

# Appendix B8

Kennedy Boulevard Road Diet Investigation

Four options were considered to improve the intersection of Brodhead Road and Mill Street/ Kennedy Boulevard; these options are listed below. Attachments include Option 2 – 4 concept drawings.

- Option 1 – No-Build
- Option 2 – Short-Term Lane Restriping
- Option 3 – Road Diet and Multimodal Improvements
- Option 4 – Additional Lanes

Option 1, the no-build alternative, does not make any improvements to the current intersection geometry, and LOS degrades from base year conditions. Pedestrian accommodations are still limited, and eastbound/westbound split phasing remains in effect.

Option 2, the short-term restriping alternative, uses the existing footprint of the intersection to reduce the westbound through traffic to one lane, thereby accommodating a new left turn lane in both the eastbound and westbound directions. This results in the removal of the eastbound/westbound split phasing, and can accommodate additional pedestrian/sidewalk connections in all four quadrants of the intersection. Operations improve to overall LOS D or better in both peak hours.

Option 3, the road diet and multimodal improvements alternative, takes a small amount of right-of-way (ROW) to accommodate bike lanes, retains the single westbound through lane from Option 2, while also restricting eastbound traffic to one through lane. A northbound right turn lane is added, as well as a new pocket lane for the westbound right turns. The pedestrian accommodations from Option 2 remain, and operations improve to overall LOS C in both peak hours.

Option 4 requires additional ROW to add right and left turn lanes to all approaches; two through lanes in the eastbound and westbound directions are retained. The pedestrian accommodations from the previous options are retained, however bike lanes would require even more ROW. Operations improve again to overall LOS C or better in both peak hours.

To complete the preliminary road diet analysis for Option 3, PTV's VISTRO software (Version 2021, Service Pack 2) was utilized. The study intersections of Brodhead Road at Mill Street/Kennedy Boulevard were updated to reflect 2045 future year volumes, truck percentages, and peak hour factors. Mill Street and Kennedy Boulevard were both reduced to one arriving and departing through lane. To the east the intersection of Kennedy Boulevard at Grand Avenue/Sheffield Road, through traffic volumes on Kennedy Boulevard were increased to match the demand of the main Brodhead Road study intersection. The side street volumes, main street turning volumes, peak hour factors, and truck percentages were imported into VISTRO from the 2012 SINC-UP (Cycle 1 WO # 4) Synchro analysis. Kennedy Boulevard at Grand Avenue/Sheffield Road operates with an overall LOS D or better, and volume-to-capacity (v/c) ratio less than 1.00, despite the laneage reductions.

According to the PennDOT 2020 Beaver County Traffic Volumes Map, the Annual Average Daily Traffic (AADT) for Mill Street is approximately 14,000 vehicles per day (vpd), and Kennedy Boulevard is 10,000 vpd. According to the Federal Highway Administration (FHWA), roadways with an ADT of 20,000 vpd or less may be good candidates for a road diet and should be evaluated for feasibility<sup>1</sup>. FHWA also states there is probable feasibility at or below 750 vehicles per hour per direction (vphpd) during the peak hour. The highest peak hour approach volume in the 2045 design year occurs at the Brodhead Road at Mill Street/Kennedy Boulevard intersection, with 890 vphpd on the eastbound Mill Street approach; however, 530 of those vehicles make a channelized right turn onto southbound Brodhead Road, and are not impacted by the signalized intersection, nor the single through lane. The highest peak hour volume for

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<sup>1</sup> [https://safety.fhwa.dot.gov/road\\_diets/guidance/info\\_guide/ch3.cfm](https://safety.fhwa.dot.gov/road_diets/guidance/info_guide/ch3.cfm)

Kennedy Boulevard affected by the one single lane approach is 475 vphpd, which is less than the FHWA guideline amount of 750 vphpd.

Out of the 20 crashes recorded at the Brodhead Road at Mill Street/Kennedy Boulevard intersection, 12 were angle crashes and 4 were rear-end. Each of these crashes could be improved by adding a dedicated left turn lane instead of the existing shared left-through lanes.

Road diets are a useful way to reduce speeds, increase accessibility by including bike and pedestrian facilities, while still managing to fit the intersection within the existing footprint.

Results of the comparison of options are shown in [Exhibit 1](#) below.

*Exhibit 1: Comparison of Options*

Option #	Description	LOS (AM / PM)									
		Overall	NB	SB	EB	WB	Overall	NB	SB	EB	WB
1	No-Build	E	F	D	D	D	F	F	F	D	D
2	Short - Term	C	B	B	C	C	D	D	D	D	D
3	Road Diet	C	B	B	C	C	C	C	D	C	D
4	Add Lanes	B	B	B	C	C	C	C	C	C	C