

Memorandum



Department of Transportation

City of Winston-Salem
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336-722-8000
CityofWS.org

TO: Daisy Hines
FROM: Alex Stone, Transportation Engineer
DATE: June 21, 2024
SUBJECT: All Way Stop Control Request – Griffith Road & Waterwheel Circle
CC: Bobby Croom, PE – Assistant Director of Transportation
Reid Hutchins, Transportation Operations Manager

The Winston-Salem Department of Transportation (WSDOT) has completed a traffic analysis for an All Way Stop Control (AWSC) to be implemented at the intersection of Pine Griffith Road & Waterwheel Circle/Victoria Park Lane. The provisions used in this study are from the Federal Highway Administration’s Manual on Uniform Traffic Control Devices. Data collected by WSDOT was used to determine if the following provisions were met.

Warrant A - Crash Experience: *For a four-leg intersection, there are five or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of AWSC. For a three-leg intersection, there are four or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of AWSC.*

The intersection of Griffith Road at Waterwheel Circle and Victoria Park Lane is a four-leg intersection with Griffith Road being the major (uncontrolled) road. The five-year crash history indicates that there have been 4 reported crashes at this intersection in the past 5 years, and only 2 of those crashes were susceptible to correction by the installation of AWSC. The reported types of these crashes for the previous five years were: 2 angle crashes, one sideswipe collision with a vehicle in the right turn lane, and 1 vehicle hitting a wall during a police chase. The yearly occurrence of these crashes was as follows: 1 in 2019; 1 in 2020; 1 in 2021; 1 in 2022; and 0 in 2023/2024. Based on this data, the intersection of Griffith Road & Waterwheel Circle/Victoria Park Lane does not meet Warrant A for AWSC.

Warrant B - Sight Distance: *AWSC may be installed at an intersection where an engineering study indicates that sight distance on the minor-road approaches controlled by a STOP sign is not adequate for a vehicle to turn onto or cross the major (uncontrolled) road.*

Griffith Road has slight vertical and horizontal curves near the intersection of Waterwheel Circle. A staff investigation at the location indicates that there are slight limitations to sight distance is available in both directions for vehicles to turn onto Griffith Road. However, it was noted that WSDOT will be recommending a Speed Limit reduction for this section of Griffith Road to improve reaction time for all vehicles approaching intersection and reduce sight distance requirements.

Warrant C - Transition to Signal Control or Transition to Yield Control at a Circular Intersection: *AWSC may be installed at locations where AWSC is an interim measure that can be installed to control traffic while arrangements are being made for the installation of a traffic control signal at the intersection or for the installation of yield control at a circular intersection.*

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City Council: Mayor Allen Joines; Denise D. Adams, Mayor Pro Tempore, North Ward; Barbara Hanes Burke, Northeast Ward; Robert C. Clark, West Ward; John C. Larson, South Ward; Jeff MacIntosh, Northwest Ward; Kevin Mundy, Southwest Ward; Annette Scippio, East Ward; James Taylor, Jr., Southeast Ward; City Manager: W. Patrick Pate

The intersection of Griffith Road & Waterwheel Circle/Victoria Park Lane is not scheduled to have a traffic signal installed nor to be converted to a circular intersection at this time.

Warrant D - 8-Hour Volume: *AWSC may be installed at an intersection where an engineering study indicates:*

- A. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day; and*
- B. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours.*

If the 85th percentile approach speed of the major-street traffic exceeds 40mph, the minimum vehicular volume warrants may be reduced to 70 percent of the values given in A and B.

See attached Exhibit A detailing traffic volumes collected for a 24-hour period on a typical weekday. This data indicates that the total traffic entering the intersection from the minor street for a full 24-hour period does not meet the 8 hour volume warrants. Even with the 85th percentile speed exceeding 40 MPH.

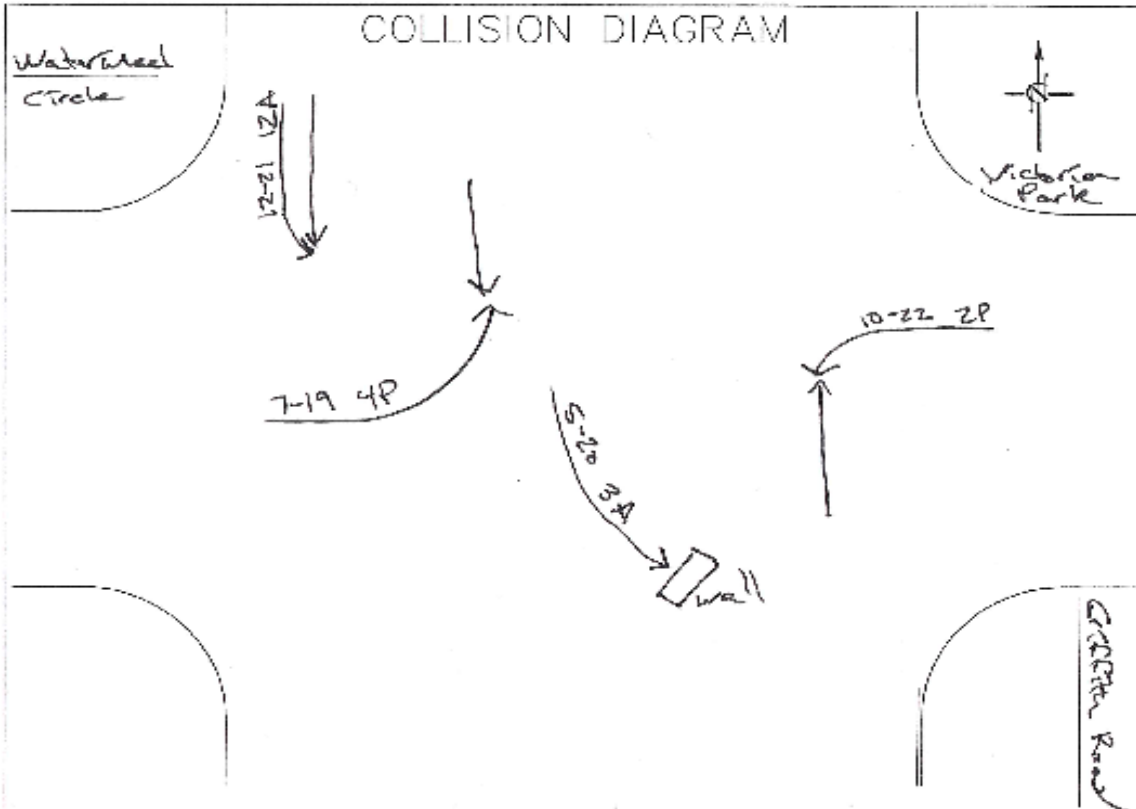
Warrant E - Other Factors: *AWSC may be installed at an intersection where an engineering study indicates that AWSC is needed due to other factors not addressed in the other AWSC warrants. Such other factors may include, but are not limited to, the following:*

- A. The need to control left-turn conflicts,*
- B. An intersection of two residential neighborhood collector streets of similar design and operating characteristics where AWSC would improve traffic operational characteristics of the intersection, or*
- C. Where pedestrian and/or bicyclist movements support the installation of AWSC.*

According to the 2021 Federal Functional Classification Map, Griffith Road is a collector street, both Waterwheel Circle and Victoria Park Lane are private neighborhood streets. Given this classification There appears to be no other factors outside of the warrants above that would necessitate the installation of AWSC.

Recommendation

The intersection of Griffith Road & Waterwheel Circle/Victoria Park Lane met none of the MUTCD provisions for the installation of AWSC. The most recent 5-year crash history indicates that the intersection does not exceed safety level thresholds, nor do the types of reported crashes warrant the installation of All Way Stop Control at this intersection. Additionally, the Severity Index of this crash history was calculated to be 2.85. NCDOT considers locations with a Severity Index of less than 8.4 to have less severe and/or infrequent injuries sustained in crashes. Based on this information, WSDOT staff does not recommend the installation of an AWSC at this time. WSDOT staff will be recommending a Speed Limit reduction of 45 MPH to 35 MPH along Griffith Road from Hanes Mall Boulevard to Snead Road. WSDOT will also install "Intersection Ahead" advanced warning signs on both approaches of Griffith Road (See Attached Exhibit B)



SYMBOLS & TYPES		SHOW FOR EACH	
MOVING VEHICLE		REAR END	
HACKING WHEEL		HEAD ON	
PEDESTRIAN		SIDE SWIPE	
PARKED VEHICLE		OUT OF CONTROL	
FIXED OBJECT		LEFT TURN	
FATAL ACCIDENT		RIGHT ANGLE	
INJURY ACCIDENT			

INTERSECTION <u>Griffith Road & Waterwheel to Victoria Park</u>	
PERIOD <u>5 years</u>	FROM <u>April 19</u> TO <u>April 24</u>
BY <u>RA</u>	DATE <u>4-12-24</u>
ACCIDENTS IN 2019 - 1	ACCIDENTS IN 2020 - 0
ACCIDENTS IN 2020 - 1	ACCIDENTS IN 2021 - 0
ACCIDENTS IN 2021 - 1	ACCIDENTS IN 2022 - 0
ACCIDENTS IN 2022 - 1	ACCIDENTS IN 2023 - 0
TOTAL # OF ACCIDENTS - <u>4</u>	
INJURY ACCIDENTS -	
CHARGABLE ACCIDENTS -	
PROPERTY DAMAGE ACCIDENTS -	
TOTAL PROPERTY DAMAGE - \$	
TOTAL # OF ACCIDENTS IN REPEATABLE PATTERNS -	
TOTAL ACCIDENTS IN PATTERNS	%
TOTAL NUMBER OF ACCIDENTS	

INJURY CLASS	
K -	
A -	
B -	
C -	
TOTAL INJURIES -	

