

DESIGN MEMORANDUM

To: Mr. Bill Stogsdill, CPM, PWM, PWLF
From: David J. Mennenga, P.E., PTOE
Date: December 14, 2018
Subject: Fairway, KS Traffic Calming Projects – “Before” and “After” Comparisons

As you requested, GBA has obtained the required daily 24-hour machine traffic counts (over a one-week total period length) at seven locations within the City of Fairway, in order to assess the “after” traffic conditions following the installation of temporary speed humps on both Belinder Avenue and Neosho Lane. These traffic counters were installed during November 14-20, 2018, prior to the Thanksgiving holiday weekend. The attached **Table 1** provides a comparative summary of the previously reported “before” traffic data and these “after” traffic counts at the previously evaluated roadway locations.

The following bullet list summarizes the comparative “before” and “after” traffic volumes and travel speeds on the roadway segments that have been evaluated during these traffic calming studies:

- Neosho Lane: Following the installation of a temporary speed hump on this roadway, very significant reductions in the vehicle travel speeds were observed. All average and 85th-percentile speeds were reduced by 6 to 7 miles per hour (mph). There was also a 20- to 30-percent decrease in the number of vehicles exceeding the 20-mph posted speed limit. Traffic volumes on this roadway were marginally higher during this “after” condition, more noticeably in the southbound direction.
- Mohawk Street: Only a limited amount of traffic data was obtained on this roadway segment, due to a water main break on Thursday, November 15th that interrupted the data collection process. Based on this limited data, the traffic volumes on Mohawk Street may have slightly increased following the installation of the speed hump on Neosho Lane. It appears that there was a larger traffic volume increase in the southbound direction. Vehicle speeds were slightly reduced for northbound vehicles, but the average and 85th-percentile speeds for southbound traffic were both higher by 2- to 3-mph.
- Pawnee Lane: Traffic conditions along this roadway were generally the same in the “before” and “after” traffic conditions, since this roadway is two blocks away from the installed speed hump. Vehicle travel speeds were slightly reduced in the northbound direction on Pawnee Lane, and



slightly increased in the southbound direction. Overall, the traffic volumes were not significantly changed between the two traffic conditions.

- Belinder Avenue: Like during the “before” traffic condition assessments, a total of three count stations were utilized along this study corridor. Traffic volumes were found to be somewhat reduced at these three count stations after the installation of the two temporary speed humps on this roadway. It is reasonable to assume that some of the neighborhood “cut-through” traffic previously using Belinder Avenue has now been diverted away from the study corridor to avoid these speed humps.
 - At the northern count station (to the north of the two installed speed humps), two-way traffic volumes were reduced by about 400 vehicles per day (vpd) on average for the weekdays counted, and by about 100 vpd on average for the weekend days. Travel speeds were still somewhat higher than the posted 25-mph speed limit, especially for the southbound vehicles still approaching the temporary speed humps. The northbound travel speeds were slightly decreased after vehicles had already traversed the speed humps.
 - At the middle count station (located between the two installed speed humps), similar traffic volume reductions were also observed, as would be expected. The vehicle travel speeds in both directions along Belinder Avenue were found to be nearly identical in the “before” and “after” traffic conditions. This is actually an encouraging measurement, as it indicates that vehicles are not able to speed excessively after they have traversed one speed hump but still have another one downstream ahead of them.
 - At the southern count station (to the south of the two installed speed humps), similar traffic volume reductions were still noted. At this traffic count station, the most significant speed reductions along the Belinder Avenue corridor were noted. The northbound travel speeds that were found to be the highest during the “before” traffic condition were actually the most significantly affected by the installation of the temporary speed humps. Both the northbound average and 85th-percentile vehicle speeds were reduced by nearly 10 mph. It is very likely that this reduction was also achieved in part due to the other traffic calming installations and diversion of the northbound drivers around the triangular island at the State Park Road intersection. Southbound travel speeds were found to be only slightly higher than during the “before” traffic condition. It should be noted that it is very common for vehicles to speed up after they have been otherwise impeded by a traffic calming device in the roadway, but this observed increase is not too concerning.



- Norwood Road: The traffic volumes along Norwood Road do seem to have increased slightly following the installation of the temporary speed humps on Belinder Avenue. Due to a residential estate sale held during the data collection period (i.e., November 17th – 18th), there was a larger traffic volume increase during the weekend days, especially in the southbound travel direction, than there was for the average weekday. While vehicle speeds for the southbound direction are generally the same, there was an observed increase in travel speeds of 2- to 6-mph for the northbound direction. It is likely that both the slightly increased traffic volumes and travel speeds can be attributed to at least some drivers that previously traveled along Belinder Avenue now diverting instead to Norwood Road.

Summary / Conclusions: Based upon the traffic volume and travel speed data collected during both the “before” and “after” traffic conditions and our completed comparative evaluations, we would offer the following items for further consideration by the City:

- Neosho Lane: With the significant reduction in vehicle travel speeds achieved with the temporary installation, a permanent speed hump, if desired, should be installed in the same location as the temporary speed hump.
- Belinder Avenue: With negligible impacts on vehicle travel speeds along this corridor, a decision will still need to be made regarding permanent installation of the speed humps. If desired, the permanent installation locations should remain the same as the temporary locations. The most positive reductions in vehicle travel speeds were achieved at the southern end of the study corridor and were most likely attributable to the recent State Park Road island traffic calming reconfiguration. We would recommend that this island be reconfigured permanently to maintain this positive change. Also, a traffic volume displacement of 400 vpd away from the Belinder Avenue corridor has occurred while the temporary speed humps were installed. This traffic displacement needs to be considered as part of the City’s traffic calming decision-making process moving forward.

We appreciate the opportunity to continue being of service to you and the City on this very important neighborhood traffic calming project. If you should have any questions regarding these evaluations and/or need additional information, please feel free to contact me.

cc: AJA, BAB, file

Table 1
Traffic Calming "Before" and "After" Comparisons (Fairway, KS)

	"BEFORE" Traffic Conditions			"AFTER" Traffic Conditions		
<u>Belinder Avenue (North)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>
Average Weekday Volume	890	720	1,610	745	440	1,185
Average Weekend Volume	475	380	855	440	305	745
85th Percentile Speed	33 MPH	32 MPH		32 MPH	37 MPH	
Average Speed	29 MPH	27 MPH		27 MPH	30 MPH	
Percent > 25 MPH	80%	69%		65%	83%	
<u>Belinder Avenue (Middle)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>
Average Weekday Volume	885	700	1,585	775	390	1,165
Average Weekend Volume	450	350	800	430	340	770
85th Percentile Speed	32 MPH	34 MPH		32 MPH	35 MPH	
Average Speed	27 MPH	29 MPH		27 MPH	28 MPH	
Percent > 25 MPH	73%	78%		69%	67%	
<u>Belinder Avenue (South)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>
Average Weekday Volume	870	660	1,530	765	405	1,170
Average Weekend Volume	435	330	765	410	315	725
85th Percentile Speed	43 MPH	29 MPH		33 MPH	31 MPH	
Average Speed	36 MPH	26 MPH		27 MPH	27 MPH	
Percent > 25 MPH	94%	62%		70%	64%	
<u>Norwood Road</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>
Average Weekday Volume	160	225	385	185	260	445
Average Weekend Volume	110	150	260	150	280	430
85th Percentile Speed	28 MPH	28 MPH		34 MPH	29 MPH	
Average Speed	22 MPH	23 MPH		24 MPH	23 MPH	
Percent > 25 MPH	35%	38%		44%	39%	
<u>Neosho Lane</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>
Average Weekday Volume	270	215	485	305	305	610
Average Weekend Volume	215	115	330	235	220	455
85th Percentile Speed	34 MPH	35 MPH		26 MPH	26 MPH	
Average Speed	27 MPH	28 MPH		21 MPH	22 MPH	
Percent > 20 MPH	87%	84%		54%	64%	
<u>Mohawk Street</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>
Average Weekday Volume	210	135	345	240	225	465
Average Weekend Volume	110	125	235	--	--	--
85th Percentile Speed	29 MPH	34 MPH		29 MPH	37 MPH	
Average Speed	23 MPH	26 MPH		21 MPH	28 MPH	
Percent > 25 MPH	39%	64%		27%	62%	
<u>Pawnee Lane</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>	<u>Northbound (vpd)</u>	<u>Southbound (vpd)</u>	<u>2-Way Total (vpd)</u>
Average Weekday Volume	120	115	235	125	130	255
Average Weekend Volume	95	105	200	90	135	225
85th Percentile Speed	33 MPH	27 MPH		30 MPH	30 MPH	
Average Speed	26 MPH	21 MPH		24 MPH	24 MPH	
Percent > 25 MPH	56%	24%		43%	41%	