

Purpose and Need:

Introduction

The proposed action involves the improvement of Washington Street from Hainesville Road on the west to Lake Street on the east to address capacity, safety, and continuity issues. The existing roadway is mostly a rural cross-section with open ditch drainage. The project area is predominately within the Village of Grayslake with some portions on the west in the Villages of Hainesville, Round Lake Park, and unincorporated Lake County.

The logical termini of this project are the Hainesville Road at Washington Street intersection on the western end and the Lake Street at Washington Street intersection on the eastern end. Hainesville Road was selected as the logical termini at the western end because Lake County is currently conducting a separate Phase I study west of the Hainesville Road intersection. The other study is investigating the improvement of Washington Street west to its terminus at Cedar Lake Road with one lane in each direction, a bi-directional left turn lane, and enhanced pedestrian/bicycle facilities. Lake Street was selected as the logical termini at the eastern end because Washington Street has already been improved to a five-lane cross-section east of Lake Street. This project has independent utility and could function as a stand-alone improvement even if other proposed projects in the vicinity were not constructed.

History

Washington Street is an east-west minor arterial that provides regional mobility for residents in Lake County. This study from Hainesville Road to Lake Street is important because Washington Street is an integral component in the overall regional transportation system. CMAP developed the traffic forecasts for the 2030 design year based on the projected population and employment growth of the area, taking into account other proposed improvements in the project vicinity. Proposed improvements are consistent with the adopted comprehensive plans of the Villages of Grayslake, Hainesville, and Round Lake Park as well as plans by the Lake County Division of Transportation.

The Villages of Grayslake, Hainesville, and Round Lake Park have been and will continue to experience rapid population growth. The three villages have collectively had their populations grow from 11,517 residents in 1990 to 31,615 residents in the year 2008, a 275% increase in population.

Purpose

The purpose of this project is to accommodate population and employment growth by improving roadway capacity, safety, and system continuity along a 1.5-mile section of Washington Street from Hainesville Road to Lake Street in Lake County. This section of roadway is currently experiencing operations that exceed capacity and will only worsen with the anticipated increase in traffic.

Need for the Proposed Action

The communities of Grayslake, Hainesville, and Round Lake Park have experienced increases in population and employment growth which have lead to increased traffic volumes, vehicle delays, and a higher incidence of vehicular collisions along Washington Street. The CMAP 2030 projections for Washington Street predict that Average Daily Traffic (ADT) volumes will

reach 17,000 vehicles per day (vpd) throughout the project corridor. The projected volumes, particularly at the Hainesville Road intersection, will result in an unacceptable level of congestion if the existing configuration is not improved.

The following discusses the need for the proposed action in terms of roadway capacity, safety, and system continuity.

Roadway Capacity

As a result of population and employment growth in Lake County, vehicular traffic along Washington Street is increasing. Existing ADT volumes along Washington Street within the project limits range from 14,200 to 16,300 vpd and projected 2030 ADT volumes are estimated to be 17,000 vpd throughout the project limits. Based on the ADT and the intersection capacities, additional travel lanes are appropriate throughout the project limits. This wider cross-section could transition to the proposed three-lane cross-section west of Hainesville Road to match the improvement to the west and would match the existing five-lane cross-section to the east.

Level-of-Service (LOS) along an arterial is predominately a function of the traffic operating characteristics of the intersections along the arterial. The LOS is given letter designations, from "A" to "F", with "A" representing the best operating conditions with minimal delays, and "F" representing the worst operating conditions, characterized by traffic congestion, long delays, and extensive vehicular queuing. A LOS of "C" is generally considered to be the minimum acceptable for design purposes. LOS "D" describes a traffic stream that is generally moving, but borders on a threshold in which small increases in traffic flow may cause substantial increases in delay and decreases in speed.

There are two signalized intersections along Washington Street within the study limits. These intersections are currently operating at a LOS of "C". If improvements are not made to the Washington Street corridor, the LOS for the 2030 design year would be "E" at the Hainesville Road intersection and "C" at the Lake Street intersection. The signalized intersection at Hainesville Road would experience long delays due to the anticipated increase in traffic volumes and would operate at an unacceptable level. The proposed action would improve capacity and the LOS experienced along the route by providing additional through and turning lanes at the intersections. Improved LOS will also improve roadway safety.

Safety

There were 158 crashes resulting in 18 injuries and no fatalities during the 2005-2007 analysis period within the project limits. The predominant type of crash that occurred was rear-end collisions, which accounted for 51% of all crashes. This is significantly higher than the county average of 39% for this crash type. The probable cause of rear-end crashes along Washington Street includes inadequate roadway capacity resulting in stop-and-go conditions and the need for additional through travel lanes. The second leading type of crash is turning crashes, which accounted for 22% of all crashes. There are 26 access points present along the Washington Street corridor, which lead to the increased potential for crashes. The probable cause of turning crashes is the lack of sufficient turn lanes along the Washington Street corridor and congestion at intersections resulting in motorists entering the intersection during the yellow or red signal

phases. This exhibits the need for additional auxiliary turn lanes at intersections as well as a continuous center bi-directional turn lane in areas where numerous side streets and residential and/or commercial driveways exist.

When an acceptable LOS is achieved on a facility, good traffic flow is present and driver frustration is at a minimum. Erratic driver behavior and the potential for crashes are also reduced at acceptable LOS levels. The proposed action would improve safety by providing additional through and turning lanes. This will increase capacity and reduce congestion and the occurrence of stop and go conditions, thereby reducing the potential for rear-end and other types of crashes.

System Continuity

Washington Street is classified as a minor arterial and is an important part of the regional transportation system of Lake County. The nearest parallel east-west arterial routes are Rollins Road, 1.5 miles to the north, and Illinois Route 120, one mile to the south.

Within the project area, there are not any major arterials or any commercial accesses between Hainesville Road and Lake Street. The residential side streets along Washington Street within the study limits are Hickory Avenue, Lilac Avenue, Circle Drive, Lakeside Drive, and Haryan Way. Lowlands Drive provides the Metra station access point for commuters. Washington Street provides important access to all these routes as well as continuity for longer distance motorists. As such the proposed action of improving Washington Street is important to allow the route to function safely and efficiently and meet the travel demands placed upon it.