Appleton Street Traffic Concerns Community Meeting

May 23, 2024 | 6:00 pm

Our Team

Staff from the Cambridge Traffic, Parking, + Transportation Department:

Presenting tonight:

Brooke McKenna
Commissioner

Stephen Meuse, PE
Supervising Engineer

Here to listen:

Andreas Wolfe, AICP
Street Design Project Manager

Chaimaa Medhat
Project Administrator

Questions or additional feedback?

trafficengineering@cambridgema.gov

Meeting Purpose, Outcome, + Process

Purpose

- Community members have indicated concerns with vehicular volumes and speeds on some streets in the West Cambridge neighborhood.
- The Traffic, Parking, + Transportation Department has performed vehicle counts using automated traffic recorder devices and has data to share.

Outcome

- You'll see how volumes, speeds, vehicle classifications, and crashes vary from street to street.
- City staff will record feedback regarding community experiences and potential solutions.

Process

- City staff will present slides to summarize the background and data that has been collected. There will then be an opportunity for the community to provide comment.

Agenda

- What We've Heard So Far
- Data Collection
  - Traffic Counts
  - Crashes
- Approach to Traffic Complaints
- Possible Short-Term Solutions
- Discussion + Feedback
- Outreach + Next Steps
  - Sign up for our email list
  - We plan to respond to the community in about a month

What We've Heard So Far

Beginning in Summer 2023, several community members reached out to the Traffic, Parking, + Transportation Department to report a noticeable increase in northbound vehicle volumes on Appleton Street, specifically between Brattle Street and Huron Avenue.

Reported concerns:

- Difficult to access or leave driveways
- Hard to use Appleton Street to get to either Huron Avenue or Brattle Street by bicycle
- Honking/congestion at the Huron Avenue intersection
- Two-way traffic is difficult/can't pass opposing vehicles that are queued up
  - Sideswipes and mirror strikes
- Drivers going too fast

Images: Vehicular queues near Dunstable Road, emailed to City staff

Data Collection - Traffic Counts

Traffic count data presented tonight was collected over three days (72 hours) using on-roadway count tubes.

We collected from Tuesday, March 26 through Thursday, March 28, 2024. Count days were selected to avoid school vacation weeks.

Speeds

- North-South streets in this neighborhood are designated as “Safety Zones” with 20 MPH speed limits

Volumes

- Number of vehicles and peak times
- Directional distribution

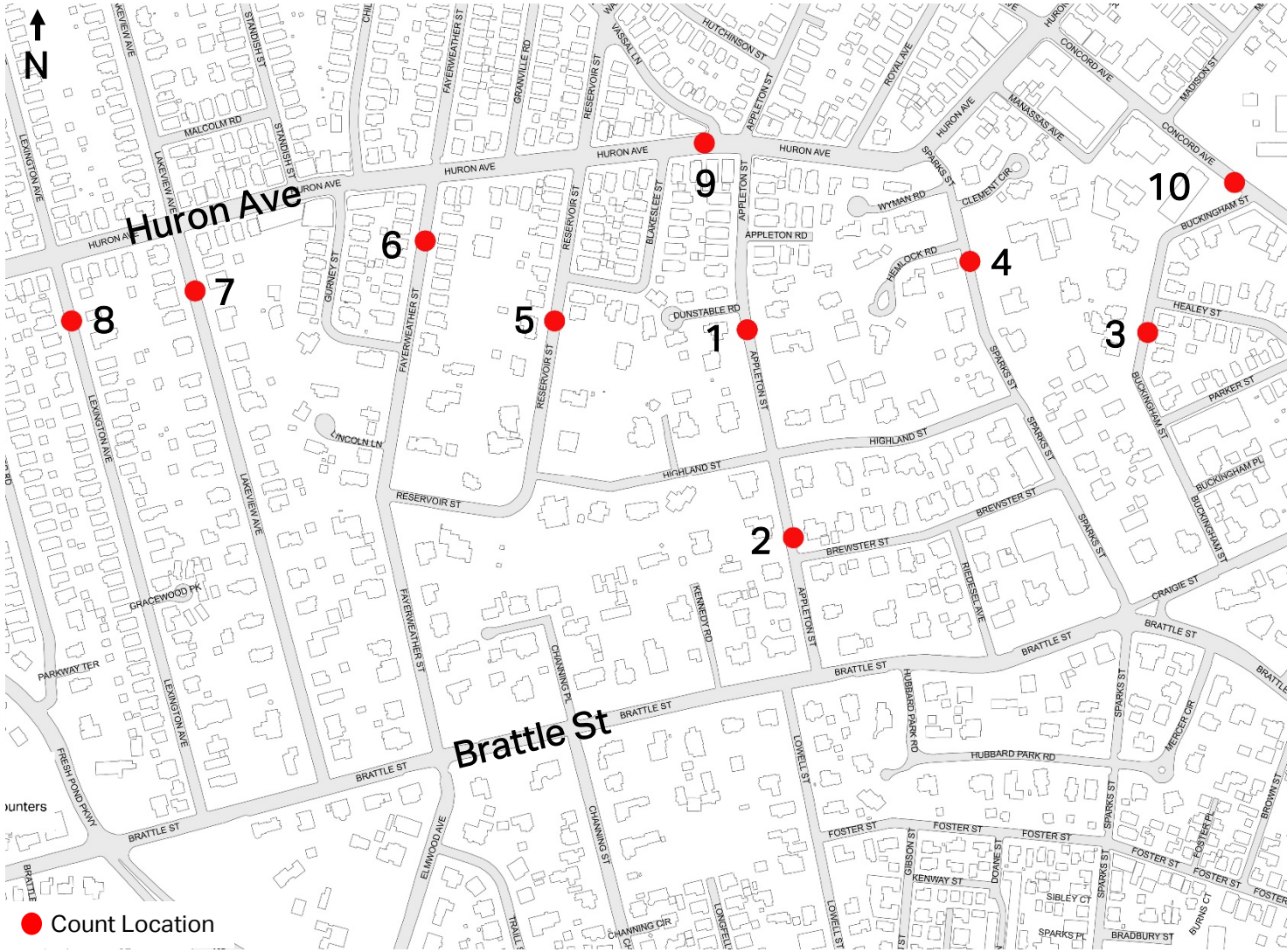
Vehicle Classifications

- Cars, trucks, etc.
- Bicycle counts not accurate due to type of count used

Images: Count tubes on neighborhood streets

Traffic Count Locations

1. Appleton Street, South of Dunstable Road
2. Appleton Street, North of Brewster Street
3. Buckingham Street, South of Healey Street
4. Sparks Street, South of Huron Avenue
5. Reservoir Street, South of Blakeslee Street
6. Fayerweather Street, South of Huron Avenue
7. Lakeview Avenue, South of Huron Avenue
8. Lexington Avenue, South of Huron Avenue
9. Huron Avenue, West of Appleton Street
10. Concord Avenue*, West of Buckingham Street



* Concord Avenue count from March 2023

Traffic Counts

Volumes

Location	NB / WB			SB / EB			Total Vol.	K factor (%)
	Dir. Total	AM peak	PM peak	Dir. Total	AM peak	PM peak		
Appleton St, S of Dunstable Rd	3,318	254	400	865	256	67	4,183	11.27
Appleton St, N of Brewster St	3,310	214	408	941	290	86	4,251	11.45
Buckingham St, S of Healey St	857	45	183	304	86	49	1,161	16.39
Sparks St, S of Huron Ave	-	-	-	4,379	554	307	4,379	12.48
Reservoir St, S of Blakeslee St	606	67	84	862	136	83	1,468	12.85
Fayerweather St, S of Huron Ave	724	61	87	1,395	237	121	2,119	12.68
Lakeview Ave, S of Huron Ave	838	56	191	548	139	55	1,386	13.37
Lexington Ave, S of Huron Ave	312	24	46	459	104	27	771	14.92
Huron Ave, W of Appleton St	2,626	454	194	2,814	318	265	5,440	13.77
Concord Ave, W of Buckingham St	6,655	418	639	6,218	647	449	12,873	8.38

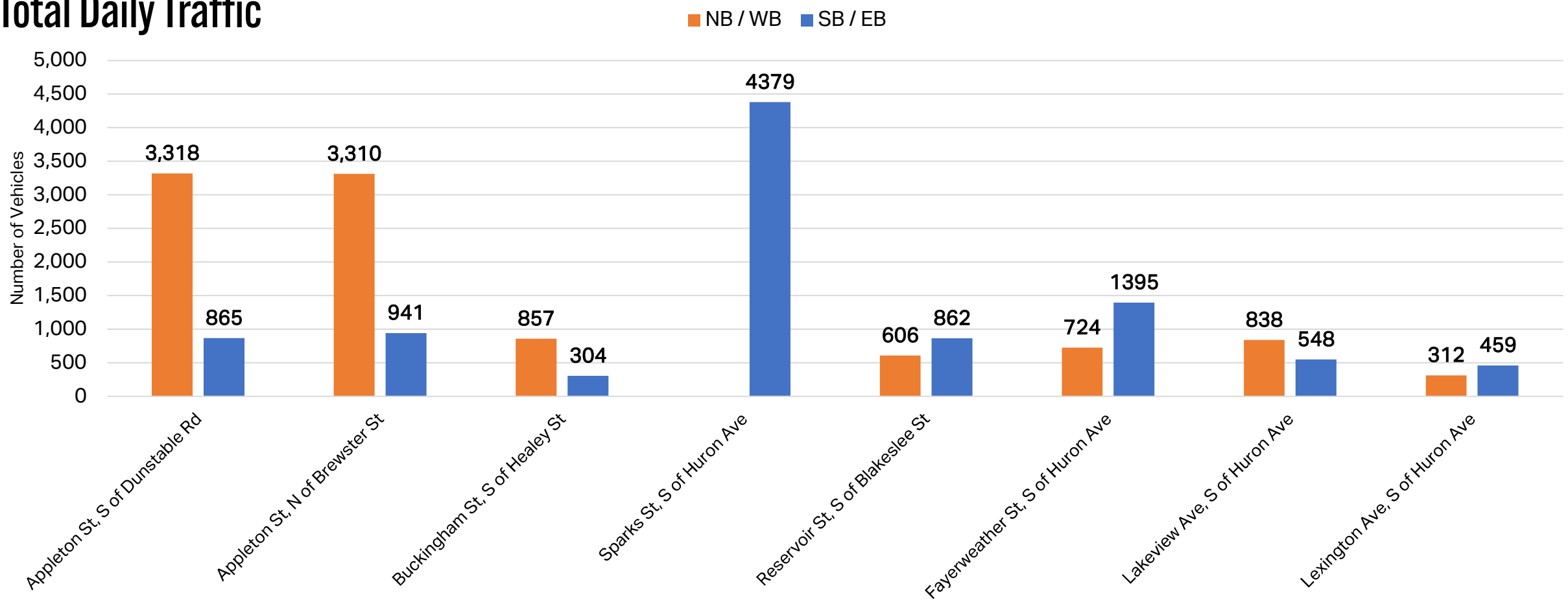
The “K factor” is the proportion of average daily traffic occurring during the busiest hour of the day.

- Typical values are 8 to 12% – Most streets in study area fall within this range.
- High K factors sometimes indicate a large share of commuters (“cut through”) vs local users (“neighbors”).
- Streets with nearby schools and recreational facilities typically have high K factors (i.e. Buckingham St).

Traffic Counts

Comparison to nearby “ladder streets”, which are viable alternatives to Appleton Street.

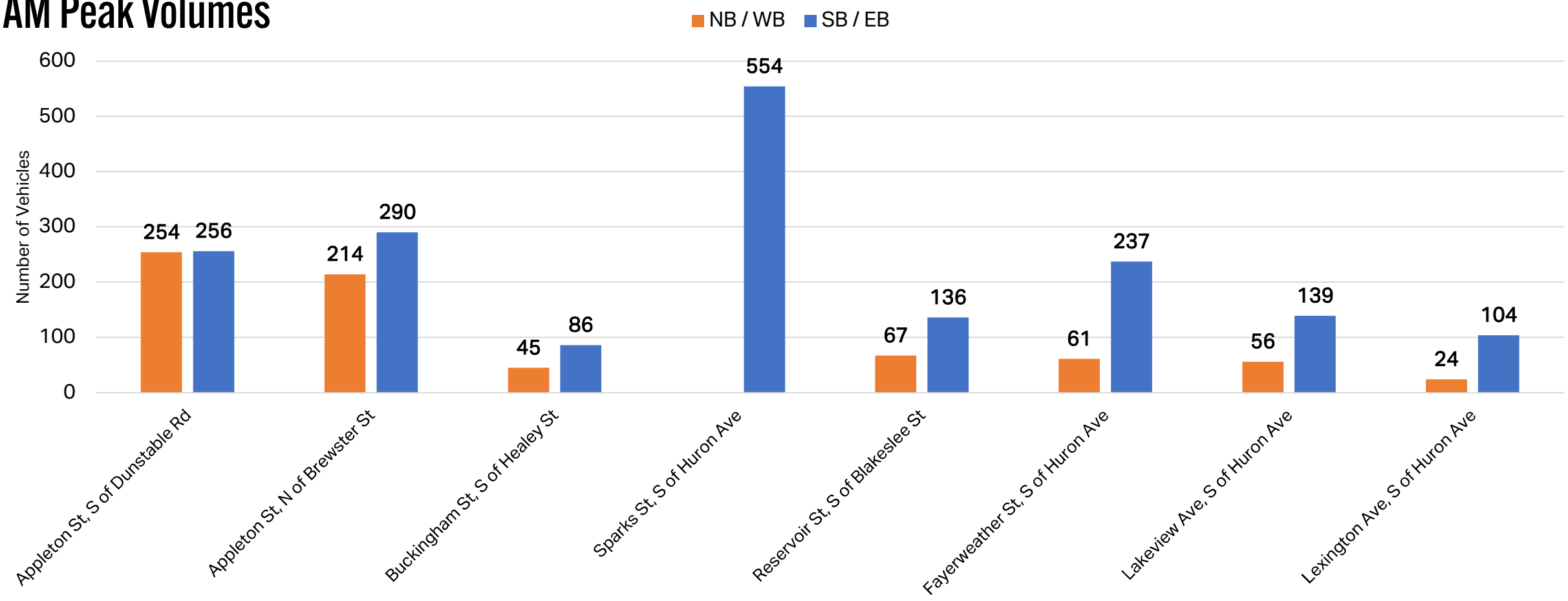
Total Daily Traffic



Traffic Counts

Comparison to nearby “ladder streets”, which are viable alternatives to Appleton Street.

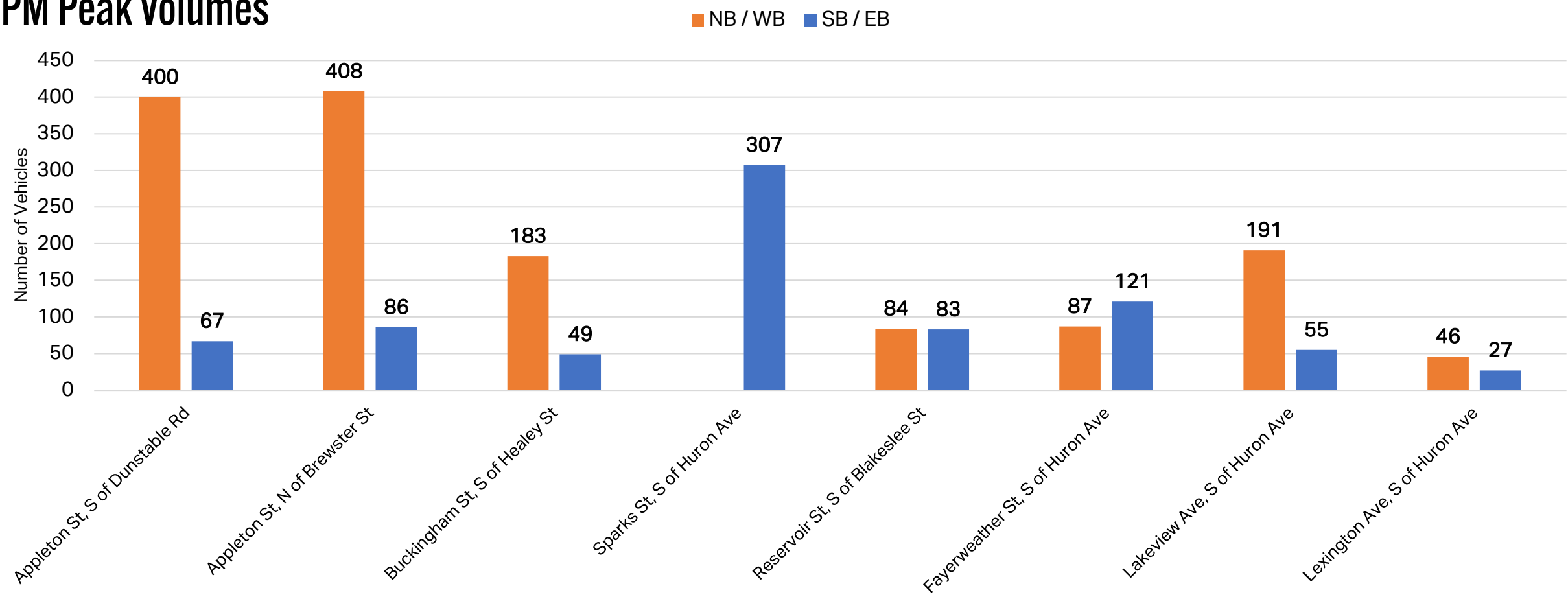
AM Peak Volumes



Traffic Counts

Comparison to nearby “ladder streets”, which are viable alternatives to Appleton Street.

PM Peak Volumes



Traffic Counts

Speeds

	Appleton St, S of Dunstable Rd	Appleton St, N of Brewster St	Buckingham St, S of Healey St	Sparks St, S of Huron Ave	Reservoir St, S of Blakeslee St	Fayerweather St, S of Huron Ave	Lakeview Ave, S of Huron Ave	Lexington Ave, S of Huron Ave	Huron Ave, W of Appleton St	Concord Ave, W of Buckingham St
Median Speed (mph)	22.3	21.5	20.1	21.8	22.8	21.3	25.2	20.6	22.8	26
85th Percentile Speed (mph)	27.2	25.5	23.7	26.7	27.9	26.6	29.8	24.2	27.8	25.6
Speed Limit	20	20	20	20	20	20	20	20	25	25

All streets within the study area had a “Safety Zone” speed limit of 20mph, except Concord Avenue and Huron Avenue which have the Citywide 25mph limit.

- Streets with congestion typically have lower speeds
- Speeds tend to be higher in areas where there is no parking/friction
- The best speed management interventions are “self-enforcing”; do not need a police presence to be effective (i.e. raised crossings, narrowed roadways, tighter turns, etc.)

Traffic Counts

Classification - Heavy Vehicles

	Appleton St, S of Dunstable Rd	Appleton St, N of Brewster St	Buckingham St, S of Healey St	Sparks St, S of Huron Ave	Reservoir St, S of Blakeslee St	Fayerweather St, S of Huron Ave	Lakeview Ave, S of Huron Ave	Lexington Ave, S of Huron Ave	Huron Ave, W of Appleton St	Concord Ave, W of Buckingham St
3-Axle & Larger	1.45%	1.35%	2.18%	1.20%	1.52%	1.73%	2.75%	0.79%	2.88%	0.14%
2-Axle (long)	1.39%	1.04%	1.26%	2.53%	1.18%	1.97%	1.73%	0.34%	1.69%	2.91%
Total trucks	2.84%	2.39%	3.44%	3.73%	2.70%	3.70%	4.48%	1.13%	4.58%	3.05%

Heavy vehicle percentages*:

- If less than 5%: likely local trips/destinations
- If greater than 8%: likely thee street is “the way” to go

- 2-Axle (long) includes school buses, delivery vehicles, etc.
- None of the percentages on any of the study area roadways were higher than expected.

* Thresholds based on MassDOT truck exclusion warrants

Data Collection - Crash History

We obtained crash data from the same streets we collected traffic counts.

- Used MassDOT IMPACT crash portal
- 5-year history
- Does not include intersections

We summarized:

- Number of reported crashes
- Severity of crashes
- Identified if vulnerable road users were involved

Street	From	To	Total Crashes	Serious Injury	Any Injury	Bike-related	Ped-related
Appleton St	Huron Ave	Brattle St	2				
Buckingham St	Craigie St	Concord Ave	2				
Sparks St	Huron Ave	Brattle St	4	1	3	1	
Reservoir St	Huron Ave	Fayerweather St	2				
Fayerweather St	Huron Ave	Brattle St	2		2		
Lakeview Ave	Huron Ave	Brattle St	4				
Lexington Ave	Huron Ave	Brattle St	2				
Huron Ave	Lexington Ave	Sparks St	21		5		2
Concord Ave	Huron Ave	Craigie St	17		5	1	3

Appleton Street Crashes

Specifically for Appleton Street, the Cambridge Police Department supplied crash data from January 2021 to present.

- Includes any crashes along Appleton Street and as well as any crashes at intersections at both ends.
- We only know about crashes that are reported. It is likely that there are additional crashes that may have been too minor for those involved to want to file a report.
- Unreported crashes generally do not involve injuries.

Six (6) reported crashes:

- 2021: 1 crash
  - Trash truck driver hit parked vehicle
- 2022: 1 crash
  - Single vehicle crash, driver lost control
- 2023: 4 crashes
  - Driver hit parked vehicle
  - Driver backed up into another vehicle after missing turn (at Huron Avenue)
  - Trash truck driver hit parked vehicle
  - Driver hit parked vehicle
- 2024 (~5 months): 0 crashes

Holistic Approach to Traffic Complaints

General

- Speed, “cut-through” traffic, and safety concerns affect all streets in some way
- Making changes on one street can have negative impacts on similar, parallel streets
- Assessing complaints on a neighborhood scale helps ensure all resident needs are addressed

West Cambridge neighborhood street layout

- Street pattern resembles a ladder
- Restricting access to one ladder street will probably divert trips to other ladder streets

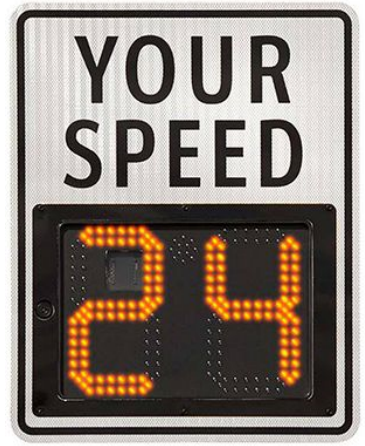
What is cut-through traffic?

- Difficult to define
  - Does not have an origin or destination on the specific street
  - Everyone uses streets they don’t live on; goal is to ensure this can happen safely
  - Drivers want to get to their destination as quickly as possible; navigation apps help find routes

Possible Short-Term Solutions - For Discussion

Access Restrictions

- Such as “One-way”, “Do Not Enter”, “No Right Turn” or “No Left Turn”
  - Can be restricted to specific time of day
    - Some wayfinding apps cannot incorporate this into their software, however
  - “Residents Only” cannot be used
  - Restrictions apply to everyone
  - Enforcement can be difficult



Speed Controls

- Standard metal signs
- Radar speed feedback signs

Other Options

- Yellow centerlines
- Parking restrictions

Discussion + Feedback

Tonight is the beginning of the discussion, not the end

- We do not plan to make any decisions tonight
- Over the coming weeks, we welcome your feedback and ideas

Tonight, we'd like to hear:

1. What are your observations regarding Appleton Street and the surrounding area?
2. What is working and what is not working?
3. What changes can we make to address your concerns?
4. What trade-offs are you willing to make to reduce vehicular volumes?
5. Did we miss anything?

Outreach + Next Steps

We acknowledge that the entire community isn't present tonight

- Please spread the word and talk to your neighbors
- We want to make sure that whatever we do has the support of the neighborhood
- We do not plan to make any decisions tonight
- Over the coming weeks, we welcome your feedback and ideas

Next Steps

- Sign up for our email list to stay involved (iPad or sign in sheet)
- These slides will be posted to the TP+T website
- We plan to respond to the community in about a month

Questions or additional feedback?

trafficengineering@cambridgema.gov

Appendix

Change over time (2017-2024*)

Location	2017							2024							2017-2024 Change (# of vehicles)						
	NB / WB			SB / EB			2-way Total	NB / WB			SB / EB			2-way Total	NB / WB			SB / EB			2-way Total
	Dir. Total	AM peak	PM peak	Dir. Total	AM peak	PM peak		Dir. Total	AM peak	PM peak	Dir. Total	AM peak	PM peak		Dir. Total	AM peak	PM peak	Dir. Total	AM peak	PM peak	
Appleton St, S of Dunstable Rd	2,381	115	315	1,101	234	65	3,482	3,318	254	400	865	256	67	4,183	937	139	85	-236	22	2	701
Appleton St, N of Brewster St	2,420	117	300	1,136	239	67	3,556	3,310	214	408	941	290	86	4,251	890	97	108	-195	51	19	695
Buckingham St, S of Healey St	1,028	49	216	337	58	37	1,365	857	45	183	304	86	49	1,161	-171	-4	-33	-33	28	12	-204
Sparks St, S of Huron Ave	-	-	-	4,148	497	277	4,148	-	-	-	4,379	554	307	4,379	-	-	-	231	57	30	231
Reservoir St, S of Blakeslee St	873	72	88	983	116	84	1,856	606	67	84	862	136	83	1,468	-267	-5	-4	-121	20	-1	-388
Fayerweather St, S of Huron Ave	775	53	72	1,468	185	113	2,243	724	61	87	1,395	237	121	2,119	-51	8	15	-73	52	8	-124
Lakeview Ave, S of Huron Ave	1,117	67	164	577	108	44	1,694	838	56	191	548	139	55	1,386	-279	-11	27	-29	31	11	-308
Lexington Ave, S of Huron Ave	508	27	82	577	121	39	1,085	312	24	46	459	104	27	771	-196	-3	-36	-118	-17	-12	-314
Huron Ave, W of Appleton St	2,785	238	251	3,211	297	356	5,996	2,626	454	194	2,814	318	265	5,440	-159	216	-57	-397	21	-91	-556
Concord Ave*, W of Buckingham St	4,515	253	387	5,764	507	414	10,279	6,655	418	639	6,218	647	449	12,873	2,140	165	252	454	140	35	2,594

* Concord Ave data from Oct 2022 and Mar 2023