and the local business environment. The land use and transportation issues discussed in previous sections directly influence socio-economic patterns.

A variety of socio-economic data were analyzed to identify relevant trends along I-394 over the last two decades, including the interplay of land use, transportation, and socio-economic issues. Census tracts located along the I-394 corridor in the cities of Minnetonka, Golden Valley, and St. Louis Park were used as a unit of comparison for the socio-economic analyses.[3] Several

[3] Census tracts used in this analysis included 218, 219, 220, 221.01, 221.02, 222, 264.02, 264.03, 264.04, and1051.

comparisons were made at the municipal, county, and state levels. The following sections address the economic and demographic characteristics that impact this corridor. This macro-level analysis is intended to set the stage for the micro-level parcel studies, the findings of which are documented in Section 4.

3.4.1 Population

The population of the Twin Cities metropolitan area has grown over the past 20 years. The population of Hennepin County, where the I-394 corridor is located, grew by 19 percent from 1980 through 2000; the largest increase occurred during the 1980s. The cities of Minnetonka and St. Louis Park both saw population growth from 1980 to 2000, while Golden Valley experienced a slight decrease. Minnetonka, which grew by 33 percent, experienced the most substantial growth at rates higher than the state and the county. St. Louis Park and Golden Valley were largely built-out by 1980. The population of St. Louis Park grew by only three percent, while the population of Golden Valley actually decreased by eight percent between 1980 and 2000.

Collectively, the census tracts bordering the study corridor experienced a slight overall decline in population from 1980 to 2000. The corridor population grew by nearly eight percent from 1980 to 1990, and then declined by nearly nine percent during the 1990s. This trend, compared to the cities, indicates that the I-394 corridor has turned over into a primarily commercial area. That is, residential land uses have been displaced by higher density uses, such as retail and office development.

Between 1980 and 2000, the cities of Minnetonka, Golden Valley, and St. Louis Park collectively made up between ten and eleven percent of Hennepin County's total population; the census tracts that border the study corridor made up between 3 and 4 percent of the county's population. These statistics suggest that the area was largely built-out by 1980 and reflect a transition from residential to commercial and other, more intense non-residential land uses.

3.4.2 Income

3.4.2.1 Median Family Income

Table 3-6 includes the changes in median income for the state, Hennepin County, and the three study corridor cities. The year 2000 median family incomes for all jurisdictions in the table are well above the 2000 national median of just over $50,000. While the cities experienced increases at lower rates than that of the county and state, their initial income levels were significantly higher, and remained notably higher in 2000.

TABLE 3-6
Changes in Median Family Income from 1980 to 2000

	1980	2000	Percent Change (1980-2000)
Minnesota	$25,000	$57,000	128%
Hennepin County	$25,000	$66,000	164%
St. Louis Park	$44,000	$63,000	43%
Golden Valley	$56,000	$76,000	36%
Minnetonka	$55,000	$85,000	55%

Median family income for those living within the census tracts along the I-394 corridor increased nearly $50,000 or approximately 207 percent, from 1980 to 2000.

This is an even greater increase than experienced by the state, county, and cities. These median family income figures indicate that the I-394 corridor and the surrounding area have been and remain relatively affluent.

3.4.2.2 Per Capita Income

Table 3-7 shows the change in per capita income between 1980 and 2000. Similar to median family income, the three cities showed smaller percentage changes than the state and Hennepin County. However, the initial, 1980, per capita figures were significantly higher than that the state and county figures. The selected census tracts making up the corridor also experienced the most notable increase in per capita income, which jumped by over 250 percent over the twenty year period, increasing from $10,154 in 1980 to $35,593 in 2000. Once again, these statistics indicate that the I-394 corridor and the surrounding area provide a strong economic base to support local business activity.

TABLE 3-7
Per Capita Income Changes 1980 to 2000

	1980	2000	Percent Change (1980-2000)
Minnesota	$8,665	$23,198	168%
Hennepin County	$9,403	$28,789	206%
St. Louis Park	$17,917	$28,970	62%
Golden Valley	$20,178	$34,094	69%
Minnetonka	$19,509	$40,410	107%

3.4.3 Retail Activity

Retail sales, use taxes from the State of Minnesota, and sector employment data from the US Census Bureau were analyzed to provide a better perspective of the local business environment and vitality in and around the I-394 corridor. As the following data shows, retail activity, firms, and sales tend to be volatile over time.

3.4.3.1 Retail Firms

Between 1986 and 2000 there was little growth in the number of retail firms in Minnesota (a net increase of only 2,124 retail firms statewide). The state did experience an increase between 1988 and 1992. After 1992, the state maintained a relatively stable number of firms until the late 1990s, when it experienced a sharp decline. Hennepin County has experienced similar fluctuations with short periods of rapid growth and decline. Between 1986 and 2000, Hennepin County experienced a net loss of 500 retail firms; Golden Valley and St. Louis Park also experienced slight decreases in the number of retail firms from 1986 to 2000; and Minnetonka experienced a net gain of 15 firms.

The overall percentage of retail firms as a share of all businesses has declined in recent years. This reflects the rise of service firms in Minnesota that provide a variety of non-retail services to businesses and households. In 1986, retail firms accounted for nearly half of all the total firms in the state. By 2000, this dropped to 43 percent. In Hennepin County, retail as a percentage of total firms decreased from 48 percent in 1986 to just 40 percent in 2000. As shown on Figure 3-9, of the three cities along the I-394 corridor, Minnetonka had the highest initial percentage of

retail firms in 1986, however similar to the other corridor cities, the percentage of retail as a share of total businesses decreased by 2000.

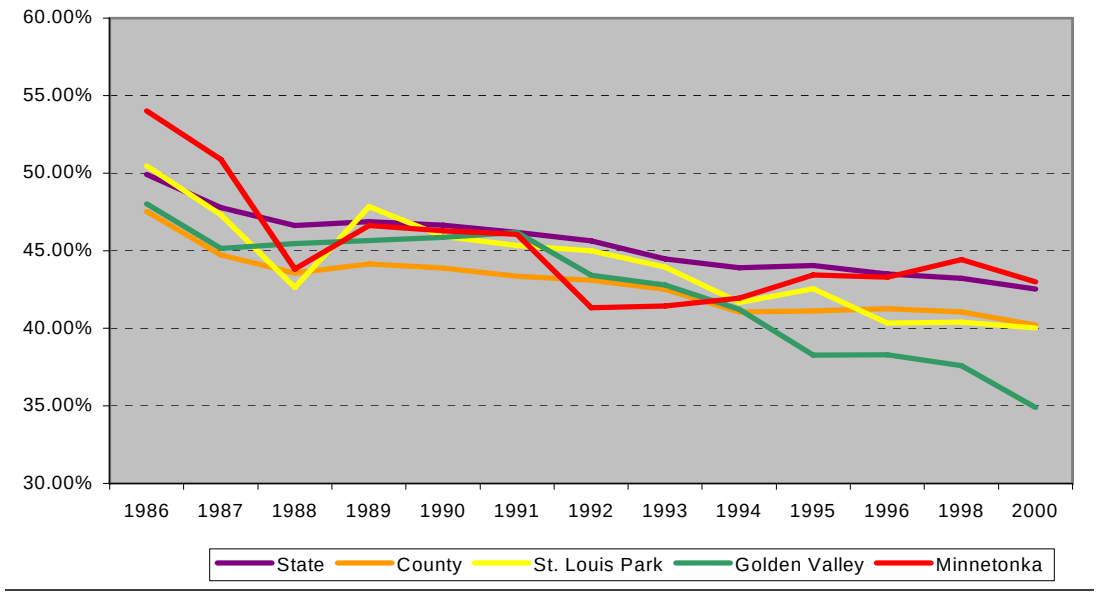


Figure 3-9: Percentage of Retail Firms Relative to Total Number of Firms

Retail firms in the three cities make up approximately ten percent of Hennepin County's retailers. In 1986, Minnetonka had the largest percentage, with just under five percent. From 1986 to 2000, Minnetonka's share of retail has remained relatively constant, climbing to over five percent by 2000. Today, as in 1986, Golden Valley makes up nearly two percent of the county's retail firms. Retail in St. Louis Park made up nearly 3.5 percent of the County's retail firms in 1986, but decreased to approximately three percent by 2000. These numbers reflect healthy business environments in and around the corridor even during significant urbanization of other areas of Hennepin County from 1980 through 2000.

3.4.3.2 Retail Employees

The number of retail sector employees working in study corridor cities and Hennepin County declined between 1992 and 1997. Overall, Hennepin County's retail sector employees decreased 26 percent, from 106,271 to 78,226; Golden Valley experienced a loss of 32 percent; Minnetonka saw an 11 percent decline; and St. Louis Park saw a loss of 28 percent. Golden Valley and St. Louis Park saw decreases in their share of the county's retail employment, while Minnetonka increased its share from 8 percent in 1992 to ten percent in 1997. As will be seen in a later section, retail employee losses were largely replaced by office employees.

Hennepin County's retail sector annual payroll increased by about 8 percent (to $1,409,584,000) between 1992 and 1997. Golden Valley saw a more significant change, with an increase of approximately 23 percent (to $45,351,000). Minnetonka experienced slightly less growth, increasing its total city-wide annual retail payrolls to $116,502,000 by 1997. St. Louis Park experienced the least amount of growth, in which its annual payroll was increased by 7.3 percent, increasing from $64,921,000 in 1992 to $69,671 five years later.

Between 1992 and 1997, Minnetonka, Golden Valley, and St. Louis Park collectively increased their share of the Hennepin County annual payroll. In 1992, Minnetonka held 7.6 percent of the annual payroll for the county; this increased to 8.3 percent in 1997. In 1992, Golden Valley contributed 2.8 percent of the county's annual payroll; this increased to 3.2 percent by 1997. St. Louis Park experienced a very slight decrease in its share from 1992 to 1997.

3.4.3.3 Retail Sales

The state of Minnesota experienced near-continuous growth in retail sector gross sales between 1986 and 2000. Averaging growth of nearly six percent each year, the total increase for this fourteen year period was 108 percent. Hennepin County also experienced an overall increase in gross sales, increasing by 54 percent from 1986 to 2000. Hennepin County experienced rapid growth from 1986 to 1990, but from 1990 to 1992 saw a significant decrease in gross sales. Starting in 1992, the county experienced continuous growth in sales through 2000.

The three cities all experienced increases in gross retail sales from 1986 through 2000. St. Louis Park saw a large drop in gross sales beginning in 1988 and an increase in 1989, which remained relatively constant until a small decrease from 1991 to 1993. This was followed by an increase that lasted through 2000. Ultimately, the city experienced a growth rate of 42 percent between 1986 and 2000. Golden Valley experienced relatively volatile gross sales figures over the fourteen-year period, which fluctuated the most between 1988 and 1993, then increased through 1998. Golden Valley experienced an overall growth rate of 105 percent over this period. Minnetonka experienced fluctuations in gross sales over the fourteen-year period similar to Golden Valley, but ultimately experienced an overall growth of 108 percent.

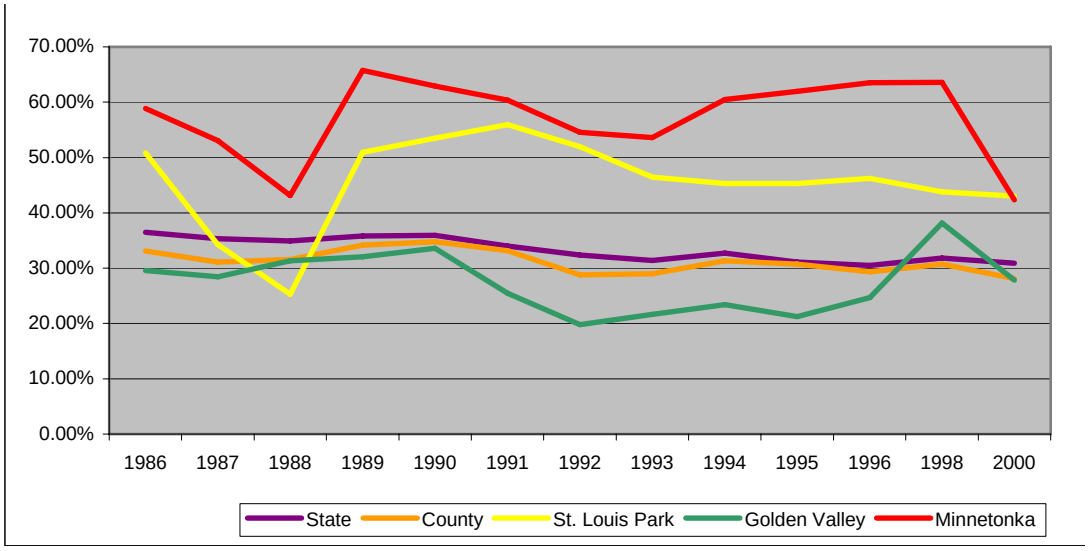


Figure 3-10: Retail Sales as Percentage of Total Gross Sales

Figure 3-10 illustrates that retail sales as a percentage of the total gross sales decreased slightly between 1986 and 2000 for the various jurisdictions. The state began this period in 1986 with 36.5 percent of its total gross sales considered retail. Throughout the period the percentage remained relatively constant with minor fluctuations, although decreasing in 2000 to about 31

percent. Hennepin County retail sales were 33.1 percent of its total sales in 1986; this dropped to 28.1 percent by 2000.

Similar to the state and county, the three I-394 corridor cities also saw decreases in their retail share of the total gross sales. Minnetonka saw the most fluctuation over the fourteen-year period. The city's 1986 retail percentage was 58.9 percent. This went down to 42.4 percent by 2000. St. Louis Park experienced nearly the same fluctuations as Minnetonka. St. Louis Park's initial percentage of retail total sales was 50.8 percent in 1986. This number fell to just above 43 percent in 2000. Golden Valley also experienced fluctuation in its percentage over this time. In 1986, 29.6 percent of the city's total gross sales were from the retail sector. By 2000, this number was 27.9 percent.

Figure 3-11 depicts the percentage change of the three selected cities as a percentage of Hennepin County's total gross sales for the retail sector. St. Louis Park and Golden Valley saw virtually no shift in their share of Hennepin County's total gross sales for retail sectors from 1986 to 2000. Minnetonka experienced more volatility, beginning the period with a 5.6 percent share and ended with a share of 7.6 percent by 2000. The data shown in Figures 3-10 and 3-11 illustrate that the retail sector activity in the study corridor has declined over the past 20 years.

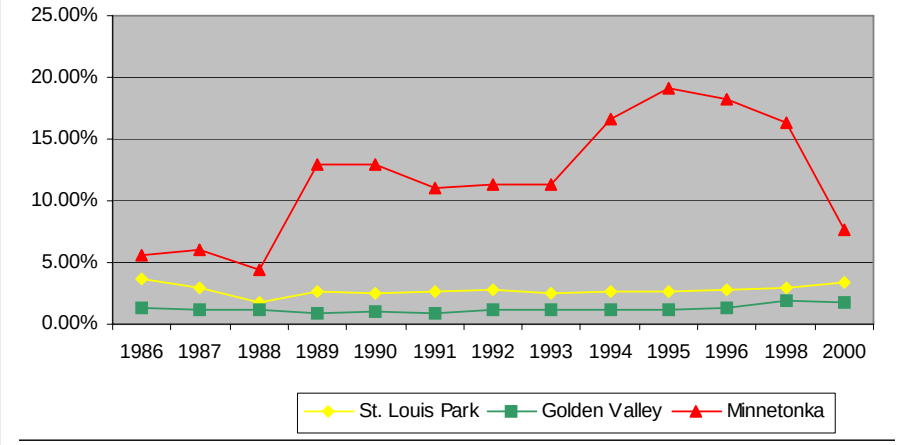


Figure 3-11: Percentage Share of Corridor City to County's Total Retail Gross Sales

3.4.3.4 Sales and Receipts

Annual sales and receipts were another data source used to understand the I-394 corridor's economic environment. Hennepin County and I-394 corridor cities all experienced increases in the number of sales and receipts from 1992 to 1997. Hennepin County sales and receipts increased over 35 percent in five years, from $10,823,604,000 to $14,615,786,000 in. Minnetonka experienced a similar increase, more than a 38 percent, resulting in $1,157,626,000 by 1997. Golden Valley experienced the largest percentage growth of 113 percent, with an increase from $448,679,000 in 1992 to $956,875,000 in 1997. St. Louis Park saw an increase of nearly 13 percent, resulting in $671,498,000 in retail sales and receipts by 1997. In addition, Minnetonka and Golden Valley also increased their share of the county total sales and receipts between 1992 and 1997. St. Louis Park experienced a slight decrease.

The data shows that the retail sector activity declined along in the study corridor between 1986 and 2000. Hennepin County and the three cities have all experienced a decline in the percentage

of retail firms over this time. Similarly, each entity has experienced a slight decrease in the percentage of retail as a portion of their total gross sales. Nonetheless, the cities have remained relatively stable in their share of the county's total number of retail firms and their shares in the county's retail gross sales. Indicators of retail activity point to a healthy business environment along the corridor, although it does appear that the I-394 corridor shifting from a functioning primarily as a retail corridor to functioning with a mix of retail and office land uses.

3.4.4 Employment

Changes in employment between 1990 and 2000 were examined to provide a better understanding the study corridor.[4] Employment estimates were aggregated by traffic analysis zones (TAZs) provided by the Metropolitan Council, which uses the zones for transportation modeling and planning purposes.[5] The TAZs used are shown in Table 3-8 below. The TAZs used in this analysis are similar in size and configuration to census block groups used in earlier analyses. The Metropolitan Council supplied employment totals by TAZ as well as retail and non-retail employment estimates.

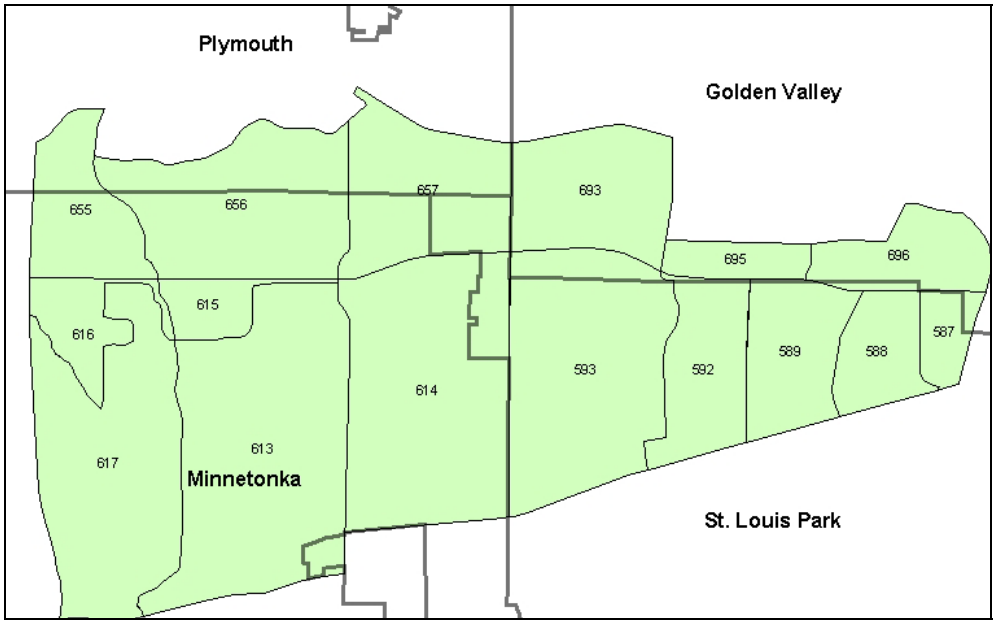


Figure 3-12: I-394 Traffic Analysis Zone (TAZ) Locations

Results of the employment change analysis (see Table 3-8) show that total employment within the TAZs along I-394 grew significantly between 1990 and 2000; the number of jobs located along the corridor increasing by more than 9,000, a 29 percent increase. The density of employment (employees per acre) grew rapidly in the corridor. The following figures show the distribution of change in retail and non-retail employment.

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[4] Comparable TAZ data were not available for 1980.

[5] The following TAZs were used for this analysis: 587, 588, 589, 592, 593, 613, 614, 516, 616, 617, 655, 656, 657, 693, 695, and 696.

TABLE 3-8
Total Change in Retail, and Non-retail Employment for I-394 Traffic Analysis Zones (TAZ) between 1990 and 2000

I-394 TAZ	Total Change in Non-Retail Employment (1990-2000)	Total Change in Retail Employment (1990-2000)
587	1254	-936
588	2433	191
589	-35	38
592	95	-45
593	1566	-348
613	-328	16
614	617	-183
615	1060	-625
616	-90	-1211
617	-111	-125
655	1097	138
656	535	657
657	4453	-318
693	-966	-100
695	896	159
696	10	-371
Corridor Total	**12486**	**-3063**

As the figures show, the composition of employment changed dramatically. For example:

- Retail employment in the entire corridor decreased by about 3,000 jobs. This reduction was largely concentrated in two TAZs—numbers 587 and 616.
- Most of the net decline in corridor employment between 1990 and 2000 occurred in TAZs 616 and 693.

These trends suggest that the study corridor it is becoming more oriented toward non-retail (e.g. office) activities. This is the case particularly in the middle of the corridor (the western edge of St. Louis Park) and in TAZs north of I-394, where non-retail employment has grown dramatically.

3.4.5 Business Turnover

A detailed business turnover analysis for land parcels with addresses fronting I-394 was completed. The goal of this analysis was to identify businesses that were created (or that moved into the corridor), businesses that failed or left the corridor, and businesses that remained in the

corridor (perhaps with a name change) over a long period of time. A turnover rate (rate of businesses departing the corridor) could then be calculated and compared with average turnover rates for the nation and Minnesota.

Business listing and type data were obtained from paper copies of business directories borrowed from a local public library. Data for 1980 and 1988 was documented in R.L. Polk Directories while data for 2003 was in the Coles Directory. Unfortunately, directories were not available for 1990 and 2000, which would have been ideal study years. All business and address data were then entered in spreadsheets. The databases for three years include the following entries:

- Street address (all are along Wayzata Blvd., which was the street name for US 12 before it was upgraded to I-394.) The address range studied began roughly at 4000 and ended roughly at 13000.
- Generalized land use (e.g. retail, office, residential)
- Business name
- Business description

Although there are about 1000 distinct street addresses in the corridor, these addresses actually occur on about 290 land parcels. In other words, there are many multi-tenant developments and buildings along I-394. This is to be expected in a corridor populated by office buildings and small shopping centers. Key results are presented following.

- **Postal Addresses Have Expanded Dramatically**: There are currently hundreds more street (postal) addresses along the I-394 corridor than there were in 1980, which indicates new land development. This is consistent with the land use results presented earlier.
- **Vacant Addresses Have Declined Dramatically**: The number of vacant addresses (no apparent business activity at a postal address) along the corridor declined from about 145 in 1980 and 1988 to 35 by 2003. About 10 percent of potential business addresses in the corridor were vacant in 2003, which is down from around 40 percent vacant in 1980. Most of the addresses still vacant in 2003 were in St. Louis Park. The overall commercial vacancy rate in the I-394 Corridor in 2003 was very low.
- **New Businesses Have Steadily Been Added**: About 30 to 40 net new business listings occurred between 1980-1988 and 1988-2003. Between 2 and 4 new businesses were created *on a net basis* along the I-394 corridor every year since 1980. It is not possible to tell from the data whether these are newly created businesses or just new businesses for the corridor.
- **Multi-Tenant Parcels Are Growing**: The number of land parcels with at least 10 businesses listed (e.g. multi-tenant buildings) has increased since 1980 and now represent almost 15 percent of all the business parcels along I-394. Most of these multi-tenant buildings are in St. Louis Park. Parcel addresses with only one business occupant have declined since 1980, however, these still represented half the parcels in 2003. This indicates that land use development intensity is increasing in the corridor.
- **Business Turnover Comparisons Are Positive**: Over 20 percent of the addresses that had a business located at them in 1980 experienced no significant change in business occupant

between 1980 and 2003. While 20 percent seems low, this figure is higher than the typical business turnover rate for the state of Minnesota, which is around 8 percent per year. With an 8 percent turnover rate, about 15 percent of businesses would be expected to remain unchanged after 23 years—the period between 1980 and 2003. This means that the business locations along I-394 have been more stable than is typical for Minnesota. (This is a conservative analysis in that a business either failing outright or moving from the I-394 corridor is considered a "failure" for comparative purposes.) Minnesota's business failure rate is generally lower than that for the nation as a whole.

- **Business Turnover Varied Considerably By Business Type**: Essentially all service business along the corridor (predominantly legal, financial, medical, and miscellaneous business services) tuned over between 1980 and 2003. The most stable businesses along the corridor were restaurants and automobile dealerships. Restaurant locations tended to remain restaurants and auto dealerships tended to remain auto dealerships. A few restaurant buildings turned over in terms of the name or chain affiliation.

  Out of all the parcels studied along I-394, all but 14 of the 290 changed in *some* way between 1980 and 2003. The fact that 95 percent of the parcels changed in some way (new tenants, new business name, new business type, new land use, or new building) indicates just how dynamic the small business sector is in a metro area such as Minneapolis-St. Paul. The most dynamic and changeable parcels along I-394 were those classified as multi-tenant "strip malls" and office buildings. It was not uncommon for such locations to experience 100 percent turnover between 1980 and 2003. However, this is not very surprising in that such buildings are developed with tenant flexibility in mind.

3.4.6 Land Values

Seventy-five records of raw commercial land sales between 1967 through 1996 were obtained for land parcels within a quarter mile of the I-394 study corridor from the archives of Towle, Turley, Martin, and Tucker, a Minneapolis commercial real estate services firm. Price data for raw land is rather difficult to find (other than for agricultural land in rural areas), so this was valuable study data. Each of the 75 properties was zoned for commercial use. The properties were vacant, in the process of development, or redevelopment, therefore, no structures were included in the sales transactions.

3.4.6.1 I-394 Corridor Land Values

The parcel size was available for the seventy-five properties along I-394, which allowed for calculation of a per square foot value. The values were graphed and a trend line was fitted to the resulting scatter plot (see Figure 3-13). The best fitting trend line was non-linear—an exponential curve that indicated an average land price growth rate of 8.2 percent for the 1967 through 1996 period. The trend line closely fit the data, explaining about 70 percent of the variation in prices over time.

In the late 1960s, commercial land in the I-394 sold for around $1.00 per square foot. By the early 1980s, prices had risen to around $4.00 per square foot. In the mid-1980s (about the time of construction of I-394), variation in land values increased. The spread of values ranged from $2.50 up to $10.00. By 1990, the variation in prices had decreased and the prices followed the

historic 8.2 percent growth trend more closely. By the late 1990s, commercial land sales along I-394 all exceeded $10.00 per square foot for raw or redeveloped land.

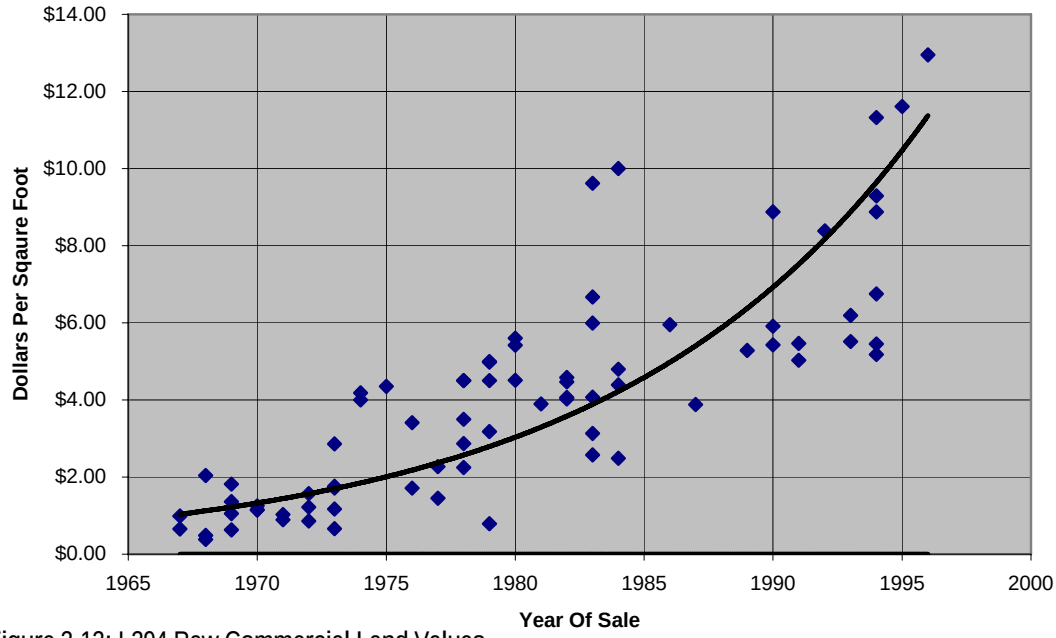

Figure 3-13: I-394 Raw Commercial Land Values

3.4.6.2 Land Value Comparison with I-494

For comparative purposes, data for 70 similarly situated parcels along I-494 in Bloomington and Richfield were obtained and plotted (see Figure 3-14) from the same commercial real estate company records.

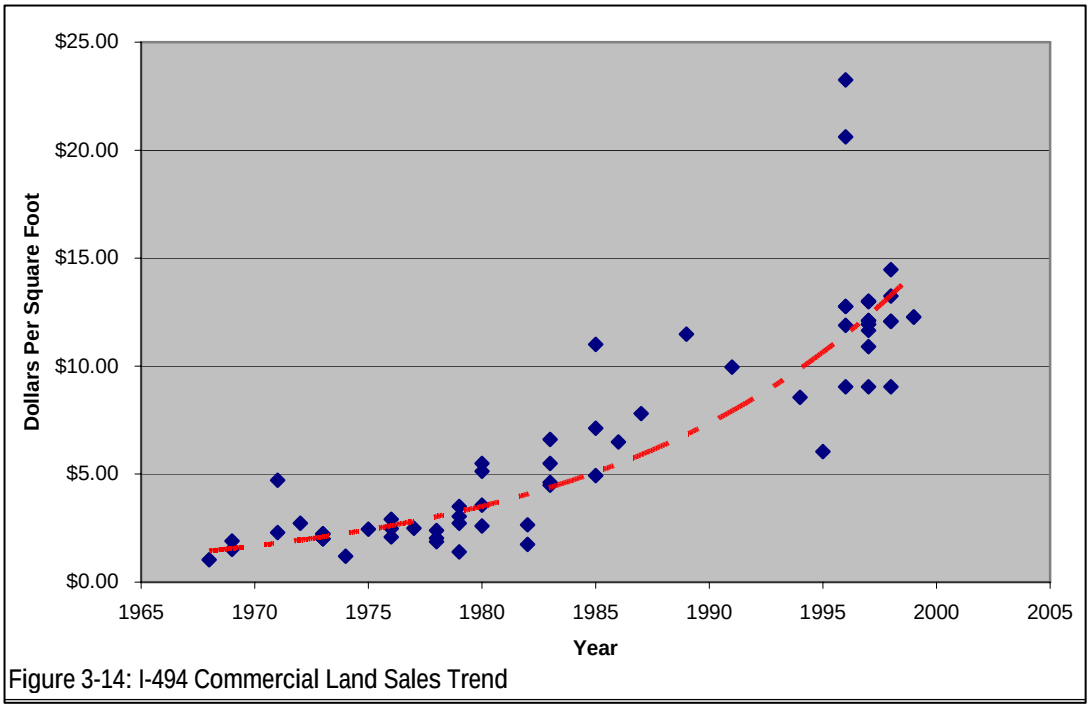

Figure 3-14: I-494 Commercial Land Sales Trend

I-494 is the freeway that provides access for the Mall of America and to the Minneapolis-Saint Paul International Airport and is considered to be one of the most desirable places to locate a business in the metro area. Data for this corridor were available for a period between the late 1960s and 2003. These data show a remarkably similar trend to those along I-394. In the late 1960s, commercial land along I-494 sold for around $1.00 per square foot.

3.4.6.3 Adjusted I-394 Land Values

The period between 1965 and 2004 has been one of considerable inflation in both consumer prices and the cost of capital assets such as land. In fact, prices have roughly quadrupled since 1965, according to the United States Gross Domestic Product (GDP) Deflator. (The GDP Deflator is considered a better measure of the change in cost of capital assets than the more familiar Consumer Price Index). Something that costs $1.00 today would have cost 25 cents in 1965 if inflation were the only component of price change.

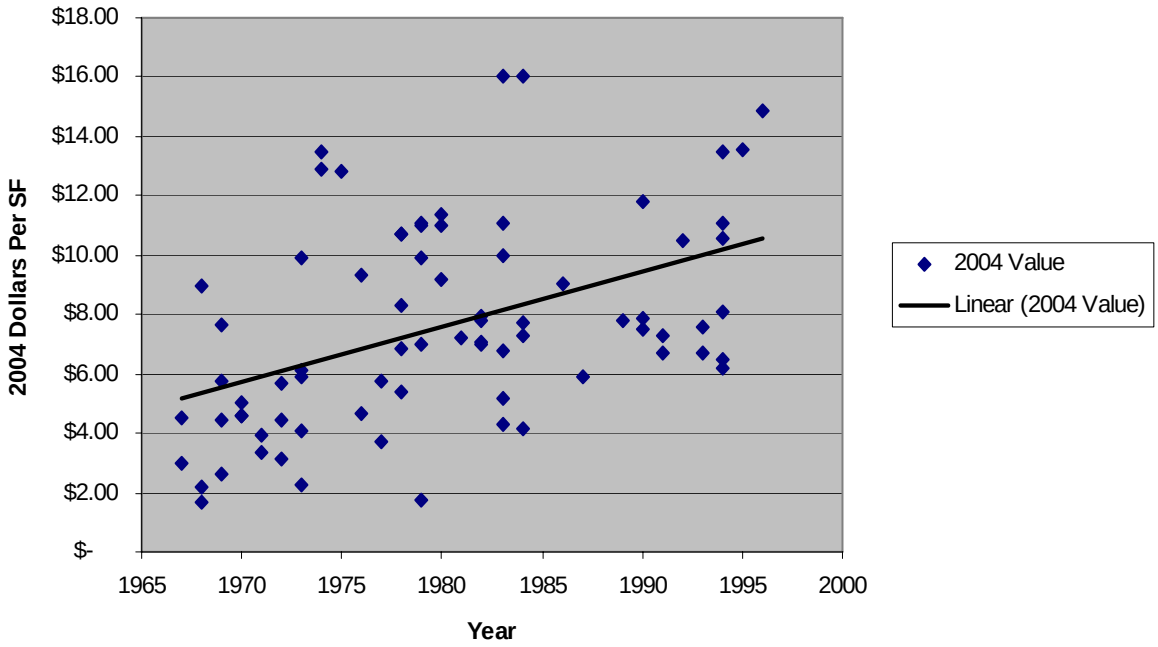

Figure 3-15: I-394 Deflated Land Values

Once inflation is controlled for, much of the exponential increase in I-394 land prices is accounted for. A linear trend line, shown in Figure 3-15 is now the best fitting line through the data. However, there is still a discernable upward linear trend in land price per square foot. In 2004 dollars, a typical square foot of raw commercial ground along I-394 would have sold for these approximate prices in the following years:

- $5.00 in 1967
- $6.50 in 1975
- $7.50 in 1980
- $8.25 in 1985
- $9.50 in 1990

- $10.25 in 1995
- $12.00 today

In other words, the real (inflation-adjusted) price of raw commercial land along I-394 has nearly doubled since 1980 and nearly tripled since 1967. Of course, as Figure 3-13 shows, there is considerable variation in the prices per square foot of individual parcels; the prices quoted are based on the best-fitting linear trend-line through a scatter plot of data.

Since the non-inflation adjusted land price values for the I-494 comparison corridor are similar to the non-adjusted I-394 values, the same general price trends apply in the corridor when inflation is accounted for. The only additional thing that can be said in the case of I-494 is that very recent (post-2000) sales in that corridor are near $15.00 per square foot—triple the 1967 inflation-adjusted level. Commercial land values generally follow a gradient, with the highest values in the central business district (CBD) and at other highly accessible points, such as transportation network nodes (e.g. near freeway interchanges). As the last figure indicates, Minnesota follows this trend nicely.

3.4.7 Conclusion

In conclusion, the various socio-economic data indicate some general trends, including:

- Population, employment, retail activity statistics show that the area in and around the Interstate 394 Corridor was largely built out in terms of residential use by 1980 and continued for the next 20 years to infill and transition from residential to "higher-intensity" uses, such as retail and office.
- There was very little land in the corridor devoted to industrial uses in the before period, and none afterward.
- The employment analysis shows that office employment is replacing retail, especially near the middle of the study corridor.
- The corridor is prosperous as indicated by high incomes.
- Retail activity and employment has fluctuated over time, but this is not uncommon.
- The business turnover analysis shows that business vacancies and turnover are both low.
- Land value trends have been positive and are comparable to another freeway corridor (Interstate 494) in the metro area.

SECTION 4

Before and After Freeway Conversion - Business Level Comparison

4.1 Introduction

After reporting on the macro-level status of the region in Section 3, the study team conducted a parcel-level analysis of businesses located in the I-394 corridor. A total of twenty-two parcel studies were completed on businesses either currently or formerly located along the corridor. The businesses are sub-divided into the nine business types listed below; the number of businesses examined in any one category is also noted:

- Office (4)
- Auto Dealerships (2)
- Sit down restaurants (5)
- Fast food restaurants (2)
- General Retail (2)
- Strip commercial (2)
- Big box retail (2)
- Hospitality (2)
- Convenience/Gas (1)

Over half of the businesses examined for the parcel studies were in existence at the time US 12 underwent conversion to I-394; the remainder were built after I-394 was completed or went out of business either during or after construction. Business names and details that would identify a business are not included in the discussion below in order to protect the privacy of the study participants.

To the extent possible, the following information was obtained for each parcel:

- General parcel background information, including business type
- Historic estimated market values
- Travel time comparisons before and after freeway conversion to and from the parcel; changed travel paths were also considered
- Interviews with a business representatives were completed, if possible; [1] (a copy of the interview script is attached to the end of this section)

As discussed in Section 2, quantifying the economic conditions of individual businesses before and after the construction of I-394 is difficult without sales data for these businesses. Similar to other studies, sales data was unavailable for use in this study.

[1] ISU-CTRE contacted twenty businesses for personal business interviews; fourteen interviews with business owners and managers were successfully completed. Some businesses opted not to participate in the interviews. The interviews were conducted both in person and by telephone.

4.2 Parcel Study Findings

The following sections discuss the overall conclusions and lessons learned from the parcel studies. The results of these studies are summarized by business type. Specific information about the parcels was not included in this summary to protect the privacy of those businesses.

4.2.1 Office

Four office properties were studied, all of which were located along US 12 before freeway conversion. Today, three of the sites remain profitable, largely occupied office facilities. The fourth office, while still in business, has moved elsewhere; the former office site is now a car dealership. The appraisal analyses for the three remaining office parcels show a steady average increase in value. Appraised values for the three office complexes have also steadily increased since 1980.

4.2.1.1 Travel Time Analysis Results

The geometric changes in access in and around the four office parcels changed considerably in some cases, which usually lengthened the distance traveled on the local road system. Nonetheless, when both local and regional networks are factored, total trip times decreased in some cases and increased only slightly in others. In general, travel times seem to be less of an issue for office facilities than other business types. This may be because offices are not impulse destination. Also, there are generally fewer trips to and from these parcels on a daily basis compared to retail and restaurants. It is notable that one office site that underwent a considerable access change during the construction of I-394 has experienced a steadily increasing estimated market value since 1980, growing faster on average than the city in which it is located.

4.2.1.2 Interview Results

Representatives from two office facilities were interviewed about the impact of the freeway conversion on their business. The comments provided during the interviews were positive about the locations of their businesses. These benefits include exposure, proximity to downtown Minneapolis, central location to multiple services, connectivity to the regional transportation network (including bus lines), and free parking. One property manager noted a very high occupancy rate. This was confirmed by a review of office space for lease in July 2004, which showed availability at this location was limited.

One property manager noted no negative effects from the I-394 conversion. The other manager noted that they occasionally receive negative comments from vendors and visitors who have some difficulty navigating the frontage road system and finding the correct address. Travel times were not mentioned as a problem in either interview.

4.2.1.3 Lessons Learned

In general, the viability of office uses is less dependent on access and visibility than other land uses, including commercial/retail. Rather, offices depend more on the overall economic characteristics of the corridor and the location. The I-394 corridor appears to have become a preferred location for offices to locate. Offices along this corridor are close to the Minneapolis

Central Business District (CBD), but feature lower costs and less congestion than the downtown CBD, as well as free parking. Below are some additional observations from the office parcel studies:

- As documented in Section 3, the value of land in the I-394 corridor has increased since 1980 to the point that it can be used for a "higher value" use, such as office (vs. industrial uses).
- The increase in offices and office workers (documented in Section 3) along the corridor has had a positive "trickle down" effect on other businesses, especially fast food and sit down restaurants.

4.2.2 Auto Dealerships

Two auto dealerships were studied in detail; both were involved in condemnation proceedings during construction of I-394. During condemnation, both businesses expressed concern that the I-394 project would be detrimental to business during construction. The auto dealers maintained that a significant percentage of their business is based on "impulse" purchases, which are made quickly and depend greatly on visibility. They were concerned that after construction was complete; their businesses would suffer from the loss of direct access and reduced visibility. At present, both dealerships remain at their same locations along I-394.

4.2.2.1 History and Appraisal Analysis Results

Both auto dealerships were present on the US 12 corridor before freeway conversion. Both auto dealerships have consistently had increasing estimated market values since 1980.

4.2.2.2 Travel Time Analysis Results

Travel times to and from one dealership decreased by between 4 and 8 minutes, while increasing by between one and two minutes for the other dealership.

4.2.2.3 Interview Results

One interview was conducted with an auto dealership representative. The individual interviewed characterized their location as somewhat positive, noting that being located along the high volume I-394 increased the exposure and familiarity of the dealership. The auto dealer representative noted that highway access was a very important factor in selecting this site to operate, especially for attracting customers, while not as important for vendors or employees.

On the negative side, the representative commented that the new corridor design moves traffic along more quickly than what is preferred by an automobile dealership. Also, the representative felt visibility was worse now and would prefer the pre-construction design.

The auto dealership was negatively impacted during the construction due to re-routing of traffic and of access to the dealership. In fact, access to the dealership changed frequently during construction, sometimes every few weeks. One dealership used variable message signs during construction to help direct potential customers to their location. The auto dealer representative did note that most of the negative impact of the reconstruction was due to construction staging, and this has improved since construction has been completed.

A downturn in the overall auto market coincided with the construction of I-394. The representative noted that import cars started taking a larger share of the automobile market in the United States around the time I-394 was constructed. This dealership had traditionally sold domestic cars, so the shift in preference to imported vehicles did impact the business. The auto dealer was of the opinion that "bad" timing, market factors and construction combined to have a negative impact on business. Business has remained "mixed" since the late 1980s.

4.2.2.4 Lessons Learned

Following are general lessons to be derived from the auto dealership studies.

- Dealerships also consider at least some of their business to be of an "impulse" nature, making visibility and access important.
- The exposure that comes from being located along a major corridor is a big plus for auto dealers.
- Major construction, such as what occurred on the study corridor, appears to have a significant impact on auto dealerships. These impacts seemed to have largely subsided after construction.
- A key to keeping these types of businesses healthy appears to be in their ability to make the transition during the construction project when customer access is complicated and visibility may be hindered.
- The ongoing history of auto dealerships along the corridor, including those studied, as well as the location of new dealerships to corridor suggests that I-394 is still a good place for this type of business. It appears that another key to the success of the dealerships is responding to changing markets, for example, the shift in preference from domestic to imported vehicles.

4.2.3 Sit Down Restaurants

Five sit-down restaurants along the I-394 corridor were studied—two were in business prior to the construction of I-394 and are still in business at the same locations today; one was operating prior to construction of I-394, but has since closed; the others were opened after construction was completed.

Like many businesses located along US 12, the two restaurants that went through the construction phase were concerned about how the change of the highway, particularly the removal of direct access and the construction phase would impact on their business. Both restaurants were involved in condemnation proceedings. Today, both properties remain functioning restaurants. However, one of the restaurants went out of business (when the entire chain folded). This restaurant was replaced on the same site by two new sit-down restaurants.

4.2.3.1 History and Appraisal Analysis Results

Five restaurants were included in the parcel studies. One of these businesses is closed; two were in business at the time of freeway conversion and remain in business; and two located to the corridor after construction. At the time the parcel studies were completed, four of the restaurants remained well-established and profitable. The appraisal analyses from these parcel

studies show that the estimated market values (EMV) of all five restaurants that were in place when this study was complete have steadily increased.

4.2.3.2 Travel Time Analysis

The travel time analysis showed that the changes in access in and around one of the restaurants did lengthen the trip by a few minutes, largely due to the "local network" trip from the parcel to the regional road system. The parcel analyses for the other three restaurants showed little change in travel times. Due to the higher number of trips and reliance on impulse visits, access routes and travel times seem more important to restaurants than for other uses, such as office space.

4.2.3.3 Interview Results

Representatives from all four existing restaurants were interviewed. These interviews revealed varied opinions about locating a business along the corridor. One Representative characterized their location as very positive; one characterized it as neutral, while two restaurants felt their locations were somewhat negative.

For the most part, the sit-down restaurants feel that the high traffic volumes and visibility associated with being located along I-394 provide more exposure and potential business, which is viewed positively. As noted in discussion of the office uses, these restaurants seem to benefit from being located in the area near several office buildings. Favorable demographics were also noted by one interviewee as a positive attribute of their location.

The most unfavorable comments received during the interviews were related to non-connectivity of the south frontage road system (Wayzata Boulevard) along which all four restaurants are located. Three representatives expressed significant concerns with poor accessibility. All four representatives commented that they receive complaints from customers about difficulty finding their locations; including people having problems negotiating the "convoluted" frontage road system. A comment was also made that the addressing along Wayzata Boulevard could be confusing. These complaints primarily come from new customers unfamiliar with the area.

4.2.3.4 Lessons Learned

Following are lessons derived from studies of the sit-down restaurants:

- As noted in Section 3, the increase in office employees in the corridor has had a positive impact on the environment for other commercial uses, including these four restaurants, which cater to lunchtime crowds.
- Sit-down restaurants benefit from the overall economic health of the corridor. Being located in a healthy business corridor with potential lunchtime customers is a strong positive factor.
- Sit-down restaurants feel they would benefit from more efficient and straightforward access then they have with the existing frontage road system on the south side of the corridor. The frontage road design has been a major issue for sit-down restaurants and customers attempting to reach their locations.

4.2.4 Fast Food Restaurants

Two fast food restaurants were studied, both of which existed prior to the reconstruction of the corridor. Today, both remain operational and profitable. In fact, along with office uses, fast foods restaurants experienced the most positive business results since completion of I-394. Similar to sit-down restaurants, fast-food restaurants benefit from the increase of office buildings and office workers along the corridor since 1980.

4.2.4.1 Travel Time Analysis Results

Travel times to both fast food restaurants improved or stayed the same in the before and after condition. Additionally, visibility of both restaurants remained very good.

4.2.4.2 Interview Results

The interviews showed that both fast food chain representatives characterize their locations along I-394 as very positive. Unlike the sit-down restaurants, access conditions for both locations were not viewed negatively. One restaurant noted that they are able to take advantage of their location by concentrating on drive-through business, noting that the high traffic volumes keep their sales up and stable, especially during lunch. The other restaurant also noted that they capitalize on traffic volumes, including nighttime volumes, by staying open 24 hours a day. One interviewee noted that their location is one of the franchise owner's highest volume stores, usually raking first or second. Customer complaints about access are rare, but when they occur most are about visibility because the restaurant is hard to see.

4.2.4.3 Lessons Learned

Following are general lessons to be derived from studying the fast food restaurants:

- Although efficient access and visibility are very important to fast food restaurants, what seems to matter most is a strong customer base, such as the increase of office employees along the corridor (similar to sit down restaurants).
- As with office buildings, the I-394 corridor has become a nearly ideal location for this business type.
- Fast food restaurants are dependent on visibility and high traffic volumes along I-394. The exposure of being located along I-394 results in regular, repeated lunchtime business from the local area.

4.2.5 Strip Commercial

Parcel studies for two strip commercial properties were conducted. One property is a multi-tenant shopping center that houses a mix of big box retail, general retail, and restaurants. The other is a multi-tenant facility that includes three large chain retailers. Overall, only limited information was available for businesses in this category. However, the I-394 corridor does appear to be a hospitable environment for such businesses.

4.2.5.1 History and Appraisal Analysis Results

Both strip commercial developments were built after construction of I-394 and continue to operate at near full occupancy. Although data was limited for these properties, the appraisal analyses show an average increase in market value for both shopping centers.

4.2.5.2 Travel Time Analysis

The travel time analyses showed that the changes in access in and around these properties had little negative impact on travel time. Travel times decreased slightly for one shopping center. Times to and from the other shopping center did not change significantly, with times in one direction decreasing about two minutes and the other direction increasing less than a minute.

4.2.5.3 Interview Results

An interview was conducted with a representative from the property management company that manages both shopping centers. No negative comments were cited about either access or visibility for either of the two developments. The interviewee was very positive about the location of the developments, noting that both have been fully occupied almost the entire time they have been open. Access was not mentioned as a problem. Instead, the interviewee also felt visibility and access were good at both locations.

4.2.5.4 Lessons Learned

Following are general lessons to be derived from the studies.

- The corridor, overall, remains a good place to locate strip commercial retail facilities.
- One of the shopping centers includes restaurants that have been operating since the development was first opened.

4.2.6 General Retail

Two businesses are in this category—both of which are considered destination retail locations. Both stores were located along the corridor before construction of I-394. Both were in place prior to construction of I-394 and one was involved in condemnation proceedings. One business is a specialty food store; the other is specializes in home decor. At the time the study was completed, both were successful businesses. It is notable that the specialty food store did change their marketing strategy to become more of a "destination business"— meaning that customers almost all intend on patronizing the stores and tend to know the locations before visiting. This made the business less dependent on drive-by customers. This change applied to all stores within this retail chain. This particular food specialty store is the retail chain's top ranked location in terms of sales. Also, analysis of appraisals shows that this site has consistently gained value since 1980.

4.2.6.1 Travel Time Analysis and Interview Results

Travel times did not significantly change for either of the general retail businesses. Interviews showed that representatives from both retail stores are very positive about their locations along I-394, with few negatives noted. The interviewee of the specialty food store noted that business has largely been unaffected by the changed roadway. As noted above, management adapted to

the access change by becoming more of a destination location, rather than an impulse destination.

The specialty food store representative noted that store management worked hard to partner with other local businesses to remain competitive throughout construction of I-394. This partnership included proactive uses of signage and advertising. The home goods store representative also characterized their store's location as very positive, noting the favorable demographics in the area as a good fit for this type of business. Both businesses do hear a few comments about the accessibility from the highway, as well as some difficulties negotiating the nearby interchange.

4.2.6.2 Lessons Learned

Following are general lessons to be derived from the studies.

- Both businesses benefit from the prosperous customer base found along the corridor today.
- Proactively dealing with negative construction issues by partnering with other affected businesses appears to reduce construction related businesses decreases.
- Some businesses are more flexible and can better adapt to access changes and reconstruction (e.g., the specialty food store shifting to become more of a destination business, rather than drive-by destination).
- Roadway design appears to be one negative aspect that was noted by both general retailers. This is similar to some of the sit-down restaurant interviewees who noted restaurant patrons complained about the difficulty in navigating the frontage road system.

4.2.7 Big Box Retail

Two big box retailers were included in the parcel studies. These are destination retail locations. Both stores predate the construction of I-394. At the time of this study was completed, both stores remained operational and profitable. The appraisal analysis showed that both sites have consistently increased in value since 1980.

4.2.7.1 Travel Time Analysis and Interview Results

Analysis revealed that travel times for one business increased by a few minutes overall, while travel times to the other retailer decreased slightly. One interviewee noted that peak period congestion on I-394 is more of a concern for his customers than the additional distance driven to access the store.

Interviews showed that representatives from both businesses were generally positive about their locations along I-394. One interviewee positively characterized their location. The other interviewee also characterized their location as very positive and specifically noted the benefit of being located near a prosperous customer base. Both stressed the importance of visibility, with access likely less important since they are more destination-oriented.

4.2.7.2 Lessons Learned

Following are general lessons to be derived from the studies.

- The success of big box retailers seems to be affected as much or more by demographics and complimentary land uses than access to or visibility of the site.

4.2.8 Hospitality

One hotel and one motel were included in the hospitality category. The motel is no longer in business. The hotel was in business at the time of freeway construction and remains in operation. It appears the motel may have gone out of business for reasons unrelated to the highway project. The City of Minneapolis chose to close their old convention center and construct a new facility within the timeframe that I-394 was constructed. It was heavily dependent on its convention-based business, which was likely drawn to new convention facilities that were constructed in downtown Minneapolis. The parcel on which the motel once stood is now occupied by two sit-down restaurants. Appraisal analysis showed that market values for this parcel were on a decreasing trend leading up to the business' closure.

The hotel is still in business at the original location, although the property has changed management. Market value information was unavailable for the hotel.

4.2.8.1 Travel Time Analysis and Interview Results

The travel time analysis for the motel showed little change between the before and after conditions. The motel closed in the early 1990s; therefore, an interview was not conducted for this business. However, this parcel was cleared and redeveloped as a restaurant site. The two restaurants that occupy the former motel site were included in the parcel studies (see above).

Given the proximity of one of the restaurant sites to the hotel, a separate travel time analysis was not done for the hotel. Using the restaurant site, which is located adjacent to the hotel, the access patterns to the hotel did change dramatically after construction of I-394. This change in access from the mainline highway resulted in increased travel times on the local road system, however, the travel times on the regional system decreased. The net result was an increase in overall travel times of approximately two minutes.

4.2.8.2 Lessons Learned

Following are general lessons to be derived from the two studies.

- Many factors affect business performance, of which highway construction and configuration are just one. As seen in the case of the motel, newer conference facilities in downtown Minneapolis seemed to result in a negative downturn in the motel's conference business.

4.2.9 Convenience/Gas

One convenience/gas business was included in the parcel studies. This store had been in business at this location prior to reconstruction and remains open today. The appraisal analysis for the original station shows a generally steady average increase in value since 1980. The travel time analysis showed that the geometric changes in access had little impact on travel times for this parcel. No interview has been conducted to date.

4.2.9.1 Travel Time Analysis

While the travel patterns to and from the convenience/gas station were dramatically altered due to the construction of I-394, overall, travel times to and from this business were largely unchanged after completion of the I-394 project. This is because the increased time spent on the local frontage road system (roughly four to five minutes) was made up for by a decrease in time spent on the regional system. Travel times on I-394 to and from the parcel decreased by approximately five minutes.

4.3 Conclusions

Table 4-1 summarizes the overall impact the construction of I-394 had on general business categories.

Generally, the impact that the construction of I-394 had on travel times to the various Travel times for each business type are summarized

Table 4-2 summarizes the results, by business type, of the parcel studies completed and the interviews conducted. Generally, none of the business types were found to have overall negative impacts. Although, as was noted in the category of sit-down restaurants, some businesses did note negative impacts from the frontage road system along I-394 (although some aspects of some business types were negatively affected).

TABLE 4-1
Travel Time Impact Summary after Freeway Conversion by Business Category

Business Types	Impact of Completed I-394 on Travel Times
Office	Decrease
Auto Dealers	Decrease to slight increase
Sit-down Restaurants	Slight increase
Fast Food Restaurants	No change
General Retail	No change
Strip Commercial	Slight increase
Big Box Retail	Increase to slight decrease
Hospitality	No change
Convenience/Gas	Increase

Many of the business types are in an overall better business climate now, than before I-394 was constructed. As noted in Section 1, many factors play into the success or failure o f a business, the surrounding transportation network is just one of these factors. While it is impossible to conclude that I-394 contributes to business success, it is safe to conclude that the corridor did not hurt the business climate.

TABLE 4-2
Research Results Summary Table

Indicators	Level of Impact	Comments
Business Types		
Office Buildings	Very Positive	Large increase in activity (land use change towards more office and more office employees
Automobile Dealerships	Neutral to Positive	Dealers studied have remained viable after transition; there is an increased number of auto

TABLE 4-2
Research Results Summary Table

Indicators	Level of Impact	Comments
Business Types		
		dealers located along the corridor since completion of freeway conversion
Sit-Down Restaurants	Neutral to Positive	Remained viable with adjustments (catering to increased lunchtime demand from office workers)
Fast-Food Restaurants	Very Positive	Large increase in business
"Strip Commercial"	Neutral to Positive	Attractive location, supported by demographics
General Retail	Neutral	Remained viable with adjustments (shift from "drive-by" business to destination location
"Big Box Retail"	Very Positive	Very attractive customer base based on demographics
Hospitality (Hotel/Motel)	Neutral	Insufficient data
Convenience Stores/Gas Stations	Neutral	Remained viable

Finally, a comparison of the number of businesses located along the corridor before and after conversion to I-394 was completed. The results of this comparison are shown in Table 4-3.

TABLE 4-3
Comparison of Number of Businesses Along Corridor Before and After Freeway Conversion

Business Types[1]	# of Businesses in 1987[2]	# of Businesses in 2007[3]
Automobile Dealerships	12	13
Sit-Down Restaurants	18	21
Fast-Food Restaurants	7	9
"Big Box Retail"/Large Specialty Retailers	6	18
Hospitality (Hotel/Motel)	6	6
Convenience Stores/Gas Stations	4	5

1—Three business types, office, general retail, and strip commercial were not included in this comparison because making a comparison was not possible with the available information.

2—1987 information from the I-394 Land Use Study, volume 2: Business Access Case Studies, Mn/DOT, November 1987

3—2007 information from a field review of the corridor completed in June 2007.

This comparison indicates that I-394 remains an economically healthy corridor in which to do business. Most of the business types in Table 4-3 had roughly the same number of businesses along US 12 in 1987 as are housed along the corridor in 2007. The one exception is the category of big box/large general retail. In this category, there are currently considerably more businesses than existing in 1987.

I-394 BUSINESS INTERVIEW SCRIPT (SECOND DRAFT)

This section is to be filled in by the CTRE interviewer prior to the personal interview.

Business Name _____

Street Address _____

City _____

Interviewee Name_____

Position Of Interviewee _____

Contact Telephone Number _____

Business Description _____

_____ Fast Food _____ Other Restaurant _____ Stand-Alone Retail

_____Strip Mall/Multi-Tenant ____Auto Dealer ____ Gasoline Station/C-Store

_____ Office Building _____ Hotel/Motel _____ Other

Parcel Identification Number _____

Size of Land Parcel (Acres) _____

Parcel Has Direct Freeway Frontage? Yes _____ No _____

Distance from Freeway Mainline _____

Distance from Nearest Freeway Interchange _____

Number of Buildings _____

Size of Buildings (Square feet) _____ _____

_____ _____

Number of Stories
In Each Building _____ _____

_____ _____

Rough Percentage Occupancy (If readily observable) _____

Rental Rates (If available) _____

Business Interview Script Begins

Thank you very much for your time and cooperation.

The Center for Transportation Research and Education (CTRE) at Iowa State University is conducting research on behalf of the Minnesota Department of Transportation (MnDOT) regarding the long-term impact of converting US Highway 12 from an arterial to an Interstate (I-394) during the 1980s. The research is focused on the impact of the roadway conversion on a variety of commercial business properties located very near the roadway.

Your cooperation is important to this study. You would help us greatly by answering the following questions, which we expect will take about 45 minutes of your time. We understand and will note if you choose to decline to answer any question.

Interviewer: If subject declines to answer, note that beside the question on the form.

General Business Information

1. How long has your firm been in business?

_____ Less than one year
_____ 1 – 5 years
_____ 5 -10 years
_____ 10-20 years
_____ More than 20 years

2. How long have you (the interview subject) been with this business at this location?

_____ Less than one year
_____ 1 – 5 years
_____ 5 -10 years
_____ 10-20 years
_____ More than 20 years

3. How long has this firm been in business at <u>this</u> location?

_____ Less than one year
_____ 1 –5 years
_____ 5 -10 years
_____ 10-20 years
_____ More than 20 years

4. What is the type of ownership is this business?

_____ sole proprietorship
_____ public corporation
_____ division of local corporation
_____ division of national/regional corporation
_____ private corporation
_____ partnership
_____ franchise
_____ other

(If a franchise or division of a corporation)

4a. Where are corporate decisions made about the location of facilities?

_____ individual facility decision
_____ in the Twin Cities area
_____ beyond the Twin Cities area (specify location) _____
_____ a mixture of local and headquarters input

5. In general, has the location chosen for your business along I-394 been

____ very positive
____ somewhat positive
____ neutral
____ somewhat negative
____ very negative

5a Would you care to elaborate?

_____
_____
_____

Roadway Access Information

5. What was the roadway situation at this site when your business initially selected this site?

_____ I-394 freeway (with no at-grade intersections and no direct driveways)
_____ US 12 expressway (with at-grade intersections and direct driveways)
_____ Not sure/unknown

6. Has there been any change in the highway access to your business since you have been at this location?

_____ Yes What type of change? _____
_____
_____

How did the change in access affect your business?

_____
_____
_____

What specific steps did you take in response to the change? (e.g. changes in location, signage or advertising)

_____

_____

_____

If you hadn't taken any of those steps, what would have been the effect on your business?

_____

_____

_____

_____ No

Customer Information

7. Generally, from what distance do most of your customers come?

_____ Less than one mile away
_____ 1 to under 5 miles away
_____ 5 to under 10 miles away
_____ More than 10 miles away

8. Generally speaking, would you say your business more dependent on customers that would be turning off from the freeway or those arriving from the abutting neighborhood?

_____ From the freeway
_____ From the neighborhood

8a. Can you estimate the percentage split of customers who turn off the freeway or arrive from the abutting neighborhood?

_____ % From the freeway
_____ % From the neighborhood

8. Do your customers comment on the accessibility of your current business location?

_____ Yes
_____ No

9. Are their comments generally:

_____ Favorable
_____ Unfavorable

9b. Could you say more about this? (Either favorable or unfavorable comments)

_____

_____

10. Does your business use any special signage to indicate the route from the freeway to your site for customers? (Special signage may include either large-size signs or off-site signs.)

_____ Yes
_____ No

10a. If "yes", what type of special signage?

_____
_____

Highway Access And Visibility Information

11. How important was highway access as a factor in making your original business site selection?

_____ Very important
_____ Somewhat important
_____ Not important

12. Has having access occur via the system of frontage roads and interchanges rather than directly from the main highway impacted your business in any way?

_____ Yes
_____ No
_____ Not applicable

12b. If yes, what have the specific impacts been, either negative or positive?

_____
_____
_____

For the purposes of this research, "access" means refers to customers and others physically reaching your business. "Visibility" refers to customers' and others' ability to see your business.

.

13. On a scale of one to five, with one being the lowest, how important are the following visibility aspects to your business?

	Scale	Comments (Why is that?)
Visible to consumers for impulse purchases	1 2 3 4 5	_____ _____
Visible to consumers who are seeking my business	1 2 3 4 5	_____ _____
Visible to suppliers or vendors	1 2 3 4 5	_____ _____
Visible for general public awareness	1 2 3 4 5	_____ _____
Visible for corporate image	1 2 3 4 5	_____ _____
Visible for employees	1 2 3 4 5	_____ _____

14. Again, on a scale of one to five, with one being the lowest, how important are the following access aspects to your business?

	Scale	Comments (Why is that?)
Ease of access for consumers for impulse purchase	1 2 3 4 5	_____ _____
Ease of access for consumers who are seeking my business	1 2 3 4 5	_____ _____
Ease of access for suppliers or vendors	1 2 3 4 5	_____ _____
Ease of access for general public awareness	1 2 3 4 5	_____ _____

Ease of access for corporate image	1 2 3 4 5	_____
Ease of access for employees arriving at and departing from work	1 2 3 4 5	_____

15. How far could your business be located from a freeway interchange without adversely affecting your business? _____

16. How far could your business be located from a freeway mainline without adversely affecting your business? _____

17. When making the decision regarding a location for your business, which of the following considerations is most important to you? (Rank from 1 = most important to 5 = least important).

	Rank	**Comments (Why is that?)**
Distance to/from the freeway	1 2 3 4 5	_____
Distance to/from a freeway interchange	1 2 3 4 5	_____
Site abutting a freeway	1 2 3 4 5	_____
Time involved in accessing your business	1 2 3 4 5	_____
Visibility of your business	1 2 3 4 5	_____

18. What positive effects has your business experienced by being located near the I-394 freeway? _____

19. What negative effects has your business experienced by being located near the I-394 freeway? _____

Those are the main questions I have. Thank-you for answering.

Other Questions

I'd like to ask you a few additional questions regarding your business trends and future business plans. I left these until the end since they are likely to be more sensitive. Again, I understand fully if you decline to answer them. What is your:

20. Annual sales volume or rental income for 2003 $_____

21. Number of employees at this location (FTE's) _____

22. Trend in business volume (up, down, or stable) _____

23. Is the trend related at all to access to the freeway or visibility from the freeway?
____yes
____ no

23a. If yes, please elaborate_____
_____

24. Do you have future plans for expansion or at this location or movement away from this location that you would be willing to share?
_____
_____

24a. If these plans involve moving from the current location to a new business location is the decision at all related to access or visibility concerns at the current site?
____ yes
____ no

SECTION 5

Summary and Key Findings

5.1 Key Research Findings

The results of the I-394 research indicate that the impacts of upgrading the highway from an arterial facility to a freeway were generally positive. The project added capacity to carry traffic, increased travel speeds; and improved safety. Since construction, the overall economy improved, as measured by indicators such as employment, income, business turnover, and retail sales taxes. A considerable amount of land development occurred and developed land transitioned from "lower uses" such as vacant and residential to "higher uses" such as commercial/office. Commercial land values increased significantly and the trend is in line with comparable corridors.

At the time I-394 was converted to a freeway, many land owners voiced concerns about the negative impact the highway design changes would have on the vitality of their business. Some property owners stated that they expected to go out of business; others noted that after conversion to a freeway, the "highest and best use" of their property would be industrial land uses (rather than retail, office, or other service oriented business uses). Many of these were captured in the records from the condemnation proceedings that took place as part of the project.

The passage of time has shown that the perceived negative impacts were generally worse than the actual impacts. In many cases of individual businesses, the business climate along the corridor after I-394 was completed is more positive than before the freeway was constructed.

It is impossible to attribute this to any one factor because many variables, including macro economic variables, impact business performance. However, anecdotal comments provided in during the interviews with business owners and operators in many cases noted the benefit of being located along the I-394 corridor.

One key to business success is the ability to keep up with current trends and to meet the changing business environment. As such, many business owners have changed their strategies in the more than twenty years since I-394 was constructed. Many of the business, particularly sit-down and fast food restaurants now cater to the increased number office workers in the corridor. Other business owners, including general and big box retail work to meet the demands of an affluent demographic group of people who now live and work near the corridor.

During the condemnation proceedings, some land owners expressed concern that their locations would no longer be viable for business because of changes in travel patterns to the business and visibility of the business from the mainline. Given the health of the I-394 corridor, it appears these concerns were unfounded. This is likely the case for two reasons. First, the overall economic environment of the corridor has improved, along with the overall regional and state economies. Second, travel times for typical trips (on both the regional and local systems) to and from parcels along the corridor generally declined because travel speeds along the mainline I-394 increased.

Certain business types, particularly office buildings, fast food restaurants, and big box retailers, appear to have benefited from the I-394 project. For these businesses, the macro-level economic trends following the project seem to have been very important. These businesses have thrived because the corridor is a healthy environment in general, with abundant customers and buying power. For other businesses types, the project appears to have yielded mixed results, although on the whole, the positives seem to outweigh the negative aspects. The table below summarizes the research results by indicator and by business type.

TABLE 5-1
Research Results Summary Table

Indicators	Type of Impact	Comments
Transportation (Section 3)		
Traffic Volume	Positive	Traffic volumes doubled
Travel Speed	Positive	Peak travel speeds increased
Traffic Safety	Very Positive	Large decline in serious crash rate
Economic and Demographic (Section 3)		
Land Use	Positive	Land developed more intensively and consistent with local plans
Population	Neutral to Negative	Slight population loss due to land use changes
Income	Neutral to Positive	Area consumers more affluent
Retail Trade Activity	Neutral	Mixed trends
Employment	Positive	Large gain in office jobs
Business Turnover	Neutral to Positive	Below state-wide average turnover rate
Commercial Land Values	Positive	Land values have trended upwards since 1980, similar to the I-494 corridor
Business Types (Section 4)		
Office Buildings	Very Positive	Large increase in activity (land use change towards more office and more office employees
Automobile Dealerships	Neutral to Positive	Dealers studied have remained viable after transition; there is an increased number of auto dealers located along the corridor since completion of freeway conversion
Sit-Down Restaurants	Neutral to Positive	Remained viable with adjustments (catering to increased lunchtime demand from office workers)
Fast-Food Restaurants	Very Positive	Large increase in business
"Strip Commercial"	Neutral to Positive	Attractive location, supported by demographics

TABLE 5-1
Research Results Summary Table

Indicators	Type of Impact	Comments
General Retail	Neutral	Remained viable with adjustments (shift from "drive-by" business to destination location
"Big Box Retail"	Very Positive	Very attractive customer base based on demographics
Hospitality (Hotel/Motel)	Neutral	Insufficient data
Convenience Stores/Gas Stations	Neutral	Remained viable

5.2 Key Findings at the Corridor Level

The conversion of I-394 successfully met the objectives of adding traffic capacity, preserving traffic flow, and dramatically improving traffic safety. The corridor level findings for the I-394 study are relatively consistent with previous research literature on the impacts of transportation improvement, including changes in access, to business and land development (as discussed in Section 2). Economic trends along the corridor remained positive, and even improved through the study period. Business and land development have continued at a good pace, and business turnover rates have been relatively low. Over the past two decades, there has been a noticeable shift in the corridor from residential development to retailing and then to office and service sector development. Commercial land values have also appreciated quickly along the corridor. The sections below summarize macro-level traffic, demographic, and economic changes that took place along the corridor from before the freeway conversion, to several years after the project was completed.

5.2.1 Traffic Volumes

In 1990, US 12 carried 40,000 to 80,000 vehicles per day. By the year 2000, the I-394 freeway carried 109,000 to 145,000 vehicles per day, essentially double the traffic volume of the former arterial US 12. Handling this anticipated increase in traffic was one of the main motivations for the highway upgrade.

5.2.2 Travel Speeds and Traffic Flow

Peak hour travel speeds along I-394 were from two to twenty-five miles per hour faster along I-394 in 2004 than they were along US 12 before the project was constructed, even through the amount of traffic on I-394 more than doubled from what was handled on US 12. Travel times for typical-length trips along the route have generally dropped even when indirect access to commercial properties is factored in. The upgrade from an arterial to a freeway clearly maintained the level of service for traffic in the corridor even with high traffic growth. However, peak travel speeds on some parts of the current I-394 corridor are now beginning to drop below the target level of 45 miles per hour.

5.2.3 Traffic Safety

The I-394 corridor has significantly fewer fatal and injury crashes than US 12 even though traffic volumes have doubled. Average annual fatal crashes have declined from two to one. The rate of fatal and injury crashes (crashes adjusted for traffic volumes) has declined considerably. Clearly the I-394 project was very beneficial in terms of traffic safety.

5.2.4 Land Use

There are roughly 1,300 acres of developable land immediately adjacent to the I-394 corridor. Land use was compared for this buffer zone for the period between 1984 and 2000 using remote sensing data obtained from the Metropolitan Council. The results show that land use along the corridor has become more intensive, with significant decreases in residential and agricultural/vacant land and significant increases in commercial land. Commercial land uses now make up forty percent of the land adjacent to the corridor. Land use change was most pronounced in the middle of the corridor near the interchanges with US 169 and TH 100. These are locations with high levels of accessibility, traffic, and visibility. This land is now being used far more intensively than before construction of I-394.

5.2.5 Population and Income

As the I-394 corridor has transitioned from residential land use to commercial/industrial land use, the population along the corridor has declined somewhat. The remaining population is affluent, with a median income that is higher than the state's median income. This makes the area an attractive market for both retailers and service businesses.

5.2.6 Retail Trade Activity

The number of retail firms located in the cities surrounding the I-394 corridor has fluctuated over time. This is commonplace in retailing and is mostly related to overall economic conditions. The cities of St. Louis Park, Golden Valley, and Minnetonka (the cities through which I-394 passes) have become somewhat less dependent on retail businesses for their commercial base over the past few decades. Service businesses, including services for households and other businesses, have increased. Gross retail sales in the corridor (which includes taxable services) grew substantially, suggesting an overall healthy business climate that is becoming more services-oriented.

5.2.7 Employment

Employment in the area immediately surrounding the I-394 corridor grew by almost 30 percent between 1990 and 2000. (Unfortunately, comparable data were not available for 1980). The density of employment (employees per acre of land) also grew, reflecting the growing intensity of land use along the corridor. The composition of employment along I-394 changed dramatically as direct employment in retailing declined while employment in service and office sectors grew. These changes were most pronounced in the middle of the corridor, the same area where the most significant land use changes occurred.

5.2.8 Business Turnover

An analysis of business turnover was conducted for businesses located along Wayzata Boulevard (the local street name for US 12 and the frontage road system that now serves businesses along I-394). This analysis was done using published business directories for the period between 1980 and 2003. The analysis indicated a substantial amount of new development since 1980, more commercial postal addresses, and substantially fewer vacant addresses. The 2003 vacancy rate along the corridor was very low. The most significant change that has occurred in business activity over time is a large increase in multitenant buildings, including strip malls and office buildings. These properties are now often leased by service sector businesses. The overall rate of business turnover for the corridor has been lower than typical annual rates for Minnesota and the nation as a whole. The highest turnover rates have been for service and office businesses rather than retail businesses, which include restaurants.

5.2.9 Commercial Land Values

Raw commercial land values in the I-394 corridor were documented over a three decade period (roughly 1970 through 2003) using sales transaction records from a local commercial realty and appraisal company. Land values along I-394 grew substantially between 1970 and 2003, from about $2.00 per square foot in 1970 to about $15.00 per square foot today. The price trend for the I-394 corridor was found to be similar to the I-494 corridor, which is another highly developed commercial corridor in the Minneapolis-St. Paul metropolitan area for which comparable data are available. I-494 goes through the City of Bloomington and in-between the Minneapolis International Airport and the Mall of America and is considered to be one of the most desirable corridor for business in the Minneapolis-St. Paul metropolitan area.

5.3 Key Findings at the Parcel Level

After reporting on the macro-level state of the region in Section 3, the study team focused on the micro-level by studying twenty-two businesses located along the I-394 corridor. These parcel studies included a variety of business types, either currently or formerly located in the corridor, ranging from retail to office and hospitality. This process included documenting the before and after condition for: travel times to and from the business, an examination of the change in travel patterns to a business, and estimated market values (when this data was available).

Similar to the findings of previous research (see Section 2), the success of businesses after construction of I-394 varied among businesses and business types. Also similar to the other research, this study found that many factors play a role in business success. Some businesses studied have failed, although the failures appear to be unrelated to the highway project and changes in access.

In some cases, the parcel studies also included in interview with a representative from the business. Overall, most businesses interviewed were positive about doing business along the I-394 corridor. Some business representatives noted difficulties of operating their business during construction. Others noted that they chose to transition their business model since the freeway was constructed—to change from a "drive-by" business that relied on impulse stops, to more of a destination business. Some of the businesses did have complaints about the design of the project, particularly the lack of continuity of the frontage road system along the south side of I-

394. The primary complaint is that the road and addressing system are confusing to customers, especially first-time customers.

5.3.1 Travel Distances and Travel Times

"Before" freeway and "after" freeway travel times were computed for arriving and departing drivers; for both the eastbound and westbound traffic on I-394. Average trip times, were generally reduced after conversion to I-394 compared to trips on US 12. This is because once a driver reaches the freeway; distances take less time to cover than on a signalized expressway.

In general, average trip distances increased from 1980 to 2003. These increases were partially accounted for in the increased travel distance on the frontage road system due to the change in access when I-394 was constructed. Rather than having nearly direct access from US 12 on one of the 31 interchanges and/or intersections, drivers now have to use one of the ten interchanges to access local streets. Another factor in increasing trip distance lengths was people selecting longer trips on the freeway rather than shorter trips on local streets.

5.3.2 Personal Business Interviews

As noted in Section 4, fourteen interviews with owners and managers of businesses were conducted for this study. This section summarizes the key findings from these interviews.

- **Perception of Location on I-394**: Most of those interviewed reported that being located on I-394 benefits their businesses. One sit-down restaurant noted that they were neutral, while another sit-down restaurant noted that the location was somewhat negative. The primary complaint offered by these sit-down restaurants was the poor connectivity of the frontage road system to I-394 (see below for more details).

  Businesses representatives offered a variety of answers when asked about the positive aspects of being located along I-394. Some noted that the visibility and high traffic volumes (especially from downtown events) were positive. Others noted that their specific locations had become destinations and that the area supports "affluent spending habits." It was also noted that the area employs a large number of individuals who spend money in the area over lunch hours. The lunch business is very strong in most of the restaurants interviewed. When addressing negatives of being located near I-394, accessibility along the south-side frontage road system was mentioned by some of the sit-down restaurant representatives.

- **Access to and from I-394**: Many of the business representatives noted that they do receive generally unfavorable comments from customers regarding access to their properties from I-394, primarily related to the non-connectivity on the south-side frontage road system or "spotty" congestion on the north-side. Businesses on the northern side of the corridor expressed fewer access-related concerns than their south side counterparts. Interview respondents did not have a problem with the limited access to and from the freeway. Rather, some respondents expressed dissatisfaction with the "convoluted" frontage road system that was difficult for drivers to negotiate.

- **Plans to expand or relocate**: Most of the businesses (eight out of ten) had no plans to relocate. One sit-down restaurant noted they were open to a different location as an additional restaurant, but they had no concerns with their location along I-394. One general retailer is considering a new location, but will remain on the I-394 near their existing

location. One sit-down and one fast food restaurant are planning to remodel at their existing locations.

- **General Business Conditions**: Two of the ten business representatives reported a downward trend in overall business conditions. One sit-down restaurant believed this was related to access, while another sit-down restaurant felt the downturn was due to the state of the economy. Four businesses reported stable sales. One fast food restaurant attributed their stable sales positively to the corridor environment. Three our out of ten businesses reported sales trending upward, with one fast food restaurant attributing good sales partially to the corridor environment.

  Most businesses indicated that they were doing well. Two businesses—one general retail and one fast food restaurant—even noted that they are the top stores in their company or region in terms of sales volume.

  Most of the business representatives agreed that the I-394 corridor is a good place to do business. It appears that many of the businesses interviewed were adapting to the changing conditions along I-394. One retail owner and one sit-down restaurant owner noted that they had adapted their business plans in an attempt to become more of a "destination" business rather than drawing impulse customers in from the freeway. It also seems that especially the restaurants—both sit-down and fast food—relied on the lunch business generated by employees working along the I-394 corridor.

5.4 Final Comments

The following three key observations were made while completing the I-394 Corridor Study:

- Converting US 12 to I-394 supported economic development and improved the vitality of the corridor. Land values have increased, employment has increased, there are few vacant parcels in the corridor, and business turnover, while not zero, is less than the statewide average.
- These results are remarkably similar to those reported in the literature in other studies (discussed in Section 2).
- The success or failure of individual businesses appears to be more related to the ability of the owner to adapt to changes in the global, national, regional, state, and local economies, than to the micro-level changes in accessibility.