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Parking Analysis Memorandum

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Subject: Old McHenry Road Phase I
Village of Long Grove
Section No. 11-00083-09-RS
Parking Analyses

Introduction

This memorandum summarizes the parking analysis completed for the proposed improvements along Old McHenry Road in the Village of Long Grove. The purpose of this study is to evaluate the potential for parking along Old McHenry Road.

Project Location and Functional Classification

Old McHenry Road is located in Long Grove in Lake County, Illinois. Old McHenry Road intersects Robert Parker Coffin Road within downtown Long Grove. Old McHenry Road and Robert Parker Coffin Road each provide one lane in each direction. Old McHenry Road is classified as a minor arterial while Robert Parker Coffin Road is classified as a local road. Currently, the intersection is all-way stop controlled.

Design (2040) Year Traffic Analysis

A traffic analysis study was completed for the Old McHenry Road at Robert Parker Coffin Road intersection. 2040 traffic volumes were developed along all four legs of the intersection by the Chicago Metropolitan Agency for Planning (CMAP). These traffic volumes were based on the 2012 March CMAP Travel Demand Analysis and assume the implementation of the GO TO 2040 Comprehensive Regional Plan for the Northeastern Illinois area. These volumes were used to determine projected 2040 AM and PM peak hour turning volumes at the intersection.

Four improvement alternates were analyzed using HCS 2010 software and the 2040 traffic projections:

1. No left turn lanes with no parking along Old McHenry Road
2. No left turn lanes with parking along Old McHenry Road
3. Left turn lanes along with Old McHenry Road with no parking along Old McHenry Road
4. Left turn lanes along with Old McHenry Road with parking along Old McHenry Road

Each alternate provides one approach and one exit lane on each leg of the intersection. A capacity analysis was completed for the AM and PM peak hours. The HCS analysis shows that parking along Old McHenry Road causes the intersection to operate less efficiently than when parking is not provided. Consequently, left turn lanes along Old McHenry Road are required for the intersection to operate similarly to that when parking is prohibited.

The Illinois Department of Transportation Bureau of Design and Environment Manual and Local Roads Manual state that parking along urban streets should be avoided and that off-street parking facilities should be provided. On-street parking reduces capacity, impedes traffic flow and may produce undesirable traffic operations. On-street parking

along arterial routes should only be considered where adequate capacity is available in the through lanes and adequate parking is not available on adjacent streets or off-street parking facilities. There is only one through lane in each direction along Old McHenry Road and there is insufficient room to provide two through lanes within the existing right-of-way which would allow the provision to pass a vehicle which is parallel parking. A research study completed by the Federal Highway Administration indicated that capacity increased 78% to 90% by eliminating parking which concurs with the prevailing thought amongst the transportation engineering community that parking reduces capacity for moving traffic.

In lieu of providing two through lanes in each direction along Old McHenry Road, a 12-foot flush median could be added to allow for safe passage around vehicles which are parallel parking. With a flush median and the proximity of parking to the Old McHenry Road at Robert Parker Coffin Road intersection, the flush median would be utilized as a left turn lane along both legs of Old McHenry Road. There is not enough distance between Archer Road and Robert Parker to eliminate the flush median prior to either intersection. As a result, the full 12-foot flush median would be maintained throughout the entire downtown area to provide a consistent and safe cross section. However, the Village of Long Grove has previously stated that left turn lanes at the intersection are not desired. Also, only one (1) six foot sidewalk could be provided along Old McHenry Road without impacting the buildings that are located within the existing right-of-way.

Crash Analysis

Crash reports were obtained from the Lake County Division of Transportation (LCDOT) for the period of January 1, 2004 through December 31, 2009 for the intersection of Old McHenry Road at Robert Parker Coffin Road. A total of 15 crashes occurred within the project limits for the six-year study period. Of these crashes, four (26.7%) were rear end crashes, three (20%) were left turn crashes, three (20%) were right angle crashes, two (13.3%) were side swipe crashes, two (13.3%) were pedestrian crashes, and one (6.7%) was a fixed object crash. Over a quarter (four) of the crashes resulted in personal injury.

Crash data was reviewed along three roadways within Central Business Districts in Lake County where parallel parking is permitted to determine how parking impacts crash rates. Crash data for the three year period from 2010 to 2012 was analyzed for the following three roadways: Illinois Route 21 in Libertyville, Illinois Route 83 in Antioch and US Route 45 in Mundelein. The average number of crashes that were reported which involved a vehicle pulling into a parking spot, a parked vehicle or a vehicle pulling out of a parking space and into a space occupied by another vehicle was 24%. Based on these statistics, approximately 1 out of every 4 crashes was associated with parking along the roadway.

The Illinois Department of Transportation Bureau of Design and Environment Manual and Local Roads Manual state that parking along urban streets should be avoided and that off-street parking facilities should be provided since on-street parking may increase the potential for crashes. In general, studies continually show that parking along roadways increases accidents. A research study completed by the Federal Highway Administration revealed that parking was responsible for over 40% of all mid-block accidents reported along major two-way streets.¹ Studies included in the research also found that 20% of pedestrian accidents involved the pedestrian stepping out from behind parked vehicles and 50% of school-age children killed in traffic were the result of the child stepping into traffic from between parked vehicles.

The high percentage of accidents associated with parking can be attributed to reduced sight distances as a result of parked vehicles, abrupt stops resulting from vehicles making a parking maneuver, driver tendency to shy away from parked vehicles which results in encroachment into adjacent lanes, and the opening of doors by the vehicle

¹ Source: ASCE Journal of Transportation Engineering, January/February 2004

occupant(s). It is safe to make the presumption that, since parking is responsible for a high percentage of accidents, the number of accidents would increase if parking were instituted along a roadway where it did not previously exist.

Parking History Along Old McHenry Road

No parking zones along Old McHenry Road were grandfathered into the 1983 No Parking ordinance. Prior to 1983, the Village of Long Grove installed No Parking signs along Old McHenry Road after the village parking lots opened. In 1985, Village Administrator Cal Doughty requested permission to add pavement marking delineating the no parking zones since motorists were not adhering to the signage.

No parking signs along Old McHenry Road were removed during construction of the Archer Road improvements and off-street parking facility to allow for temporary parking along Old McHenry Road. These signs were to be reinstated after the Archer Road improvements were completed and were replaced.

The construction of the Archer Road parking facility in conjunction with the existing parking lot on the west side of Old McHenry Road, south of Robert Parker Coffin Road, were to provide sufficient parking space for the downtown area. As stated in the *Village of Long Grove Downtown Master Plan (June 2008)*, "Both Downtown public parking lots – in conjunction with other parking on private properties – have ample capacity to accommodate the everyday needs of Downtown businesses. In addition, the Village may consider reconfiguring portions of the lots to accommodate new public improvements and/or private market redevelopment that enhances overall Downtown marketplace performance." This was based on technical studies which were completed in 2007 by the Village prior to the preparation of the master plan and included the *Village Wide Traffic Study* and *Parking Study of Downtown Long Grove*.

Conclusion

The HCS analysis shows that, if parking is allowed along Old McHenry Road, left turn lanes are required in order for the intersection to operate similarly to when parking is prohibited. Neither alternate which permits parking along Old McHenry Road provides a second through lane which allows for the provision of passing a vehicle which is parallel parking. Studies consistently show that a high number of accidents along roadways where parking is allowed are attributed to parking maneuvers or parked vehicles. Also, no parking zones have been in place along Old McHenry Road for approximately 30 years and the off-street parking facilities provide sufficient parking space for the downtown area. Parking along Old McHenry Road should be prohibited since a second lane is not provided that would allow for passing a vehicle that is parallel parking, the high probability of an increase in crashes associated with parking, and the availability of adequate off-street parking facilities nearby. No parking along Old McHenry road will provide a safe and efficient roadway for motorists, bicyclists, and pedestrians.