

## **1. PURPOSE AND NEED FOR ACTION**

### **1.1 PURPOSE**

The purpose of the proposed project is to improve traffic capacity, to reduce traffic congestion, to improve safety and to enhance economic opportunities by upgrading the existing IL-159 corridor which extends through the City of Collinsville from south of Belt Line Road (near Kinloch Street) to just north of South Morrison Avenue (near the Madison/St. Clair County Line), in Madison County, Illinois

### **1.2 HISTORY**

The identification of a need for improvements to IL-159 through Collinsville can be traced to as far back as 1964, when a regional transportation study was conducted to investigate possible solutions for correcting problems with the existing route. At that time, the study recommended constructing an east bypass to supplement existing IL-159. However, due to a lack of sufficient public support for the recommendations of the study from local business leaders and elected officials, no actions were taken.

In 1997, the City of Collinsville implemented their “Comprehensive Plan Vision 20/11”. As part of this plan, the City reopened the investigations and began studying possible alternatives for addressing the needs along IL-159. The result of the City’s efforts was the completion of a feasibility study in July 2004. This initial feasibility study reviewed existing and planned land uses, existing and projected traffic volumes, and the network transportation system as a whole. Results of this study and its public involvement effort concluded that the IL-159 corridor warranted additional study. This conclusion led to the next phase of project development which involves conducting engineering and environmental studies.

### **1.3 PROJECT LOCATION AND DESCRIPTION**

The focus of this study is along the existing IL-159 corridor from south of Belt Line Road (near Kinloch Street) to just north of South Morrison Avenue (near the St. Clair/Madison County Line) in Madison County, Illinois. The project length is approximately 2.5 miles (4.0 km).

The existing roadway exhibits variable urban typical sections with curb and gutter and sidewalks ranging from 5-lanes at Belt Line Road, transitioning to a 3-lane section at the north project terminus near Kinloch Street, and then intermittent 2 or 3-lane sections along the remainder of the route throughout the City. A one-way pair system is currently being utilized to handle traffic through a portion of the downtown section between Clay Street and Main Street. The existing roadway transitions back to a 5-lane rural section with no curb and gutter and no sidewalks at the south project terminus

located near South Morrison Avenue. Several signalized intersections exist along the portion of this route being studied.

#### 1.4 NEED

This proposed project is needed to address existing issues with traffic congestion, capacity deficiencies, crashes, overall safety and to provide for economic opportunities along existing IL-159 in downtown Collinsville. In July of 2005, the Illinois Department of Transportation (IDOT) started a study to address the identified needs for this project. Context Sensitive Solutions (CSS) guidelines have been utilized for this project. As a part of the CSS approach to public involvement, a Citizen’s Advisory Group (CAG) has been formed to provide input on both the purpose and need for this project and to comment on potential transportation solutions developed for this project. Membership of the CAG is drawn from a cross-section of affected groups, agencies, and organizations. The CAG has developed a statement that describes the need for roadway improvements along IL-159 through Collinsville. The CAG reports: “The transportation problem in the City of Collinsville along Illinois Route 159 is the flow of vehicular and pedestrian traffic and safety within a highly urbanized and historically significant section of the community that promotes and sustains economic development and redevelopment of the Central Business District.”

#### 1.4.1 EXISTING TRAFFIC CONDITIONS AND CAPACITY DEFICIENCIES

Traffic congestion is defined in terms of levels of service (LOS). As defined in the Highway Capacity Manual (2000), LOS is expressed by a scale ranging from “A” to “F”. “A” represents the best traffic condition with no backups or obstacles to traffic flow. “F” represents a total breakdown in traffic operations accompanied by extensive delays and traffic volumes that approach capacity. Definitions for LOS categories are included in **Table 1**.

**TABLE 1 - Level of Service Descriptions**

<b>Level of Service</b>	<b>Description</b>
A	Completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and by driver preferences.
B	Indicative of free flow, although the presence of other vehicles begins to be noticeable. Average travel speeds are the same as in LOS A, but drivers have less freedom to maneuver.
C	Range in which the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is now clearly affected by the presence of other vehicles.
D	Range in which ability to maneuver is severely restricted because of traffic congestion. Travel speed begins to be reduced by increasing volumes.
E	Operation at or near capacity and is quite unstable. Vehicles are operating with the minimum spacing at which uniform flow can be maintained.
F	Breakdown condition where maneuverability and speeds may drop to zero.

*Level of service is based on definitions set forth in the Highway Capacity Manual, 2000.*

The acceptable or minimum level of service for the design year for this project is LOS C.

Businesses, non-profit organizations, churches, and residences are located along the project corridor. These community resources and residences currently have unrestricted access to the roadway. Many businesses in downtown Collinsville utilize on-street parking along IL-159. In some instances, unrestricted access can lead to reduced traffic efficiency and decreased capacity.

Existing Average Daily Traffic (ADT) counts along IL-159 at South Morrison Avenue range from 15,400 vehicles per day south of the intersection to 17,500 vehicles per day north of the intersection. This intersection currently operates at level of service A.

The Main Street intersection and the Belt Line Road intersection are currently operating at traffic levels that are contributing to the congestion in the project area. In the vicinity of the Main Street intersection, the existing ADT along IL-159 is 18,400 vehicles per day south of the intersection and 18,800 vehicles per day north of the intersection. This intersection currently operates at level of service E.

At the Belt Line Road intersection, the existing ADT along IL-159 is 20,900 vehicles per day south of the intersection and 23,300 vehicles per day north of the intersection. This intersection currently operates at level of service D.

As shown in **Table 2**, existing annual daily traffic (2005 ADT) for IL-159 varies throughout the study area from 23,300 vehicles north of Beltline to 18,400 vehicles south of the downtown area to 17,500 vehicles near South Morrison Avenue. Truck traffic decreases from 1,375 near Beltline to around 1,089 north of downtown to 600 at the southern portion of Collinsville.

**TABLE 2**  
**Average Daily Traffic(ADT) and Projected ADT**

<b>Location</b>	<b>2005</b>	<b>2032</b>
IL-159 North of Belt Line	23,300	34,800
IL-159 South of Belt Line	20,900	31,250
IL-159 North of Clay Street	18,800	28,100
IL-159 South of Main Street	18,400	27,500
IL-159 North of South Morrison Avenue	17,500	26,150
IL-159 South of South Morrison Avenue	15,400	23,050

Traffic is predicted to increase by 49% through the year 2032. The projected average daily traffic for the year 2032 for IL-159 at South Morrison Avenue is 23,050 vehicles per day south of the intersection and 26,150 vehicles per day north of the intersection. Traffic operations at this intersection are projected to decrease from the current level of service A to level of service B by the year 2032 as shown in **Table 3**.

IL-159 ADT at Main Street is expected to increase to 27,500 vehicles per day south of the intersection and 28,100 vehicles per day north. Without improvement, traffic operations at this intersection are projected to decrease from the current level of service E to level of service F by the year 2032 as shown in **Table 3**.

2032 ADT along IL-159 in the vicinity of the Belt Line Road intersection is predicted to increase to 31,250 vehicles per day south of the Belt Line intersection and 34,800 vehicles per day north of the Belt Line intersection. Without improvement, traffic operations at this intersection are projected to decrease from the current level of service D to level of service F by the year 2032 as shown in **Table 3**.

Traffic projections for the 20-year design horizon were calculated for the existing IL-159 using current ADT's and an annual growth factor. A summary of the traffic projections is included in **Table 2**.

The existing IL 159 ranges from 5-lanes at Belt Line Road, transitioning to a 3-lane section at the north project terminus near Kinloch Street, and then intermittent 2 or 3 lane sections along the remainder of the route throughout the City until widening back to 5-lanes again at South Morrison Avenue. The lack of continuity through these intersections causes delays in addition to poor operation of the Main Street intersection located in the central business district.

**TABLE 3  
LOS and Projected LOS without improvement**

<b>Intersections along IL-159</b>	<b>2005 LOS</b>	<b>2032 LOS without improvement</b>
South Morrison Avenue	A	B
Main Street	E	F
Beltline	D	F

**1.4.2. SAFETY**

Traffic levels are projected to increase 49% by the year 2032 along this segment of IL-159. It is anticipated that the crash rate will increase by at least the same percentage. Insufficient geometrics and signal timing at the intersections are factors which are likely contributors to the predominantly rear-end crashes and traffic congestion along the route. An upgraded IL-159 is needed to improve the operation of the facility in order to alleviate the increased congestion which will improve safety and reduce the number of overall crashes, including the number of rear-end crashes.

#### **1.4.2.1 Crash Information**

During the years 2004 through 2006, there were a total of 369 crashes along the IL-159 project corridor being studied. As a result of these crashes, 155 personal injuries resulted with no fatalities. Nearly 57% of these incidences involved rear-end collisions. The remaining 43% were a combination of 18% turning, 9% angle, 8% parked vehicle/animal/side-swipe, 6% fixed object, and less than 1% for pedestrian/bicyclist, and less than 1% for head-on type crashes.

Within the limits of the IL-159 project route, there are no areas that appear on the 5% Selected Segment list. Even though there are no 5% Selected Segments, the intersection of IL-159 and East Wickliffe Avenue had 26 crashes occur between 2004-2006. 85% of these crashes involved rear-end crashes. The remaining 15% were the result of a turning type crash. The full crash analysis can be found in the Project Design Report.

All major intersections along the route will be evaluated, and improvements related to geometrics and signalization will be designed to improve these intersections' operational efficiency and safety. A number of methods will be utilized to improve safety in the project corridor. Improvements to signalization, geometrics, roadway alignments, and signing will be evaluated, and those methods found to provide a useful and cost effective solution to help alleviate the high crash rate will be implemented into the design. The aforementioned improvements will provide for greater driver safety and reduced congestion through the project corridor.

#### **1.4.2.2. Pedestrian Safety**

A total of two vehicular crashes involved pedestrians from 2004 to 2006. This is less than one one hundredth of a percent of the total number of crashes that occurred for those years. Each crash involving pedestrians occurred at different intersecting roadways along the IL-159 project route. No one particular area was shown to illustrate a trend for pedestrian involved crashes.

Businesses, residences, schools, and churches are located along the project corridor. Through the public involvement process, it has been revealed that it is an important to the citizens of Collinsville to provide a safe walking environment along IL-159; therefore, consideration for pedestrian protection will be incorporated into the project.

#### **1.4.3 ECONOMIC OPPORTUNITIES**

IL-159 currently does not provide the necessary access to aid the downtown business district to expand. In addition, the congestion that currently exists has impeded the economic growth of the downtown businesses due to the fact that people avoid the

congestion and take alternative routes. Coordination with community and business stakeholders revealed that access and congestion have had a negative impact in the economic life of the downtown business district. This coordination resulted in the following suggestions for ways to improve the economic life of downtown Collinsville: access should be improved, the central business district needs to become a destination, and the transportation system needs to fit within the “main street community.”

Future traffic projections indicate that traffic along IL-159 will increase and congestion along the route will worsen.