

## MEMORANDUM

April 15, 2024

To: Middletown Town Council

From: Lucy Gibson, Principal Engineer

Project: East Main Road Traffic Analysis of Road Diet

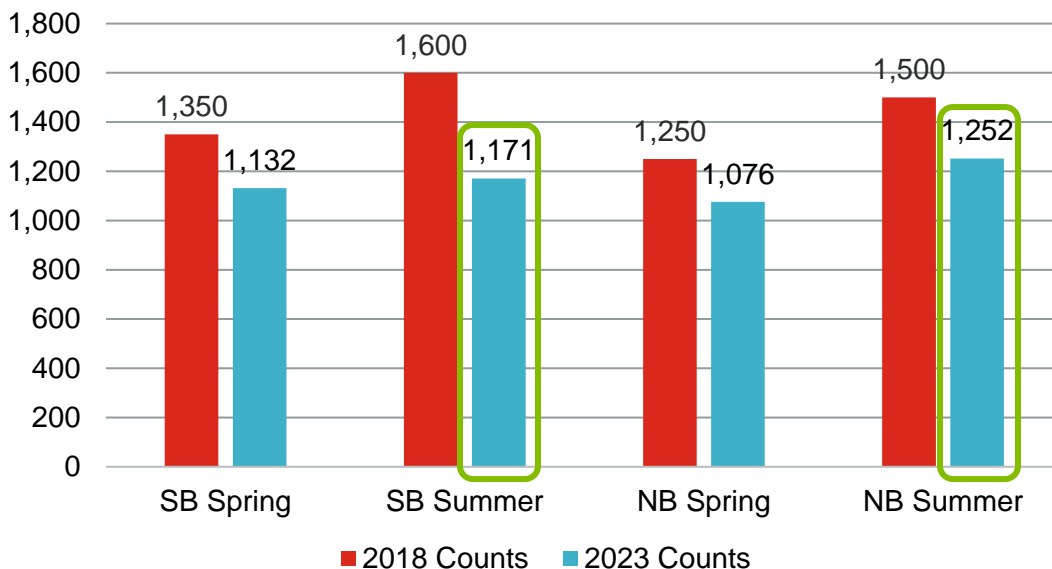
### Re: Updated Peak Hour Traffic Analysis for the East Main Road Diet

The following summarizes our review and analysis of the East Main Road Diet, in consultation with the Rhode Island Department of Transportation (RIDOT).

#### *RIDOT Peak Hour Traffic Analysis and Toole Update*

- RIDOT, VHB and Toole met to discuss traffic data and models used to evaluate East Main Road for its eligibility for a road diet, and confirmed that there has been a significant decline in peak hour traffic in the past 5 years.
  - RIDOT originally evaluated the road diet under Spring and Summer peak hour traffic conditions using counts from 2018 (aka Old Model).
  - New (2023) counts from RIDOT confirm that volumes are significantly lower than in 2018. The new data has now been used to update the simulation models.
  - Southbound (SB) traffic peaks in the morning peak hour; Northbound (NB) traffic peaks in the afternoon peak hour.

Traffic Volumes in 2018 (Old Model) v. 2023 New (Model)

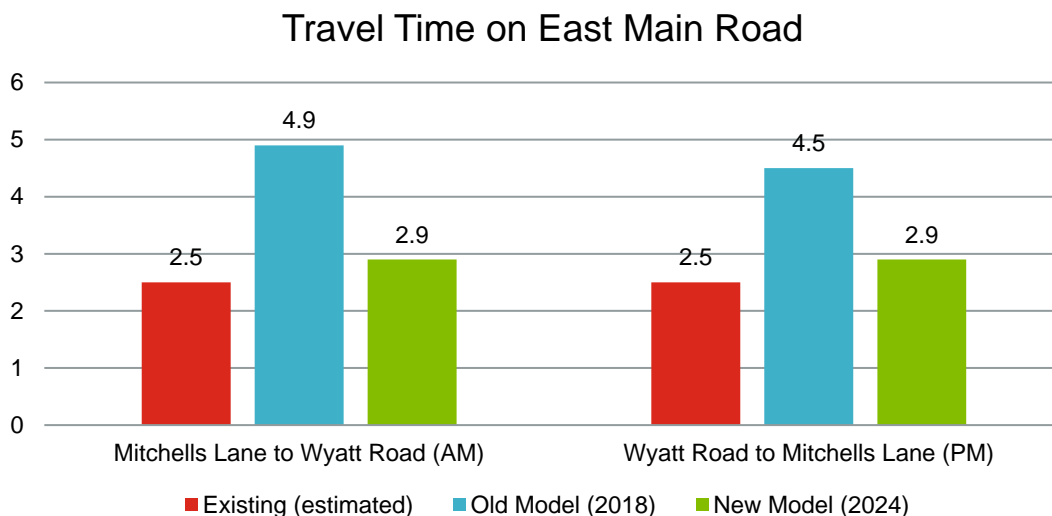


*Findings related to updated traffic counts*

- Daily traffic in the summer is 24% higher than in spring, but peak hour traffic is 16% higher in the summer than in the spring.
- Summer traffic is spread throughout the day rather than concentrated during commuting hours.
- All parties agreed that modeling should be updated to reflect current traffic conditions, based on counts conducted by RIDOT.

*Updated traffic analysis*

- VISSIM traffic simulation was run for the summer peak traffic hours, during the AM and PM peak hours.
- The 2023 traffic counts were increased by 8% to be projected to 2024 volumes, based on counts conducted by RIDOT through March 2024.
- VISSIM model developed by RIDOT was used. No other changes to model were made.
- Findings compared in following chart. Old Model uses 2018 volumes. New model is updated with projected 2024 volumes.



- The existing travel times are estimated based on the distance and posted speed limit. However, this analysis does not take into account the delays currently experienced due to lane blockages from people making left turns, so actual existing travel times could be longer. It also does not reflect the potential for slower travel times resulting from the 8% growth in volumes that has been assumed in this model.
- The new model shows an increase from estimated existing travel times of about 25 seconds for people driving from Mitchells Lane to Wyatt Road during the morning peak hour, including the merge areas.
- The new model shows an increase from estimated existing travel time of about 26 seconds during the afternoon peak hour.
- The merge areas function well and do not form queues.
- Turner Road may see moderately increased queues and delays, but we lack data on existing conditions, so cannot compare before and after.

### The Decision

| Delays   | Safety  |
|--|---|
| 30 seconds: <b>Average</b> increase for people in cars during peak travel time | <b>47% Reduction</b> in crashes and injuries of all types                         |
| 3.5 minutes: <b>Maximum</b> increase for people in cars during peak travel     | <b>Dramatically improved safety</b> for people walking, biking and taking the bus |
| <b>Most of the time will not have additional delay</b>                         | <b>Reductions in aggressive driving and speeding</b>                              |