



Technical Memorandum

To: Mr. Joseph A. Saccomanno, P.E.
City of Park Ridge
Director of Public Works

Date: November 3, 2006

From: Robert J. Andres, P.E., P.T.O.E.
Joel E. Christell, P.E.

Re: Intersection of Washington Avenue at Northwest
Highway

Redevelopment activities on the Executive Office Plaza site located between Touhy Avenue and Northwest Highway immediately east of Washington Avenue present a once in a lifetime opportunity to correct a long standing traffic problem at the intersection of Washington Avenue and Northwest Highway (see Exhibit A-1). This Technical Memorandum analyzes existing P.M. peak hour traffic operation at the intersection and explores the traffic capacity and operational benefits of realigning Washington Avenue to eliminate the offset between its north and south intersection legs at Northwest Highway. A concept plan for the realignment is also presented.

A. Existing Conditions

The City of Park Ridge does not have an adequate system of north-south arterial roadways. As a result, collector and local streets shoulder much of the burden of north-south arterial travel through the community. Traffic is concentrated on roadways that cross the railroad tracks or which have signalized intersections at major east-west arterial streets. Washington Avenue is one of the collector streets in the study area that is used for north-south mobility.

Washington Avenue is a two-lane 30-foot wide roadway with on-street parking allowed on one side. Washington Avenue is signalized at its intersection with Northwest Highway; however, the north and south legs of Washington Avenue are offset by about 220 feet (see Exhibit A-2).

The traffic signal installation operates in a traffic-actuated mode which allows the cycle length to vary based on the needs of traffic, subject to maximum green phase settings. It is not interconnected with nearby traffic signals. The Washington Avenue offset requires an inefficient "split-phase" traffic signal sequence where the southbound and northbound

Washington Avenue movements do not flow concurrently, but rather flow sequentially. The Illinois Department of Transportation (IDOT), which controls signal timings, favors traffic movements on Northwest Highway, and as a result provides limited green time to the Washington Avenue phases. Traffic on Northwest Highway flows relatively well, but the Washington Avenue approaches experience long backups in the P.M. peak hour. On the afternoon we observed traffic conditions in the study area, we noted southbound vehicle queues that extended from Northwest Highway to nearly Touhy Avenue, a distance of about 800 feet.

Exhibits A-3 and A-4 depict existing P.M. peak hour traffic volumes at the Washington Avenue/Northwest Highway intersection. Appendix B contains the results of a capacity analysis for the intersection. The intersection operates at an overall Level of Service of Level "D" with an average control delay per vehicle of 51 seconds. The Northwest Highway movements operate at Level of Service "B" (average delay of 16 sec./veh.), but southbound Washington Avenue operates at Level of Service "F" (average delay of 170 sec./veh.). The 95th percentile back-of-queue length for this movement was predicted to be 825 feet which matches field observations. The delays on Washington Avenue in the P.M. peak hour likely cause drivers to avoid it and use nearby parallel local streets to access or cross Northwest Highway.

B. Washington Avenue Realignment

Aligning the north and south legs of Washington Avenue at Northwest Highway will provide a significant improvement to intersection capacity by eliminating the need for split-phasing. This would allow more green time to be allocated to Washington Avenue, thereby reducing traffic backups, without penalizing the Northwest Highway traffic movements.

Exhibit A-5 depicts reassigned P.M. peak hour traffic volumes at the Washington Avenue/Northwest Highway intersection if the north and south intersection legs are aligned. Appendix B contains the results of a capacity analysis for a realigned intersection. The realigned intersection would operate at a significantly higher overall Level of Service of Level "B" with an average control delay of 19 seconds per vehicle. This represents a 63% reduction in overall intersection control delay.

The Northwest Highway movements would stay at about the same Level of Service as exists today, operating at Level "B" (average delay of 18 sec./veh.). The southbound Washington Avenue movements, however, would improve dramatically compared to existing conditions. They would operate at Level of Service "B" with an average delay of 20 seconds per vehicle (down from 170 sec./veh.). The 95th percentile back-of-queue length for southbound Washington Avenue would be 75 feet (compared to 825 feet for the existing intersection).

C. Implementation of Washington Avenue Realignment

Implementation of the Washington Avenue realignment would require close coordination with redevelopment activities on the adjacent parcels within the Executive Office Plaza site. Since not all parcels are under a single ownership, implementing the realignment would have

to occur in stages. The first stage would occur in concert with the Touhy/Washington Mixed-Use Development. That developer would be requested to dedicate land on the southwest corner of their parcel that would be occupied or cut off by the realignment, in lieu of contributing towards an improvement at this intersection. They would not be asked to contribute towards the construction cost of the realignment itself.

The second stage would depend upon how the remaining parcels are redeveloped. If a single developer redevelops both the Polish Women's Alliance Building and the George S. May parcel, then that developer would be requested to dedicate the remainder of the right-of-way and construct the realignment. The City would help to offset some developer costs by abandoning the unneeded portion of Washington Avenue and swapping the excess right-of-way for the new right-of-way (please note that we have not investigated the feasibility of relocating utilities that exist within the existing right-of-way).

If the two southerly parcels redevelop separately, then the City may have to take the lead in implementing the realignment. The City could apply for funding through the Surface Transportation Program (STP) or the Congestion Mitigation and Air Quality (CMAQ) program to acquire the needed land and construct the improvement.

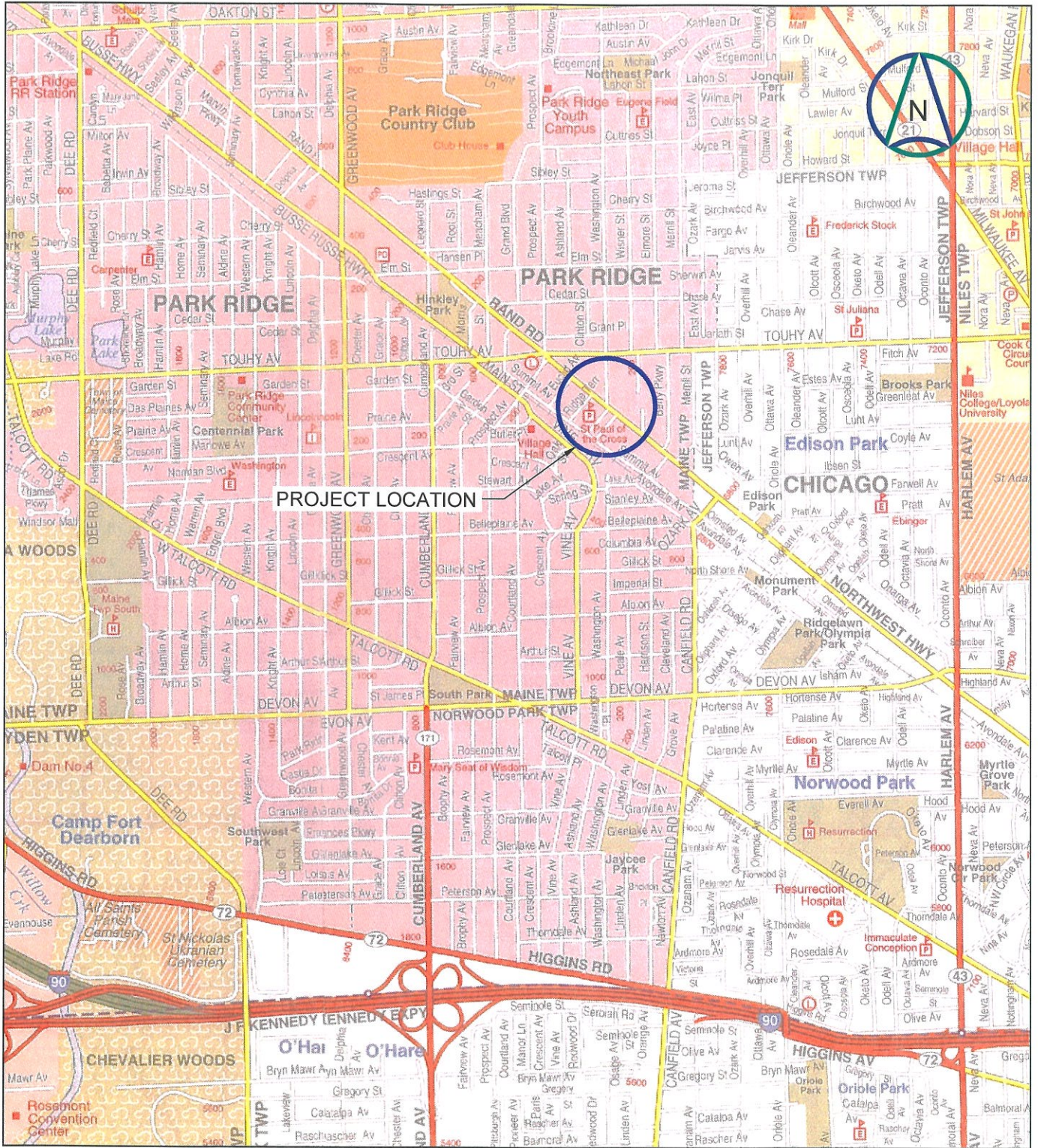
D. Conclusions and Recommendations

Based on the above, it is clear that realigning the Washington Avenue intersection legs will provide a dramatic reduction in traffic congestion at this intersection. The improvement will also likely attract traffic that presently diverts to nearby local streets during the peak hours back to Washington Avenue.

The City of Park Ridge should strive, if possible, to see that new developments contain reasonable features that **enhance** the operation of the surrounding street network, rather than just avoiding significant degradation. Toward that end, it is recommended that site planning for the Touhy/Washington Mixed-Use Development set aside the needed right-of-way for a future realignment of Washington Avenue at Northwest Highway that would occur within its parcel. It is further recommended that future redevelopment efforts on the Executive Office Plaza site be required to incorporate the realignment in their site plan and implement the remainder of the realignment improvement.


Appendix A

Exhibits

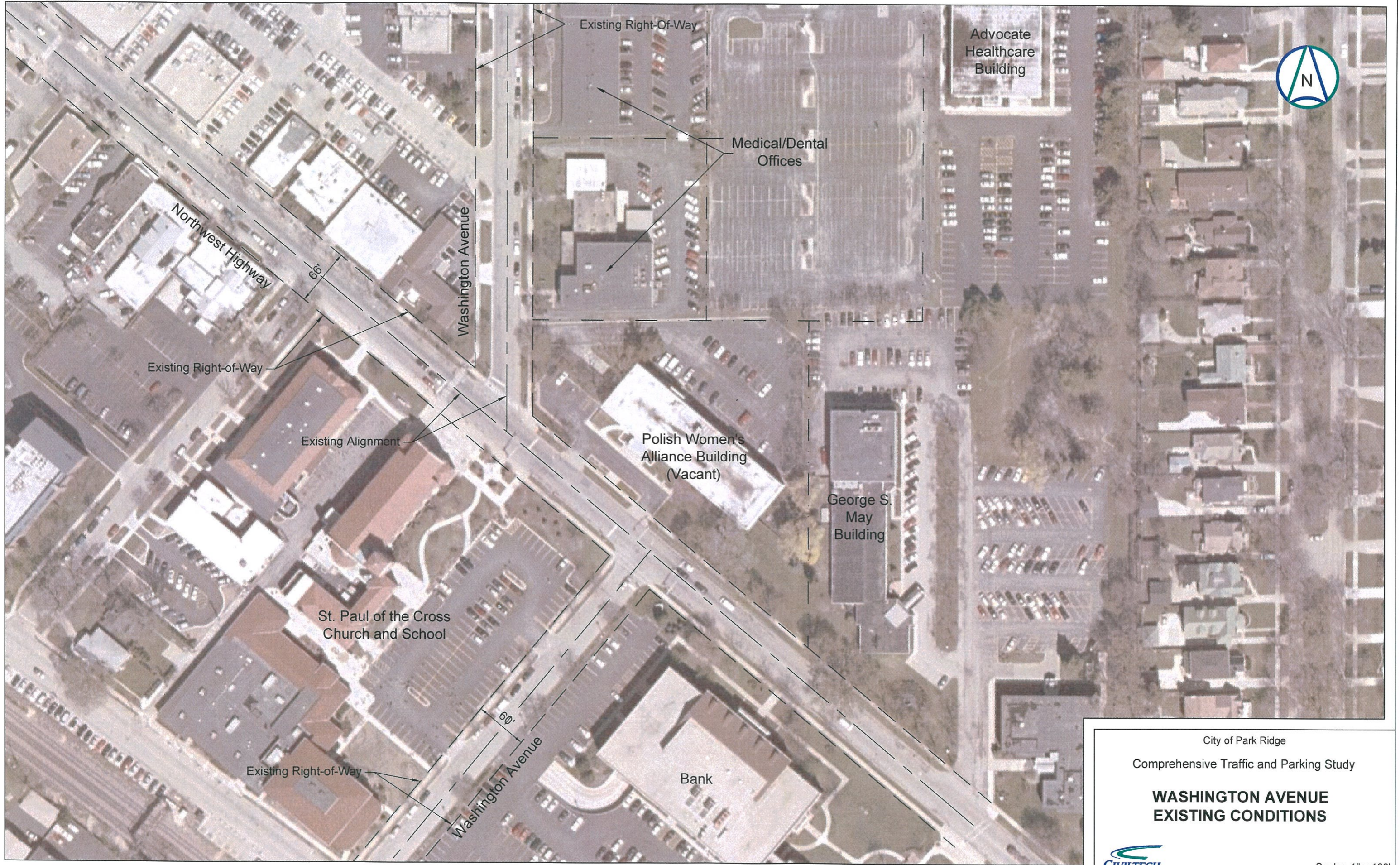


PROJECT LOCATION

City of Park Ridge
 Comprehensive Traffic and Parking Study
**WASHINGTON AVENUE
 LOCATION MAP**




Scale: N.T.S.

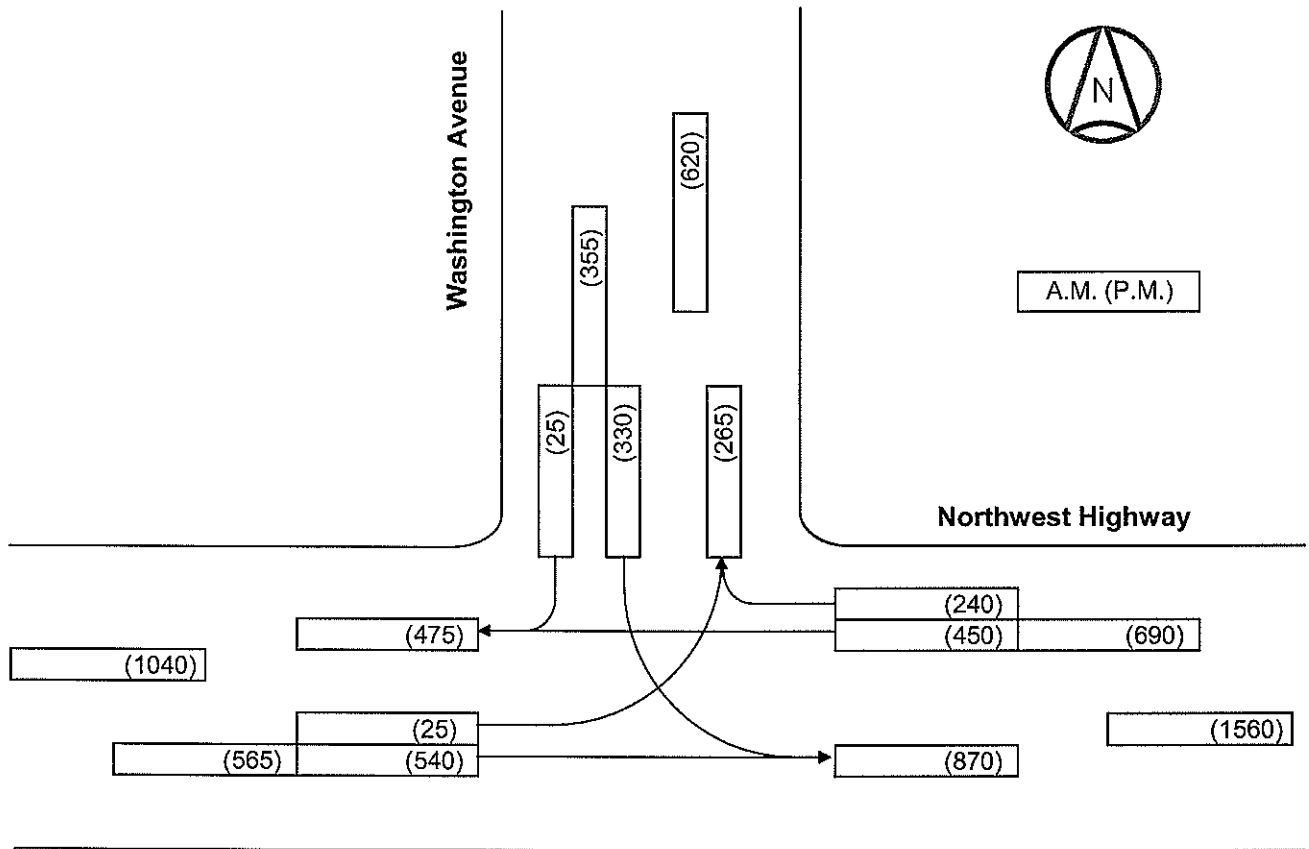


City of Park Ridge
 Comprehensive Traffic and Parking Study

**WASHINGTON AVENUE
 EXISTING CONDITIONS**

 CIVILTECH

Scale: 1" = 100'



PEAK HOURS:

5:00 P.M. - 6:00 P.M.

DATE OF COUNT:

10/26/2006

City of Park Ridge

Washington Avenue Realignment
2006 AM (PM) PEAK HOUR TRAFFIC
 Existing Intersection (West)

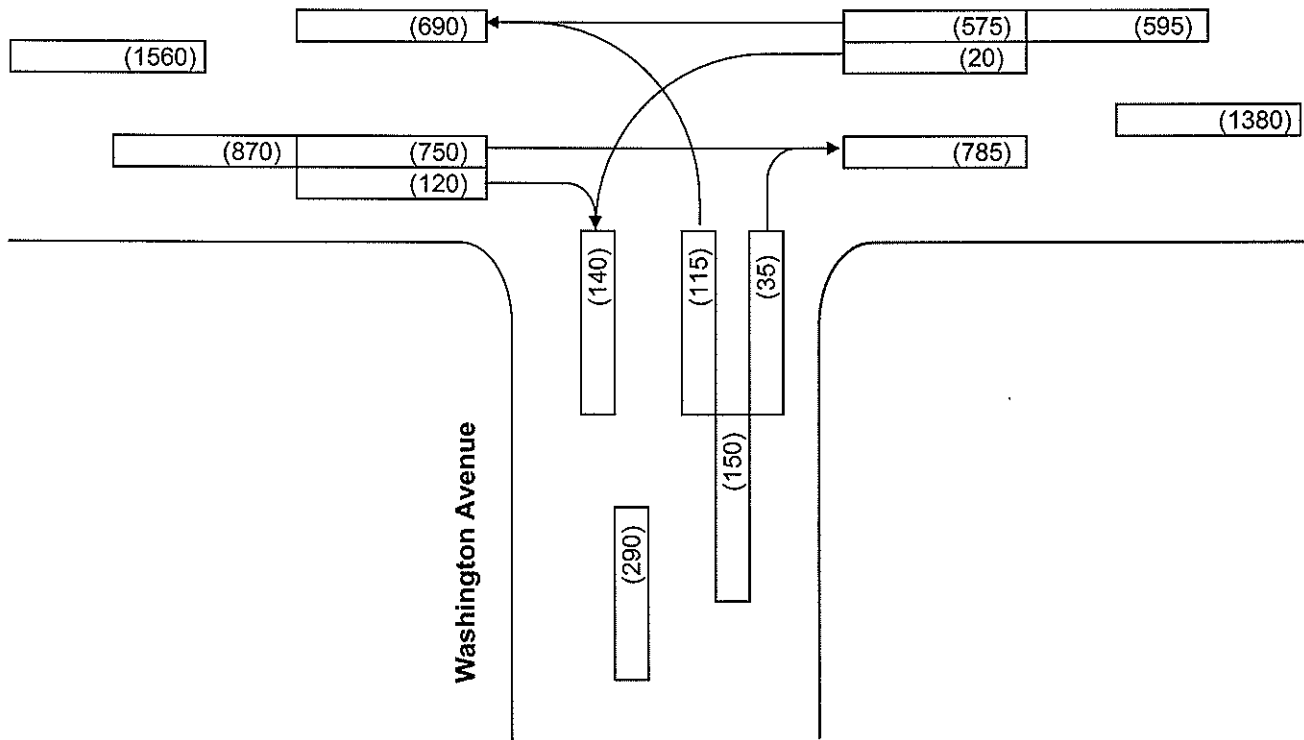


Not to Scale



A.M. (P.M.)

Northwest Highway



PEAK HOURS:

5:00 P.M. - 6:00 P.M.

DATE OF COUNT:

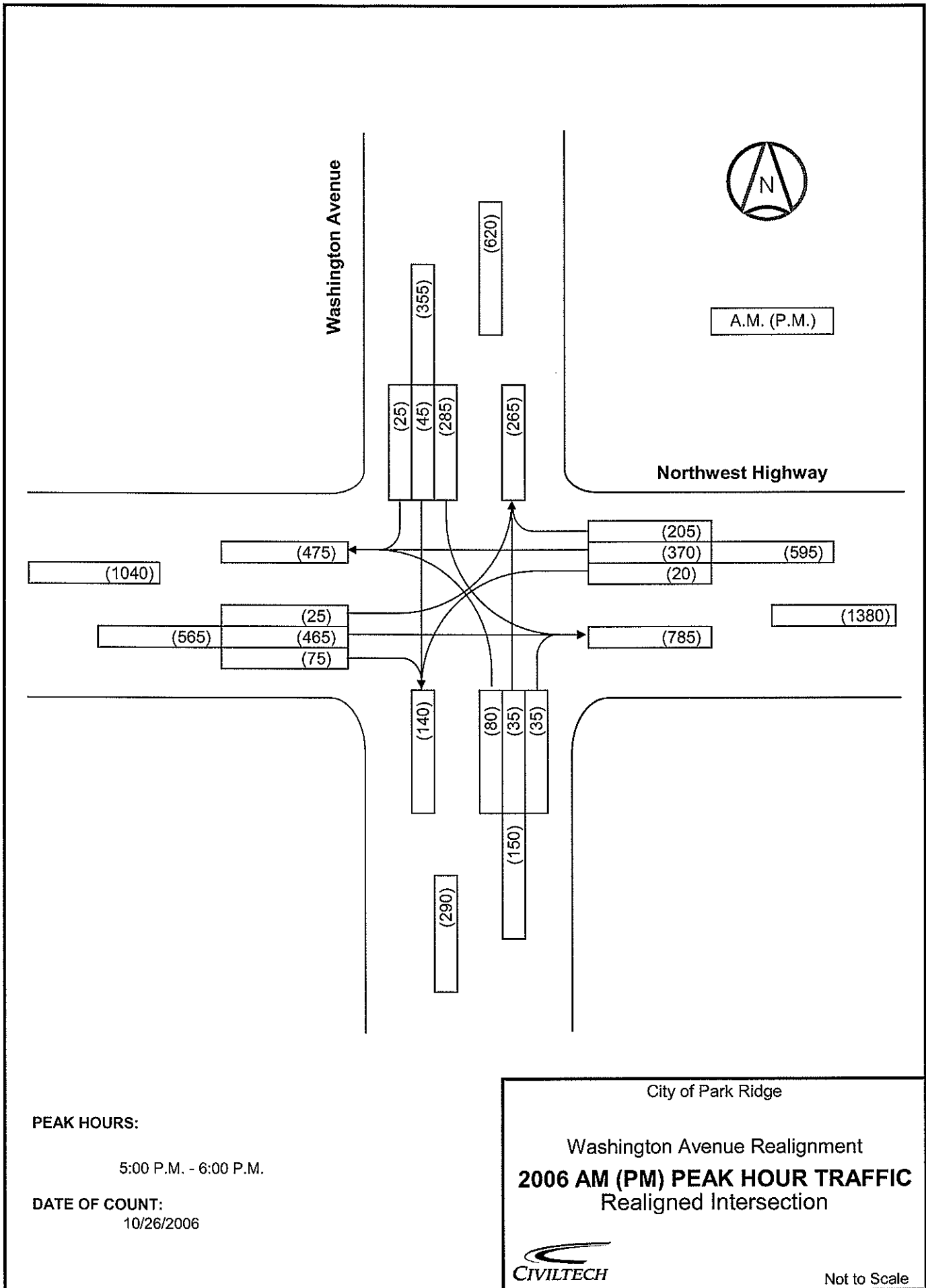
10/26/2006

City of Park Ridge

Washington Avenue Realignment
2006 AM (PM) PEAK HOUR TRAFFIC
Existing Intersection (East)



Not to Scale

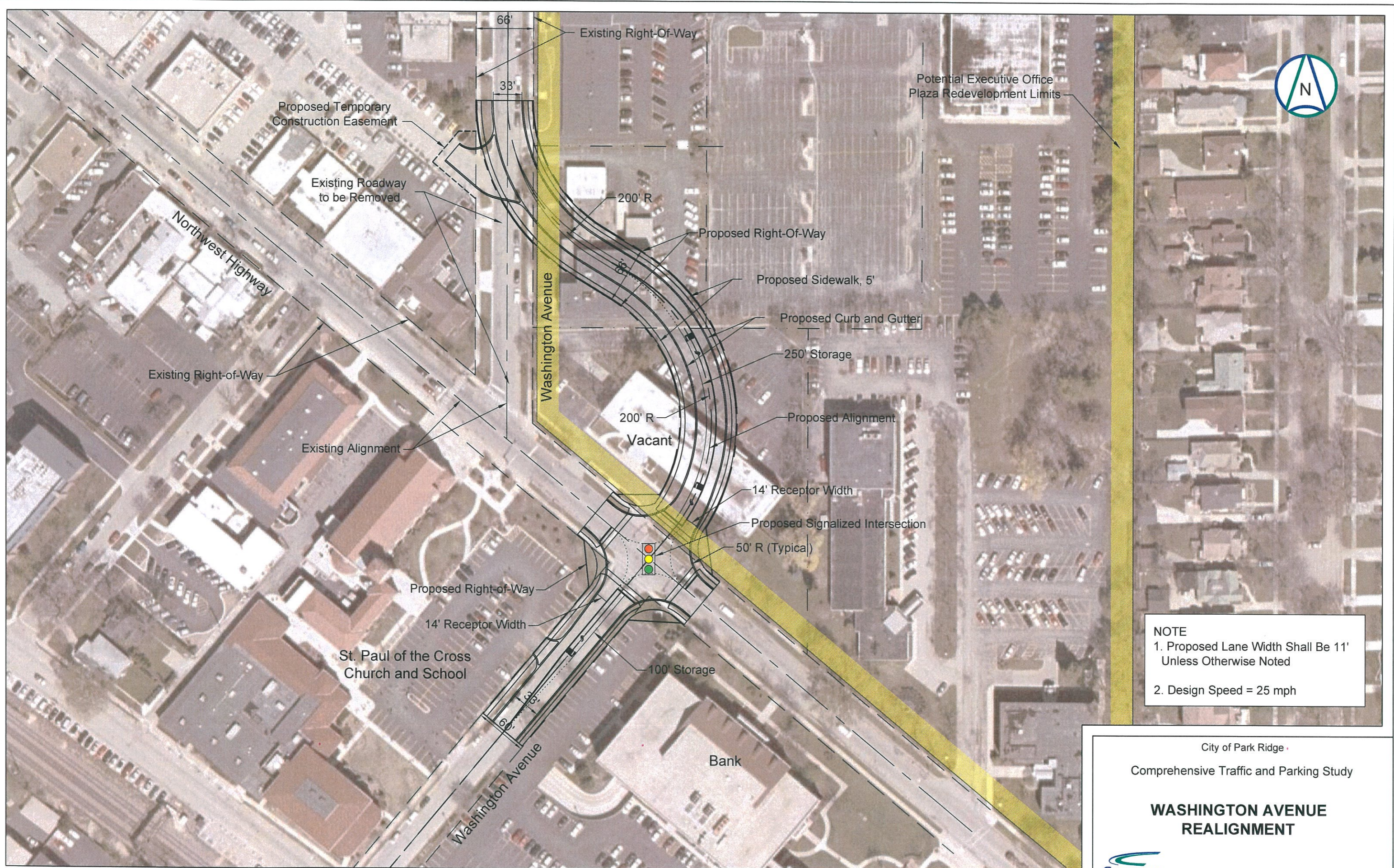


PEAK HOURS:

5:00 P.M. - 6:00 P.M.

DATE OF COUNT:

10/26/2006



NOTE
 1. Proposed Lane Width Shall Be 11' Unless Otherwise Noted
 2. Design Speed = 25 mph

City of Park Ridge
 Comprehensive Traffic and Parking Study

**WASHINGTON AVENUE
 REALIGNMENT**

CIVILTECH

Scale: 1" = 100'