MAYOR LINDA GORTON

LEXINGTON

JEFFERY NEAL
DIRECTOR
TRAFFIC ENGINEERING

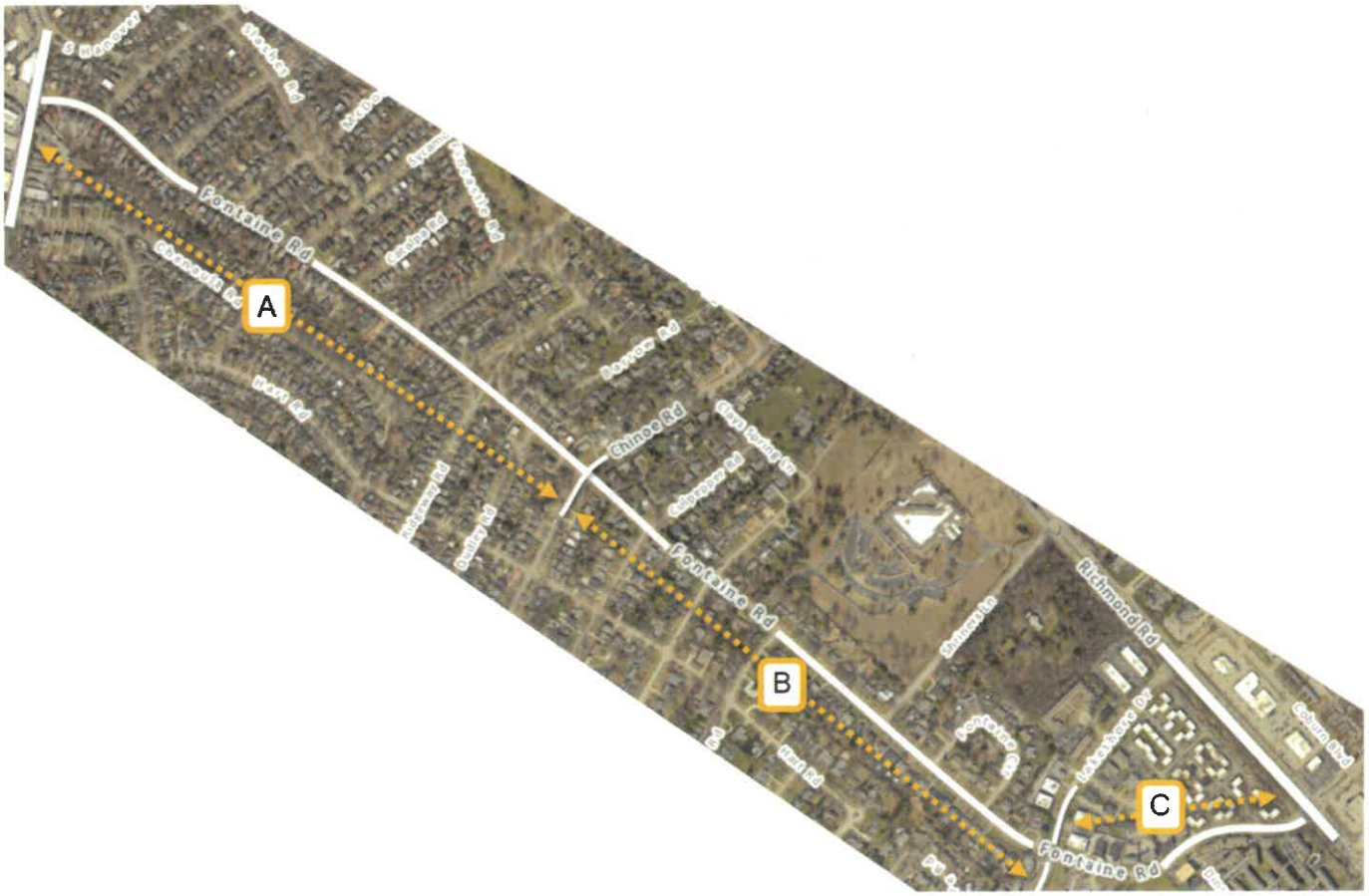
June 30, 2022

Councilmember Liz Sheehan
200 E. Main St.
Lexington, KY 40507
lsheehan@lexingtonky.gov

Dear Councilmember Sheehan,

Per a citizen request, a study was completed on Fontaine Road between East High Street and Richmond Road to determine if a speed limit adjustment is warranted on this minor arterial street. The study gathered data and reviewed the volume and speed of vehicles utilizing the street. Volume and speed data were collected at four locations on Fontaine Road.

In summary, based on the traffic data and speed limit criteria, some segments of Fontaine Road meet the warrants for an adjusted speed limit. This evaluation is detailed in the following pages.



Aerial of Fontaine Road study area and surrounding area

Traffic Study

The Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) Section 2B.13 addresses speed limits: "When a speed limit is to be posted, it should be within 5 mph of the 85th percentile speed of free-flowing traffic. Other factors that may be considered when establishing speed limits are the following:

A. Road surface characteristics, shoulder conditions, grade, alignment, and sight distance;
B. The pace speed;
C. Roadside development and environment;
D. Parking practices and pedestrian activity; and
E. Reported crash experience for at least a 12-month period."

In following MUTCD guidelines, vehicle volume and speed of vehicles utilizing the street was captured for a 24-hour period. Volume and speed data were collected for three segments of Fontaine Road. These segments are:

A. East High Street to Chinoe Road
B. Chinoe Road to Lakeshore Drive
C. Lakeshore Drive to Richmond Road

Study Findings

A. The study area of Fontaine Road between East High Street and Richmond Road has the following characteristics:

    a. Posted speed limit: 30 mph between E High Street & Chinoe Road; 35 mph between Chinoe Road and Richmond Road
    b. Width: 30-feet between E High Street & Chinoe Road; 36-feet between Chinoe Road and Richmond Road
    c. Utility Strips/Sidewalks: Present both sides
    d. Street lighting: Present both sides
    e. On-street parking: Prohibited
    f. Pavement markings: yellow centerlines, selective stop bars and crosswalks
    g. Street classification: Minor Arterial

B. The use of the 85th percentile speed, or the speed at which 85% of the vehicles are traveling at or below, in analysis is based on the theory that a large majority of drivers are reasonable and prudent, do not want to crash, and want to reach their destination in the shortest amount of time possible.

    The 85th percentile speeds along Fontaine Road where the speed limit is 30 mph ranged from 33 mph on southbound Segment A of Fontaine Road to 38 mph on northbound Segment A of Fontaine Road. Comparatively, the average speeds ranged from 31.03 to 33.47 mph.

The 85th percentile speeds along Fontaine Road where the speed limit is 35 mph ranged from 33 mph on northbound Segment C of Fontaine Road to 41 mph on northbound Segment B of Fontaine Road. Comparatively, the average speeds ranged from 28.2 to 35.6 mph.

The following table below shows the speed and volume data obtained for each segment of Fontaine Road during the study time period:

Segment of Fontaine Road		Avg. Speed (mph)	Speed Limit (mph)	% over Speed Limit	85th PCTL Speed (mph)	Peak Hour Vol. (veh)		Avg. Daily Traffic Vol. (veh)	
A	NB E High-Chinoe	33.47	30	**79.15%**	**38**	193	**690**	3377	**7528**
	SB E High-Chinoe	31.03	30	**55.75%**	**35**	497		4151	
B	NB Chinoe-Lakeshore	35.19	35	**52.50%**	**41**	212	**753**	3213	**7587**
	SB Chinoe-Lakeshore	35.37	35	**48.90%**	**40**	541		4374	
C	NB Lakeshore-Richmond	28.2	35	4.15%	33	251	803	2924	8366
	SB Lakeshore-Richmond	30.26	35	9.45%	35	552		5442	

C. The properties within the study area of Fontaine Road are zoned for residential parcels.
   a. East High Street to Chinoe Road: neighborhood and traffic patterns are established with most development along this segment complete by 1950.
   b. Chinoe Road to Lakeshore Drive: neighborhood and traffic patterns are established with most development along this segment complete by 1970.
   c. Lakeshore Drive to Richmond Road: neighborhood and traffic patterns are established but vary seasonally due to the location of Henry Clay High School at the corner of Lakeshore Drive and Fontaine Road.

D. A review of the collision history for the Fontaine Road study segments per crashinformationky.org identified 111 recorded collisions in the 5 years of 2016-2020. There were 19 injury collisions and no fatal collisions reported. Using the reported crashes, road geometry, and number of access points, the FHWA USLIMITS2 tool was utilized to determine the section crash rate, section injury crash rate, and recommended speed limit.

   The FHWA USLIMITS2 was developed based on research through National Cooperative Highway Research Program (NCHRP) Project 3-67 and considers all major factors used by practitioners to make engineering judgment in determining an appropriate speed limit. Additional information is available at safety.fhwa.dot.gov/uslimits.

   The section crash rate exceeds the critical rate for Segments B and C, the crash warrant is met for these segments of Fontaine Road. Additional details are included in the following table.

	Segment A: East High to Chinoe	Segment B: Chinoe to Lakeshore	Segment C: Lakeshore to Richmond Road
Reported Crashes	28	30	53
Section Crash Rate*	283	**333**	**1197**
Critical Crash Rate*	320	324	366
Reported Injury Crashes	4	9	6
Injury Crash Rate*	30	100	136
Injury Crash Rate*	70	121	147
USLIMITS2 Recommended Speed Limit	35 mph	35 mph	30 mph

* Rates are per 100 MVM (million vehicle miles)

Recommendations

As detailed in the *MUTCD*, Fontaine Road meets the following criteria for speed limit adjustment based on the documented traffic volumes, speeds, and crash history. The criterion that was met includes:

A. Vehicles traveling on the segment from East High Street to Chinoe Road had an 85th percentile speed of 38 mph. The reported crash rates are below the critical rates. Based on the MUTCD guideline that speed limits "should be within 5 mph of the 85th percentile of free-flowing traffic" and the FHWA recommended speed, **Traffic Engineering recommends no change to the speed limit of 30 mph on Fontaine Road from East High Street to Chinoe Road**.

B. Vehicles traveling on the segment from Chinoe Road to Lakeshore Drive had an 85th percentile speed of 41 mph. The reported crash rates are slightly above the critical rates. Based on the MUTCD guidelines, crash data, and the FHWA recommended speed, **Traffic Engineering recommends no change to the speed limit of 35 mph on Fontaine Road from Chinoe Road to Lakeshore Drive.** As the section crash rate exceeds the critical rate for this section of Fontaine Road, Traffic Engineering will review this section for safety improvements such as additional signs and revised pavement markings.

C. Vehicles traveling on the segment from Lakeshore Drive to Richmond Road had an 85th percentile speed of 35 mph. The reported crash rates are significantly above the critical rates. Based on the MUTCD guidelines, crash data, and the FHWA recommended speed, **Traffic Engineering recommends the speed limit be changed from 35 mph to 30 mph on Fontaine Road from Lakeshore Drive to Richmond Road.** As the section crash rate exceeds the critical rate for this section of Fontaine Road, Traffic Engineering will review this section for safety improvements such as additional signs and revised pavement markings.

The Division of Traffic Engineering coordinated with representatives from the Division of Police and Division of Fire and Emergency Services to obtain input regarding traffic and safety operations of Fontaine Road.

- The Division of Police has reviewed this document and has no objections to the recommendations in this report.
- The Division of Fire has reviewed this document and has no objections to the recommendations in this report.

Please share this report with your constituents. Should you have any questions, contact Grace Foley at the Division of Traffic Engineering at gfoley@lexingtonky.gov or (859) 258-3485.

Sincerely,

Brian C. Knapp, PE, PLS
Traffic Engineer Manager
Division of Traffic Engineering

BCK/gnf

cc: Nancy Albright, PE, Commissioner of Environmental Quality & Public Works
Jeffery Neal, PE, Director of Traffic Engineering
Jim Woods, PE, PLS, Deputy Director of Traffic Engineering
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