

## TECHNICAL MEMORANDUM

**TO:** Mr. Robert Desmarais, Director  
City of Amesbury  
Department of Public Works  
39 South Hunt Road  
Amesbury, Massachusetts 01913

**DATE:** September 14, 2022

**FROM:** Samuel W. Gregorio, PE, PTOE, RSP<sub>1</sub>  
Project Manager / Senior Design Engineer

**PROJECT NO.:** T1258

**RE:** Merrimack River District – Amesbury, Massachusetts  
August 2022 Base Line Traffic Volumes

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TEC, Inc (TEC), on behalf of the City of Amesbury, has coordinated and completed traffic volumes counts at various locations within the City's Merrimack River District. The traffic volumes represent a base line condition of summer 2022. The new traffic counts will supplement traffic counts collected in the district from 2018 to 2021 by both the City and MassDOT. The following is a summary of the traffic volumes at each location.

Automatic Traffic Recorder (ATR) counts were conducted at various locations within the Merrimack River District from Thursday, August 11, 2022 through Saturday, August 13, 2022 to gather daily traffic volume data, vehicle speeds, and vehicle classifications during a continuous 72-hour time period. The following locations were evaluated:

1. Evan's Place, west of Point Shore Drive
2. Main Street, between Rocky Hill Road and Clark's Road
3. Main Street, west of Laurel Place
4. Main Street, between Bartlett Place and Cleveland Street
5. Merrimac Street, east of Swetts Hill
6. Rocky Hill Road, halfway between Main Street and Route 110
7. Clark's Road, near Birchwood Pointe
8. Elm Street, south of Stop & Shop Driveway
9. South Hunt Road, east of South Martin Road
10. Pond View Avenue (Route 150), south of Summit Avenue
11. Hillside Avenue (Route 150), north of I-495
12. Macy Street (Route 110), east of Macy Terrace
13. Macy Street (Route 110), west of Rocky Hill Road
14. Macy Street (Route 110), east of Stop & Shop Driveway

A detailed summary of the ATR data, partitioned into one-hour intervals, is provided within Attachment A.

**Location 1: Evan's Place, west of Point Shore Drive**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed EB: **33.8 mph**      85<sup>th</sup> Percentile Speed EB: **38.0 mph**  
 Average Speed WB: **33.8 mph**      85<sup>th</sup> Percentile Speed WB: **38.0 mph**

Heavy Vehicle % (Daily): **7.1% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **9.0% from 8a-9a [Class 4 or larger]**

**Table 1A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	10,953	790	7.2	62.0% EB	1,062	9.7	53.2% WB
Friday	11,029	667	6.0	67.4% EB	970	8.8	59.3% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 1B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
9,110	800	8.8	61.5% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 2: Main Street, between Rocky Hill Road and Clark's Road**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed EB: **26.3 mph**      85<sup>th</sup> Percentile Speed EB: **30.0 mph**  
 Average Speed WB: **29.2 mph**      85<sup>th</sup> Percentile Speed WB: **33.0 mph**

Heavy Vehicle % (Daily): **7.1% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **10.5 from 4p-5p [Class 4 or larger]**

**Table 2A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	10,485	768	7.3	63.2% EB	998	9.5	52.8% WB
Friday	10,760	670	6.2	66.7% EB	945	8.8	58.0% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 2B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
8,932	802	9.0	60.8% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 3: Main Street, west of Laurel Place**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed EB: **31.9 mph**      85<sup>th</sup> Percentile Speed WB: **36.0 mph**  
 Average Speed WB: **30.3 mph**      85<sup>th</sup> Percentile Speed EB: **34.0 mph**

Heavy Vehicle % (Daily): **3.3% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **4.3% from 4p-5p [Class 4 or larger]**

**Table 3A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	8,746	628	7.2	53.3% EB	845	9.7	60.7% WB
Friday	8,992	501	5.6	55.9% EB	833	9.3	65.2% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 3B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
7,269	633	8.7	51.7% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 4: Main Street, between Bartlett Place and Cleveland Street**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed NB: **31.6 mph**    85<sup>th</sup> Percentile Speed NB: **35.0 mph**  
 Average Speed SB: **34.0 mph**    85<sup>th</sup> Percentile Speed SB: **38.0 mph**

Heavy Vehicle % (Daily): **10.6% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **18.5% from 7a-8a [Class 4 or larger]**

**Table 4A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	6,511	475	7.3	55.2% SB	588	9.0	57.8% NB
Friday	6,583	362	5.5	55.8% SB	589	8.9	65.2% NB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 4B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
5,302	479	9.0	51.1% SB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 5: Merrimac Street, east of Swetts Hill**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed EB: **31.3 mph**      85<sup>th</sup> Percentile Speed EB: **36.0 mph**  
 Average Speed WB: **26.2 mph**      85<sup>th</sup> Percentile Speed WB: **30.0 mph**

Heavy Vehicle % (Daily): **6.9% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **13.0% from 7a-8a [Class 4 or larger]**

**Table 5A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	3,919	247	6.3	56.3% WB	401	10.2	63.3% WB
Friday	4,038	191	4.7	50.8% WB	383	9.5	68.7% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 5B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
3,516	333	9.5	54.7% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 6: Rocky Hill Road, halfway between Main Street and Route 110**

Roadway Classification: **Local Road**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed NB: **18.0 mph**    85<sup>th</sup> Percentile Speed NB: **21.0 mph**  
 Average Speed SB: **20.4 mph**    85<sup>th</sup> Percentile Speed SB: **24.0 mph**

Heavy Vehicle % (Daily): **9.2% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **14.2% from 8a-9a [Class 4 or larger]**

**Table 6A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	2,661	220	8.3	81.8% SB	229	8.6	78.2% SB
Friday	2,847	209	7.3	89.5% SB	207	7.3	72.9% SB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 6B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
2,362	263	11.1	83.7% SB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 7: Clark's Road, near Birchwood Pointe**

Roadway Classification: **Urban Collector**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed NB: **30.5 mph**    85<sup>th</sup> Percentile Speed NB: **34.0 mph**  
 Average Speed SB: **30.4 mph**    85<sup>th</sup> Percentile Speed SB: **34.0 mph**

Heavy Vehicle % (Daily): **6.4% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **13.6% from 9a-10a [Class 4 or larger]**

**Table 7A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	1,937	130	6.7	52.3% SB	180	9.3	50.6% SB
Friday	2,111	114	5.4	53.5% SB	195	9.2	50.3% SB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 7B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
1,675	144	8.6	51.4% SB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour



**Location 8: Elm Street, south of Stop & Shop Driveway**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **Massachusetts Department of Transportation**

Average Speed NB: **36.0 mph**    85<sup>th</sup> Percentile Speed NB: **41.0 mph**  
 Average Speed SB: **35.8 mph**    85<sup>th</sup> Percentile Speed SB: **40.0 mph**

Heavy Vehicle % (Daily): **12.8% [Class 4 or larger]**  
 Heavy Vehicle % (Peak): **17.4% from 11a-12p [Class 4 or larger]**

**Table 8A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	10,115	679	6.7	56.1% SB	855	8.5	58.8% NB
Friday	10,139	628	6.2	58.9% SB	806	7.9	54.2% NB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 8B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
8,180	738	9.0	53.0% NB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 9: South Hunt Road, east of South Martin Road**

Count Dates Thursday, August 18, 2022 through Saturday August 20, 2022

Roadway Classification: **Urban Collector**  
 Roadway Jurisdiction: **City of Amesbury**

Average Speed EB: **42.8 mph**      85<sup>th</sup> Percentile Speed EB: **51.0 mph**  
 Average Speed WB: **31.5 mph**      85<sup>th</sup> Percentile Speed WB: **39.0 mph**

Heavy Vehicle % (Daily): **22.6% [240in or longer]**  
 Heavy Vehicle % (Peak): **29.5% from 11a-12p [240in or longer]**

**Table 9A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	3,185	250	7.8	71.2% EB	258	8.1	72.1% EB
Friday	3,288	231	7.0	73.2% EB	174	5.3	85.6% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 9B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
1,505	124	8.2	83.9% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 10: Pond View Avenue (Route 150), south of Summit Avenue**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **Massachusetts Department of Transportation**

Average Speed NB: **35.8 mph**    85<sup>th</sup> Percentile Speed NB: **41.0 mph**  
 Average Speed SB: **34.7 mph**    85<sup>th</sup> Percentile Speed SB: **40.0 mph**

Heavy Vehicle % (Daily): **12.7% [240in or longer]**  
 Heavy Vehicle % (Peak): **20.0% from 7a-8a [240in or longer]**

**Table 10A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	2,719	181	6.7	65.2% NB	264	9.7	60.2% NB
Friday	2,674	152	5.7	63.8% NB	255	9.5	61.1% NB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 10B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
2,213	214	9.7	50.0% Split

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 11: Hillside Avenue (Route 150), north of I-495**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **Massachusetts Department of Transportation**

Average Speed NB: **38.6 mph**    85<sup>th</sup> Percentile Speed NB: **43.0 mph**  
 Average Speed SB: **39.0 mph**    85<sup>th</sup> Percentile Speed SB: **43.0 mph**

Heavy Vehicle % (Daily): **6.0% [240in or longer]**  
 Heavy Vehicle % (Peak): **10.0% from 12p-1p [240in or longer]**

**Table 11A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	11,231	804	7.2	55.2% SB	914	8.1	55.3% NB
Friday	11,398	755	6.6	54.0% SB	942	8.3	54.9% NB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 11B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
9,229	825	8.9	55.9% NB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 12: Macy Street (Route 110), east of Macy Terrace**

Roadway Classification: **Urban Minor Arterial**  
 Roadway Jurisdiction: **Massachusetts Department of Transportation**

Average Speed EB: **32.4 mph**    85<sup>th</sup> Percentile Speed EB: **36.0 mph**  
 Average Speed WB: **34.7 mph**    85<sup>th</sup> Percentile Speed WB: **39.0 mph**

Heavy Vehicle % (Daily): **2.9% [240in or longer]**  
 Heavy Vehicle % (Peak): **4.8% from 8a-9a [240in or longer]**

**Table 12A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	14,034	982	7.0	51.5% EB	1,133	8.1	55.4% WB
Friday	14,249	873	6.1	60.6% EB	1,130	7.9	53.5% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 12B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
11,911	1,021	8.6	53.2% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 13: Macy Street (Route 110), west of Rocky Hill Road**

Roadway Classification: **Urban Principal Arterial**  
 Roadway Jurisdiction: **Massachusetts Department of Transportation**

Average Speed EB: **39.4 mph**    85<sup>th</sup> Percentile Speed EB: **45.0 mph**  
 Average Speed WB: **39.2 mph**    85<sup>th</sup> Percentile Speed WB: **45.0 mph**

Heavy Vehicle % (Daily): **18.1% [240in or longer]**  
 Heavy Vehicle % (Peak): **23.8% from 9a-10a [240in or longer]**

**Table 13A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	29,067	2,034	7.0	55.0% EB	2,167	7.5	63.6% WB
Friday	30,678	1,972	6.4	62.5% EB	2,148	7.0	64.5% WB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 13B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
26,460	2,035	7.7	52.5% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Location 14: Macy Street (Route 110), east of Stop & Shop Driveway**

Roadway Classification: **Urban Principal Arterial**  
 Roadway Jurisdiction: **Massachusetts Department of Transportation**

Average Speed EB: **34.4 mph**    85<sup>th</sup> Percentile Speed EB: **42.0 mph**  
 Average Speed WB: **30.7 mph**    85<sup>th</sup> Percentile Speed WB: **40.0 mph**

Heavy Vehicle % (Daily): **24.4% [240in or longer]**  
 Heavy Vehicle % (Peak): **29.4% from 9p-10p [240in or longer]**

**Table 14A – Summer Weekday Traffic Volume Summary**

Day of Week	Daily Traffic Volume	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume	K Factor	Directional Distribution	Traffic Volume	K Factor	Directional Distribution
Thursday	26,389	1,718	6.5	62.7% EB	1,892	7.2	54.8% EB
Friday	26,999	1,527	5.7	65.2% EB	1,890	7.0	53.1% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour

**Table 14B – Summer Saturday Traffic Volume Summary**

Daily Traffic Volume	Saturday Midday Peak Hour		
	Traffic Volume	K Factor	Directional Distribution
23,175	1,789	7.7	65.6% EB

Note: K Factor is the percent of daily traffic volumes which occurs during the peak hour