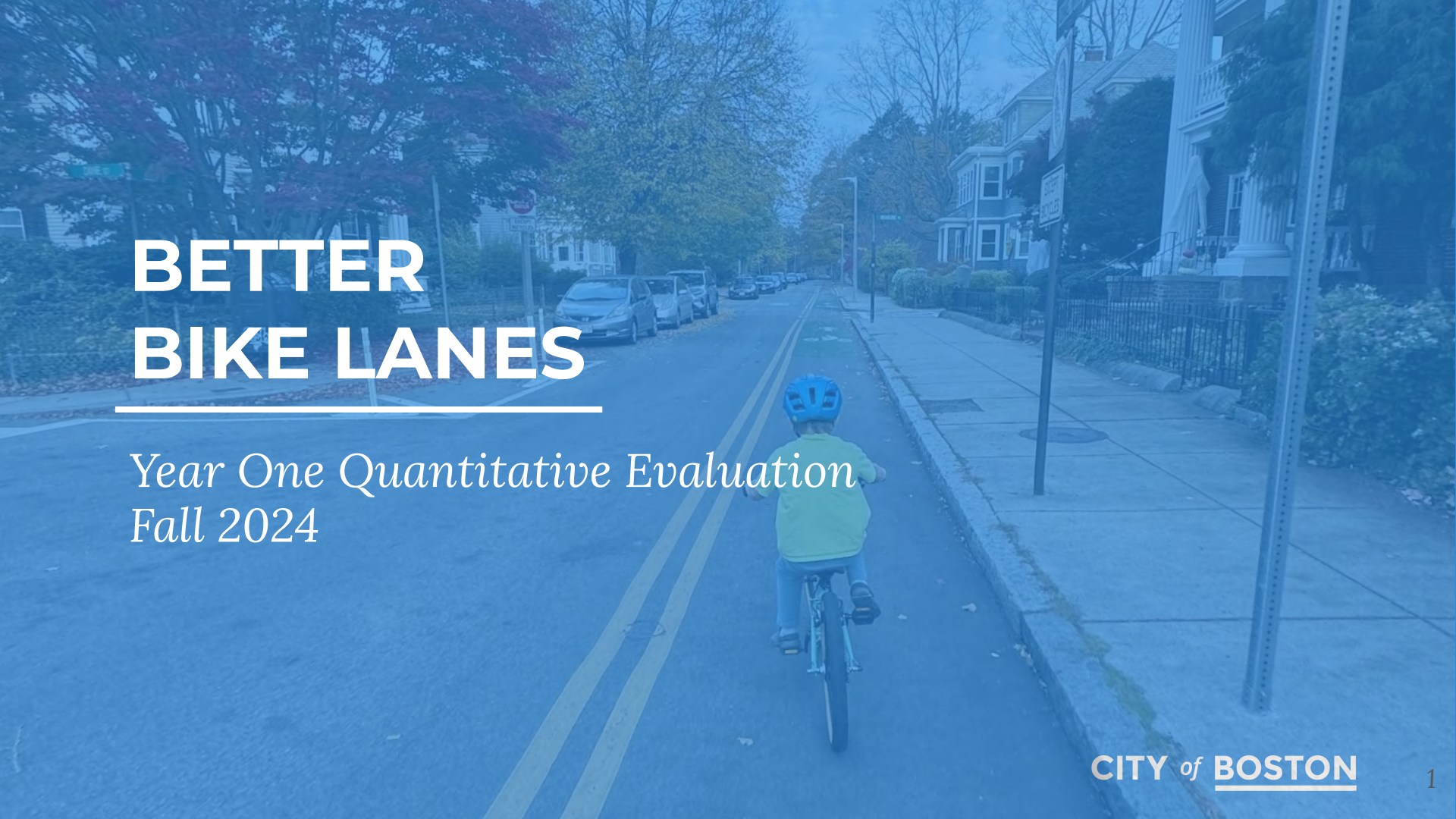


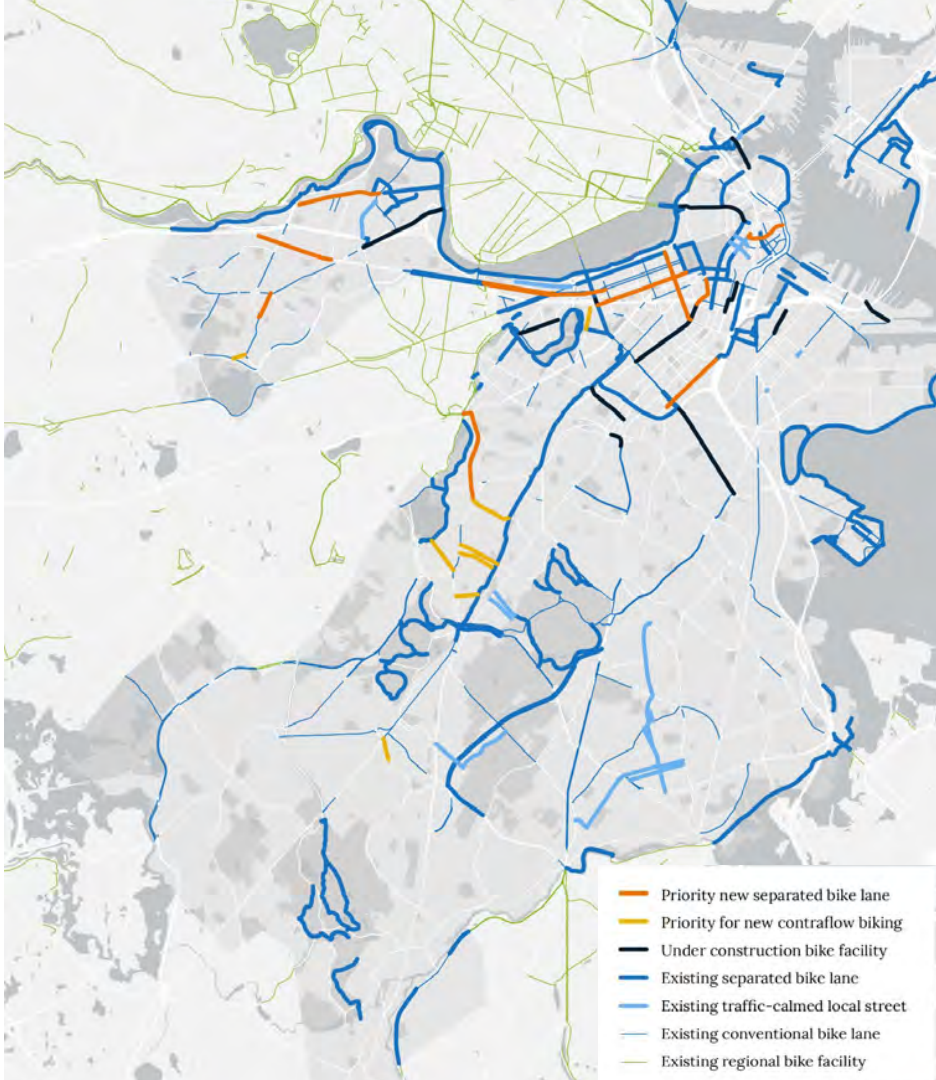
BETTER BIKE LANES

Year One Quantitative Evaluation
Fall 2024

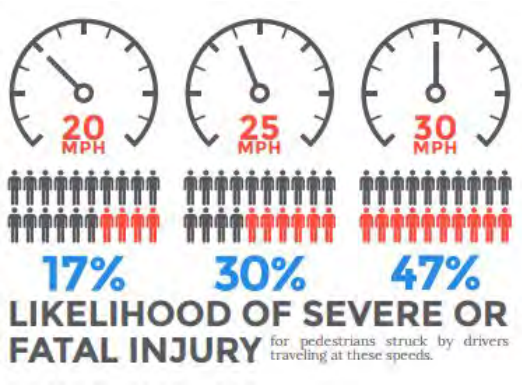
CITY of BOSTON

In 2022, we launched a major initiative to expand the citywide bike network by 9.4 miles.

We've made great progress so far.



WE'RE FOCUSING ON SAFE, CONNECTED ROUTES



SLOWER, SAFER SPEEDS FOR EVERYBODY

We're including **speed humps** in Better Bike Lane projects on eligible streets to make streets safer for all.

DIRECT ROUTES AND BETTER ACCESS

Many projects include **contraflow bike lanes**, allowing two-way bike access on one-way streets.

BETTER BIKING ON BUSY STREETS

On arterial streets, we're adding **separated bike lanes**, an effective tool to increase biking and safety and comfort.

IN 2023, WE COMPLETED:

1. **SOUTH HUNTINGTON AVENUE (JAMAICA PLAIN)**
   Separated bike lane
2. **BOYLSTON STREET (JAMAICA PLAIN)**
   Contraflow bike lane and speed humps
3. **GREEN STREET (JAMAICA PLAIN)**
   Buffered bike lane and speed humps
4. **SEAVERNS AVENUE AND GORDON STREET (JAMAICA PLAIN)**
   Standard bike lane and speed humps
5. **ELIOT STREET (JAMAICA PLAIN)**
   Contraflow bike lane and speed humps
6. **POPLAR STREET PHASE 1 (ROSLINDALE)**
   Contraflow bike lane and speed humps
7. **BERKELEY STREET PHASE 1 (SOUTH END)**
   Separated bike lane

DATA COLLECTION AND METHODOLOGY

FALL 2022 Baseline data collection on all streets planned for Better Bike Lane projects
Tuesday, Sept. 27, 2022
Wednesday, Sept. 28, 2022

FALL 2024 Post-install data collection on streets where projects were completed in 2023
Tuesday Sept. 17, 2024
Wednesday Sept. 18, 2024

We collected speed and volume data on mid-week dates that represent typical traffic conditions. Weather was typical for September. Data collection was performed by a third party vendor using automated counting technology.

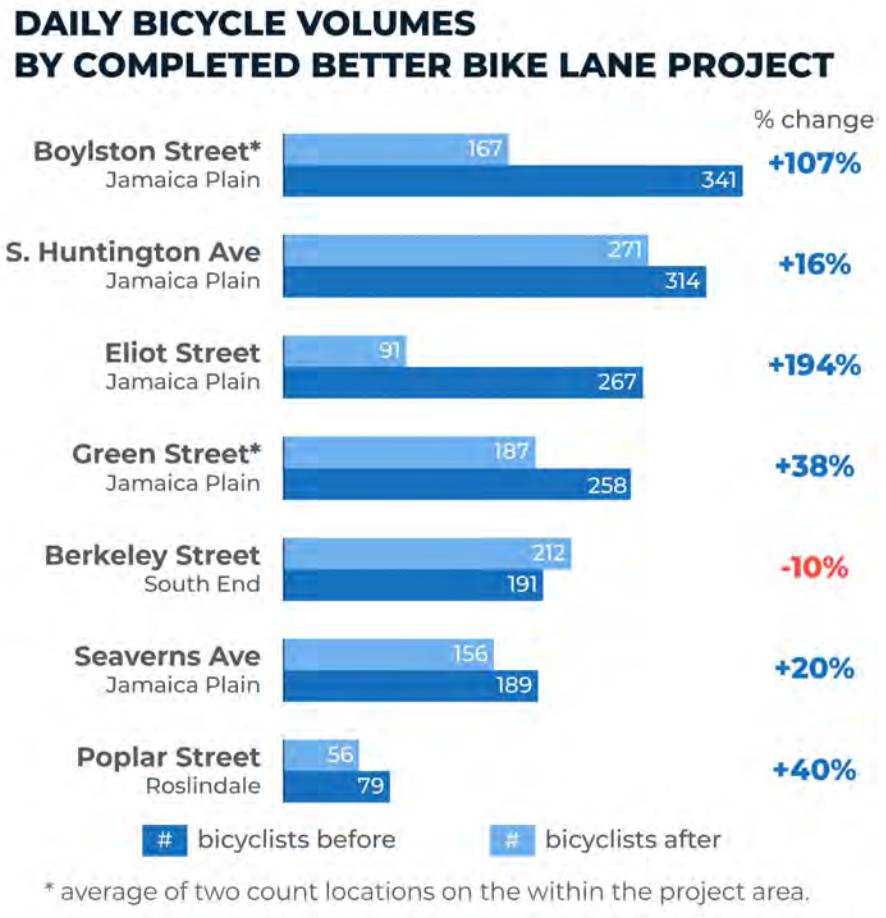
For the analysis in this presentation, we averaged both data collection dates together.

Control location data were derived from the Quarterly Bicycle Count program.

KEY TAKEAWAYS

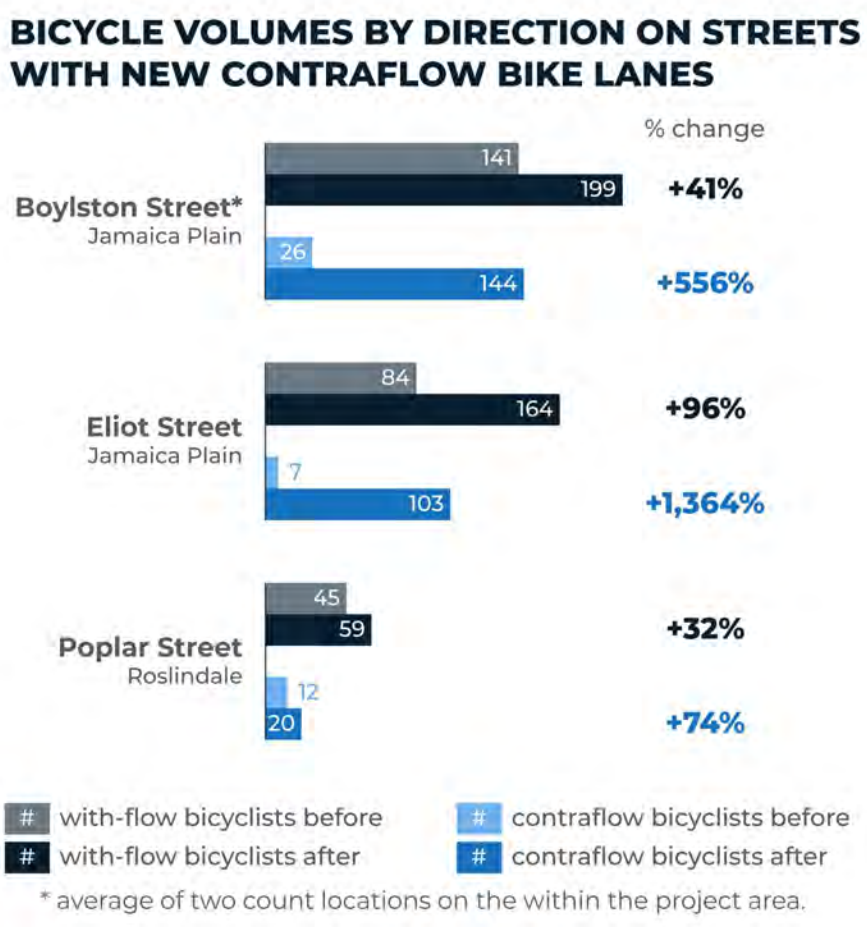
Bicycle counts went up!

- We counted more people biking after the installation of **6 out of 7** projects.
  - Streets with new **contraflow bike lanes** saw the largest increases
- Bicycling increased a remarkable **44%** on average across all projects.
  - Individual projects saw a range of 194% increase to a 10% decrease.
  - Projects with low or negative changes could be due to lack of network connections, local factors, or ambient daily variation.



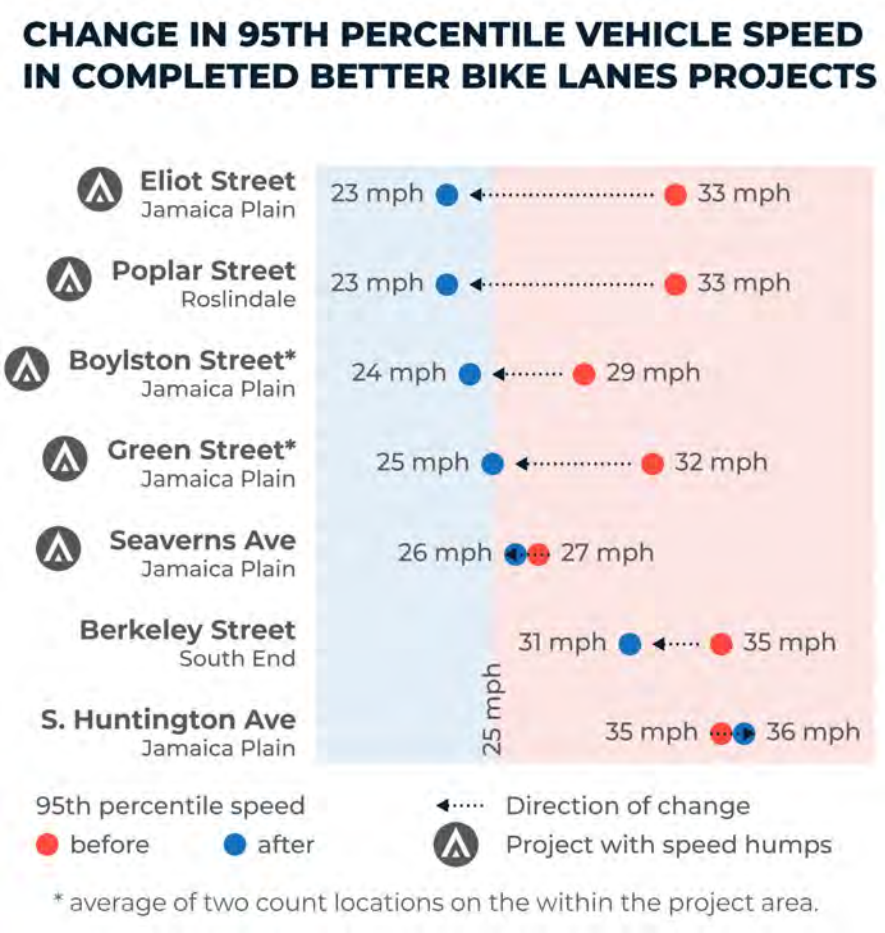
Contraflow bike lanes had a big impact on bike use!

- Contraflow bike lanes dramatically increased bike use in the contraflow direction by **482%** on average
- Contraflow bike lanes also increased with-flow biking by **51%**, on average
- In comparison, biking **increased 20%** on average on projects **without** contraflow bike lanes



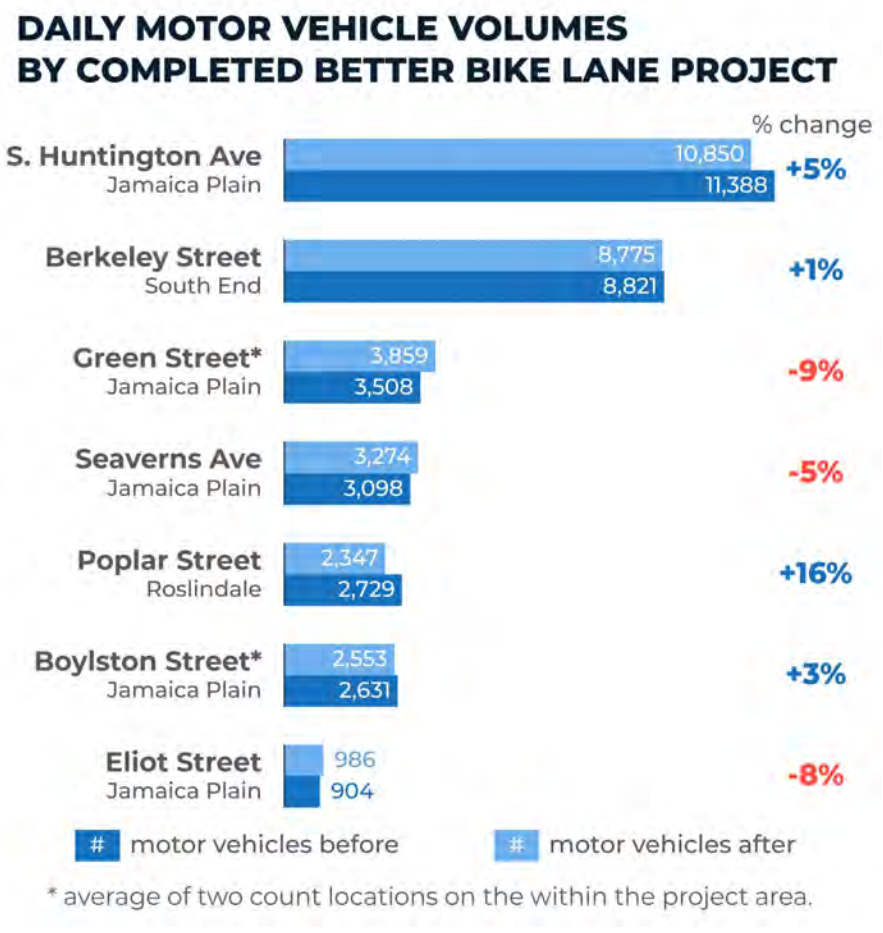
Speeding went down!

- **6 out of 7** projects saw significant drops in the highest (95th percentile) speeds.
- Compliance with the 25 mph speed limit **increased by about 15%** on average across all projects
- Streets where we added **speed humps** saw the biggest speed reductions.
- Results were mixed on arterial streets where we can't put speed humps:
  - Berkeley Street went from 3 to 2 lanes, which may have decreased speeds
  - South Huntington Ave was repaved, which may have increased speeds



Motor vehicle volumes changed only modestly

- Motor vehicle volumes **stayed about the same**, on average.
  - While individual streets saw greater changes, they were still modest compared to the 44% average increase in bicycle volumes
- Modest fluctuations such as these point towards ambient daily variations rather than a larger trend.
- Further data collection and analysis is recommended to explore the relationship between bike lane projects, traffic calming, and motor vehicle volumes.

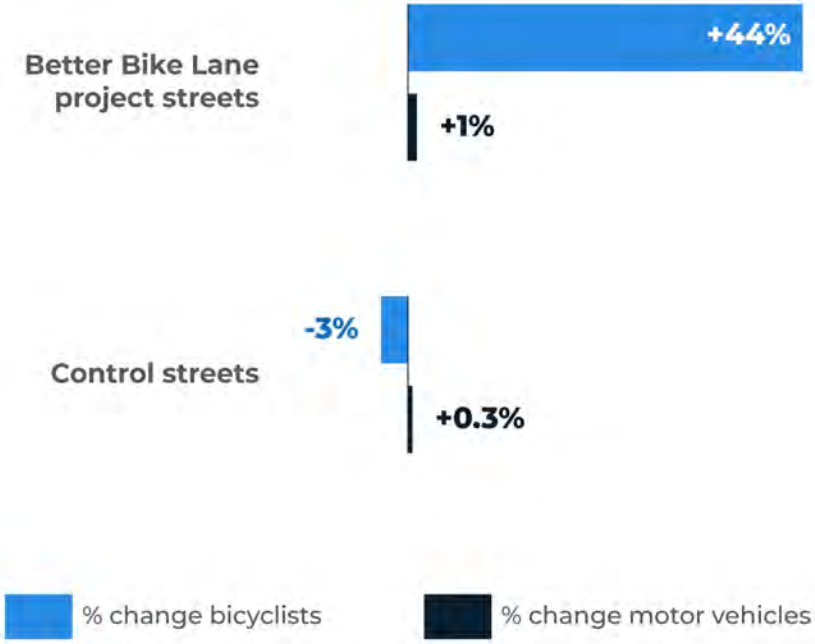


Better Bike Lanes had a big impact!

- Better Bike Lane projects saw a significant increase in bicycle usage (**+44%**), while control streets experienced a slight decrease (**-3%**).
  - Better Bike Lane post-install data were collected in mid-September 2024, while control data were collected late October 2024. The 3% decrease could be due to seasonal variation in bicycle volumes.
- Motor vehicle usage remained relatively stable on Better Bike Lane projects (**+1%**) and control streets (**+0.3%**).
- These minor fluctuations seen on control streets are likely due to ambient daily variations rather than wider trends.

PERCENTAGE CHANGE BY USER GROUP AND LOCATION TYPE

Project streets vs. control streets, Fall 2022 - Fall 2024



Fifteen control streets were selected for comparison. These streets had similar characteristics to the project streets but did not receive any bicycle infrastructure improvements or new connecting bike routes between Fall 2022 and Fall 2024.

RESULTS AND ANALYSIS

By project and location

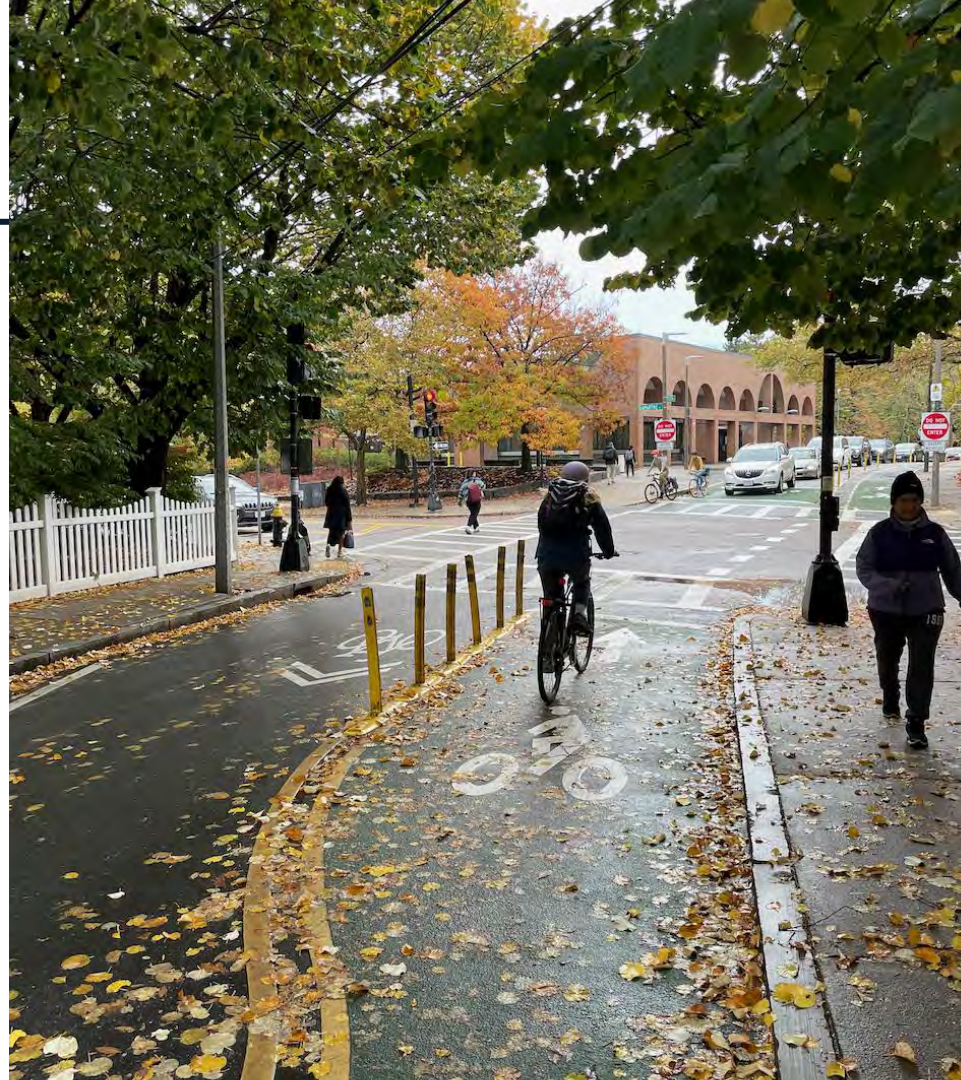
BOYLSTON STREET

Jamaica Plain

REPAVING

SPEED HUMPS

CONTRAFLOW BIKE LANE

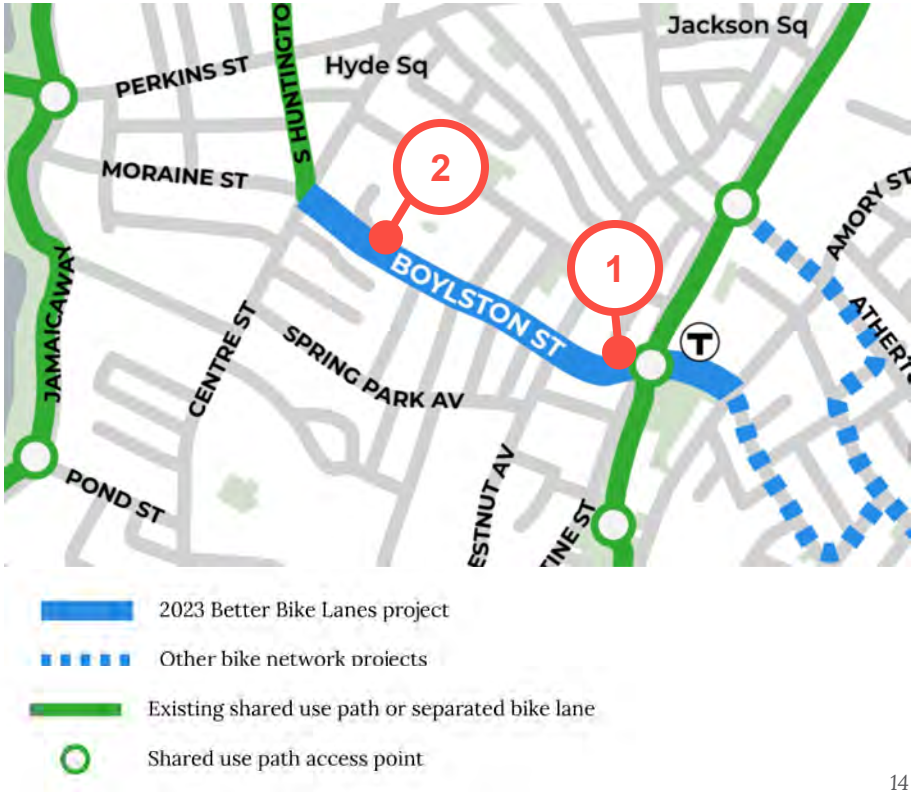


LOCATION

Boylston Street

We collected data at:

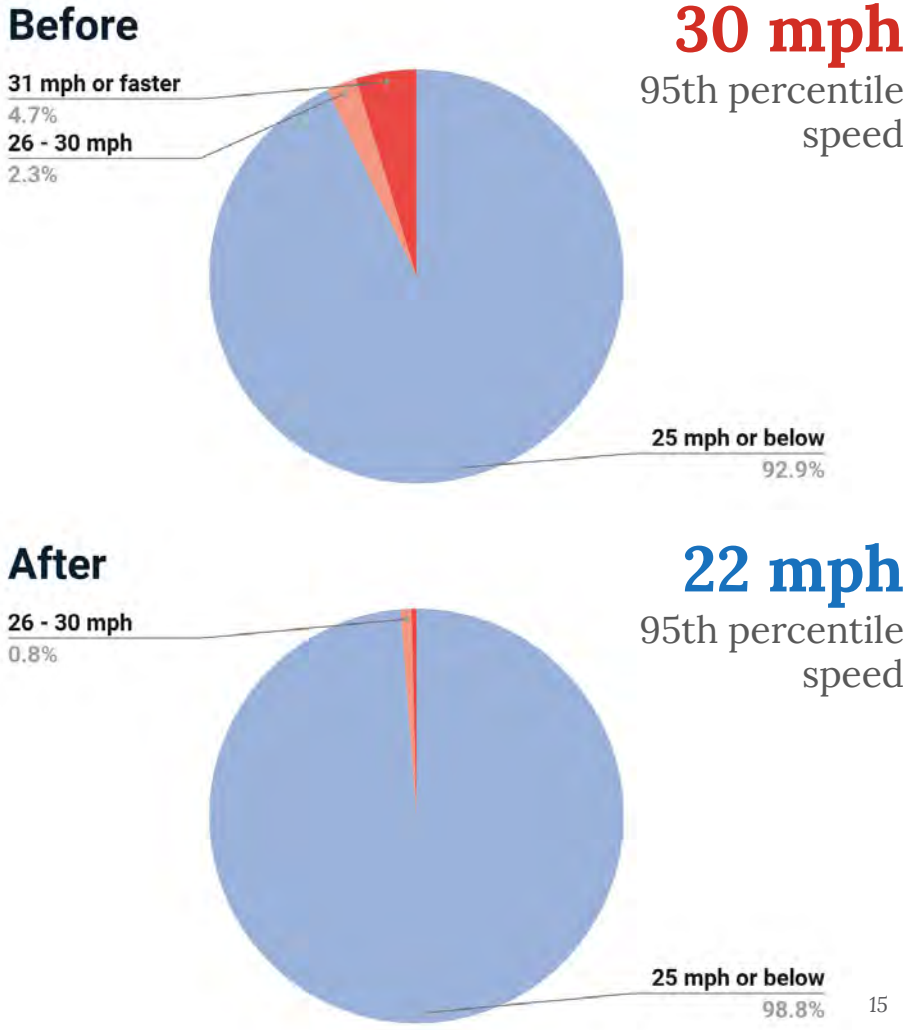
1. Boylston Street east of Danforth Street
2. Boylston Street east of Belmore Terrace



SPEED

Boylston Street east of Danforth Street

- After the project, **almost all drivers (99%)** were traveling at or below the speed limit of 25 mph.
- Speeding went down, creating a safer environment for all road users.

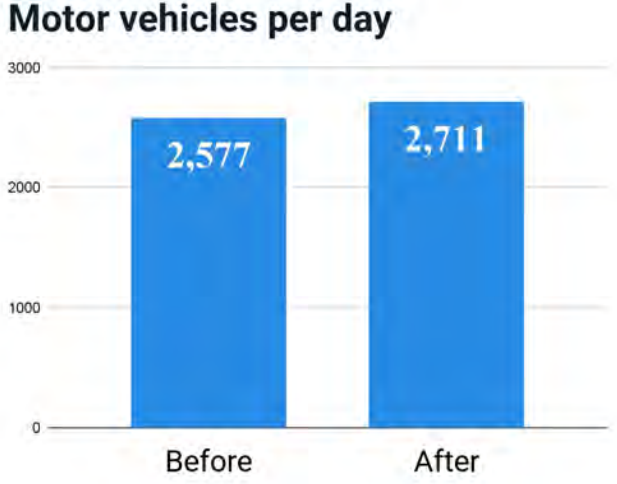


PEOPLE BIKING AND DRIVING

Boylston Street east of Danforth Street

- Biking **nearly doubled** after the project was installed.
- Driving increased by 5%, suggesting that the speed humps didn't encourage drivers to use other streets.

97% increase

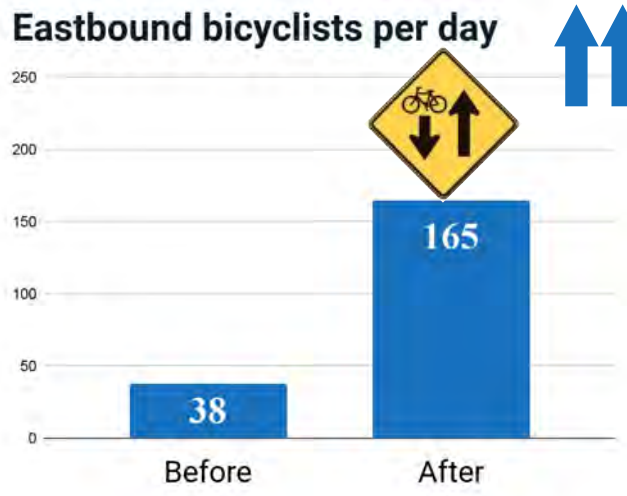


5% increase

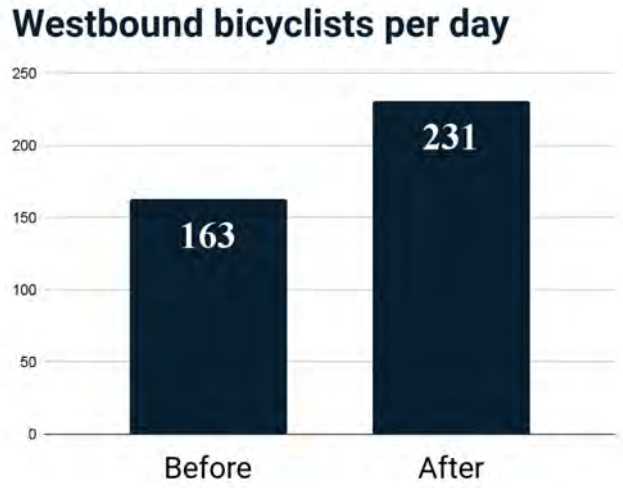
PEOPLE BIKING BY DIRECTION

Boylston Street east of Danforth Street

- **More people biking both directions:** Allowing two-way bike traffic on Boylston Street led to a significant increase in biking in both directions.
- **Eastbound bicycling surge:** Allowing eastbound biking resulted in a dramatic increase in bicyclists, indicating strong demand for this option.



334% increase

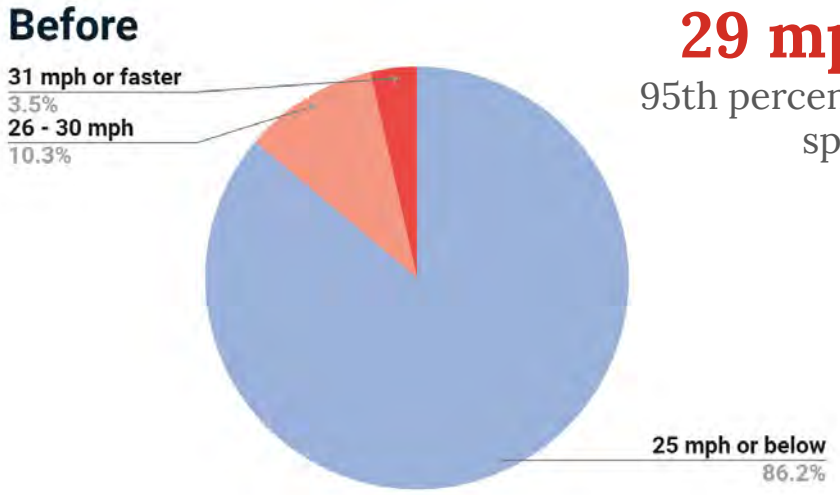


42% increase

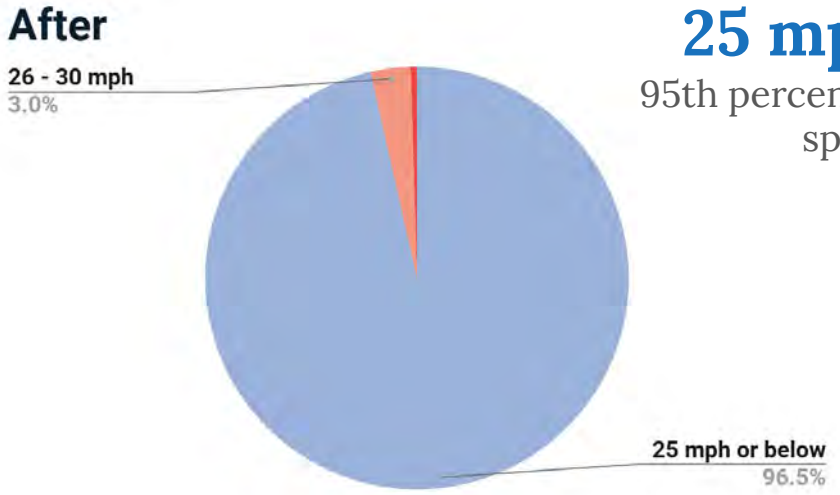
SPEED

Boylston Street east of Belmore Terrace

- After the project, **97% of drivers** were traveling at or below the speed limit of 25 mph.
- 95% of drivers were traveling less than 25 mph.
- Speed humps appear to have effectively reduced excessive speeds, creating a safer environment for all road users.



29 mph
95th percentile speed

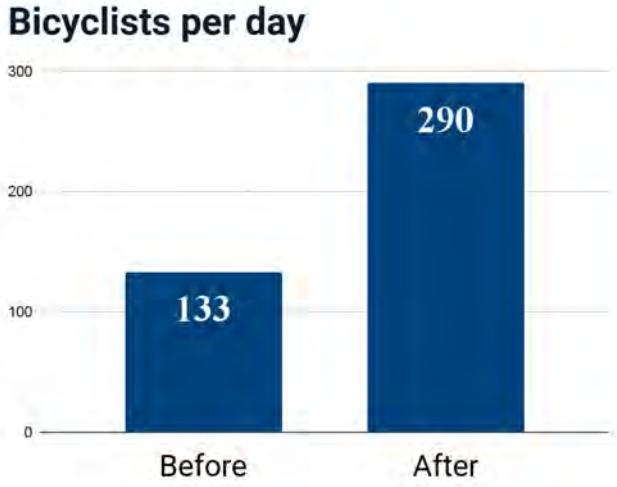


25 mph
95th percentile speed

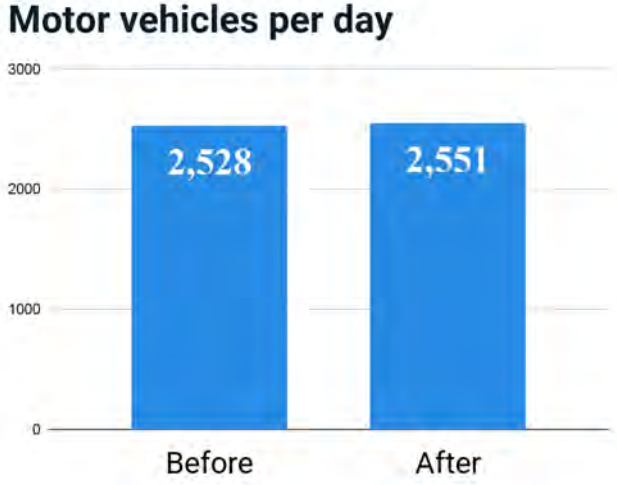
PEOPLE BIKING AND DRIVING

Boylston Street east of Belmore Terrace

- The number of people biking more than doubled after the project, increasing by 118%.
- The number of cars on the street grew by just 1%.



118% increase

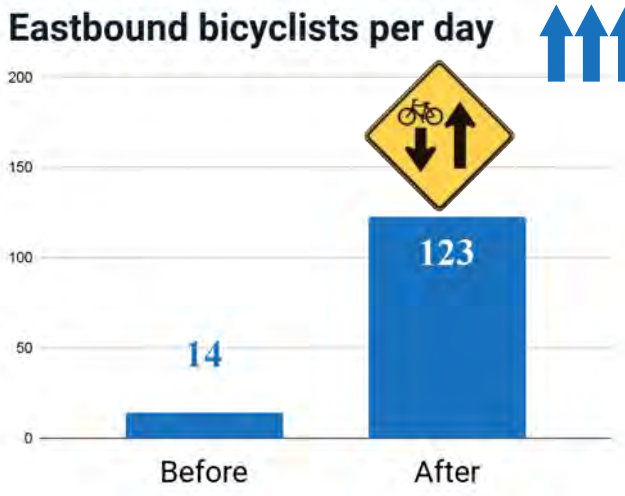


1% increase

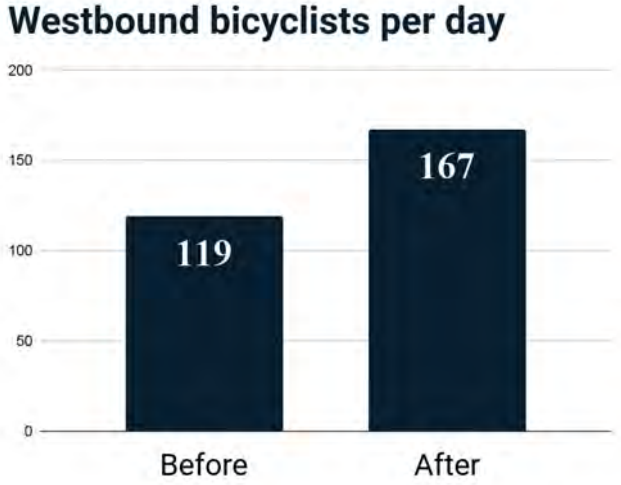
PEOPLE BIKING BY DIRECTION

Boylston Street east of Belmore Terrace

- **Eastbound Biking Surge:** Allowing eastbound biking led to a dramatic 779% increase in people biking, indicating strong demand for this option.
- **Westbound Biking Increase:** Even though westbound biking was already allowed, it saw a notable 40% increase after the project.



779% increase



40% increase

ELIOT STREET

Jamaica Plain

SPEED HUMPS

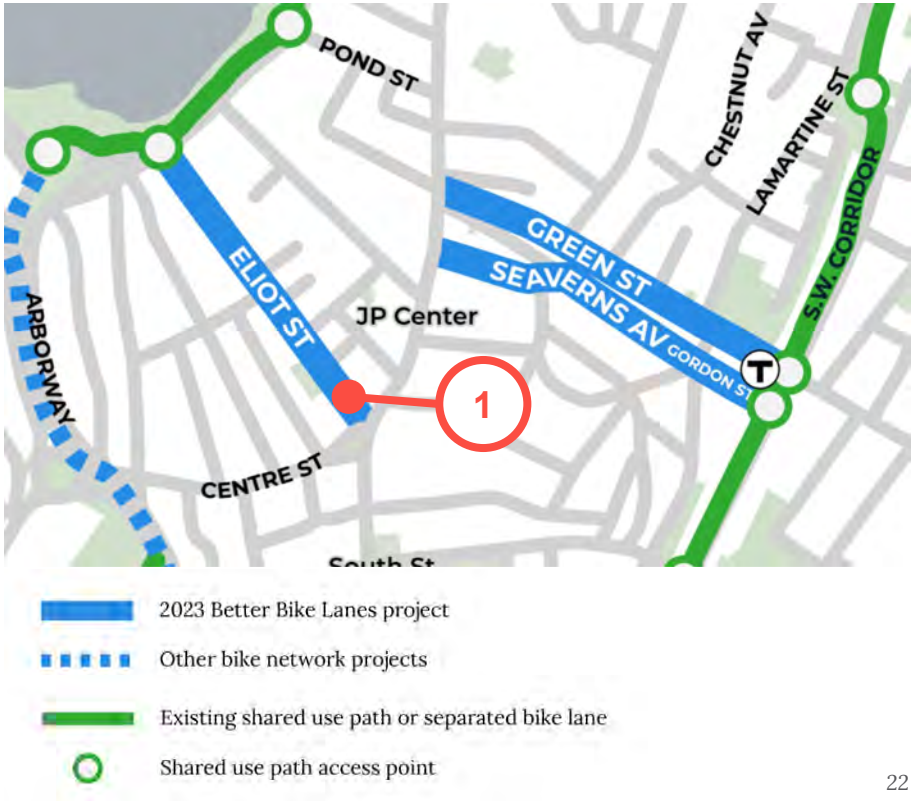
CONTRAFLOW BIKE LANE

LOCATION

Eliot Street

We collected data at:

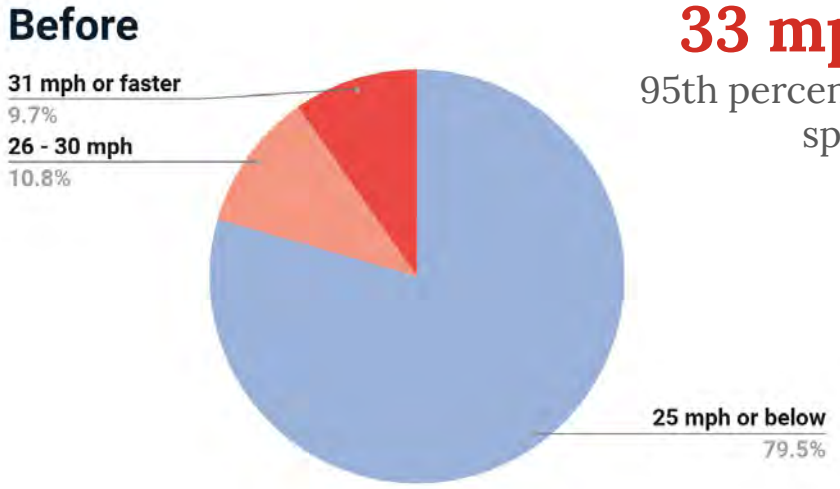
1. Eliot Street north of Centre Street



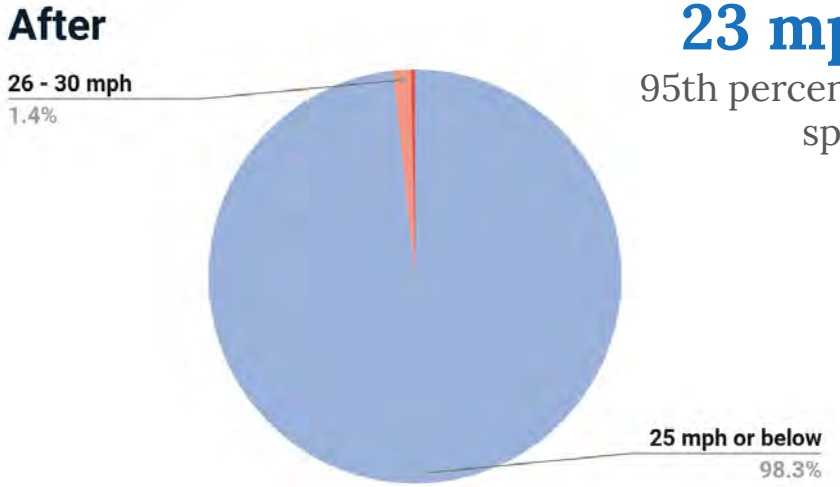
SPEED

Eliot Street north of Centre Street

- Existing speed humps may have been spaced too far apart.
- Additional speed humps were installed to achieve a more consistent traffic calming effect.
- There was a significant reduction in the 95th percentile speed, from 33 mph to 23 mph.



33 mph
95th percentile speed

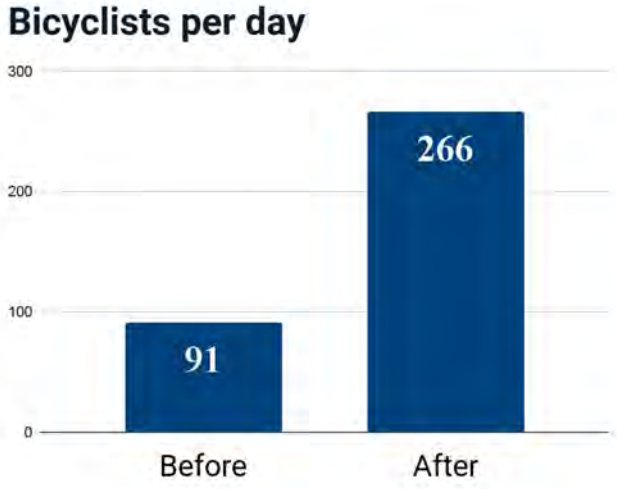


23 mph
95th percentile speed

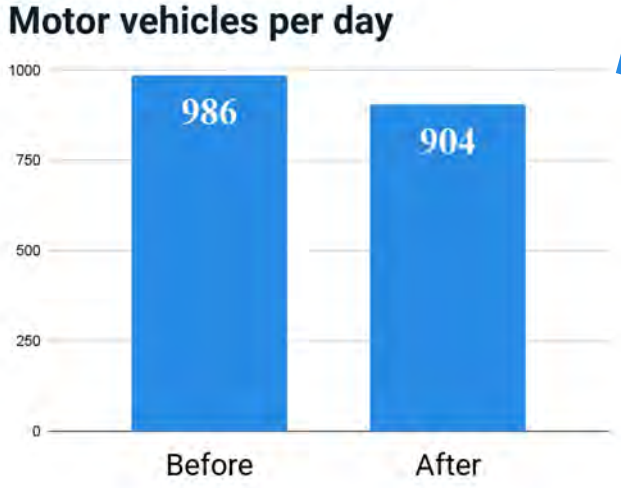
PEOPLE BIKING AND DRIVING

Eliot Street north of Centre Street

- Biking: A significant 194% increase in daily bicyclists was observed after the intervention.
- Driving: A slight 8% decrease in daily motor vehicles was noted.
  - Relatively small changes to motor vehicle volumes may not be indicative of larger trends.
  - More data collection is recommended.



194%
increase

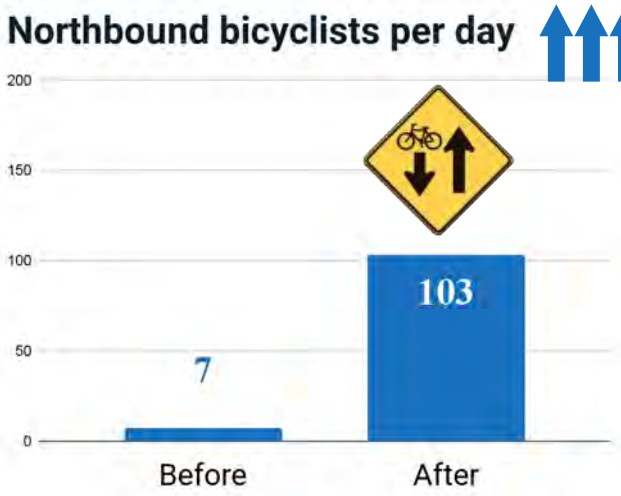


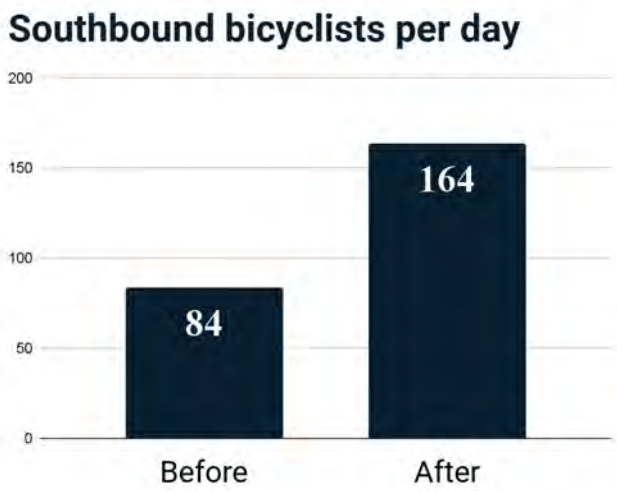
-8%
decrease

PEOPLE BIKING BY DIRECTION

Eliot Street north of Centre Street

- **Northbound biking surge:** While the number of northbound bicyclists was initially low, allowing this direction led to a dramatic 1371% increase, demonstrating a clear demand for this option.
- **Southbound biking increase:** Even though southbound biking (with traffic) was already allowed, the project resulted in a notable 95% increase, suggesting the changes improved appeal for people bicycling regardless of direction.
- The count location may not capture all bicycle use on Eliot Street, as some bicyclists may turn off / on Eliot Street at Brewer Street.





GREEN STREET

Jamaica Plain

SPEED HUMPS

SEPARATED BIKE LANE

(Woosley Sq to Lamartine St)

BUFFERED BIKE LANE

(Lamartine St to Centre St)

LOCATION

Green Street

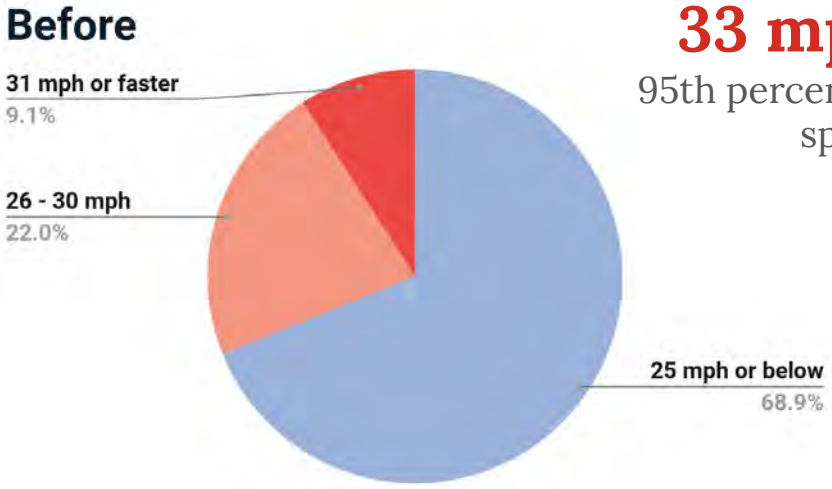
We collected data at:

1. Green Street west of Lamartine Street
2. Green Street west of Warren Street

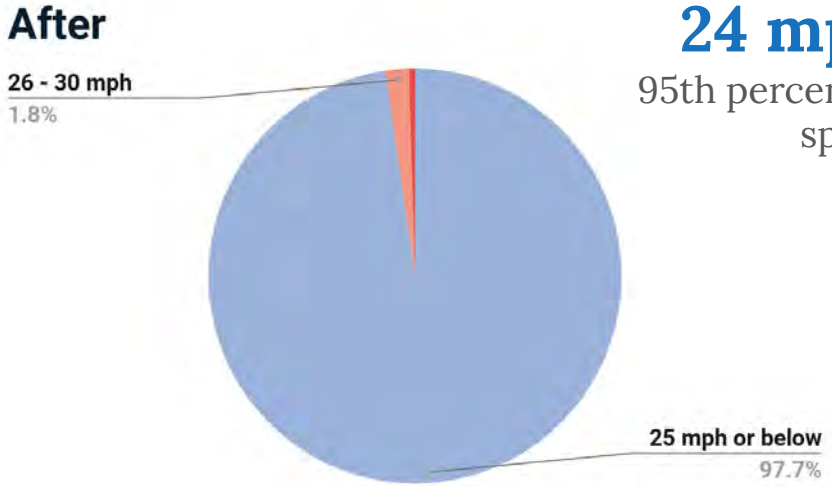
SPEED

Green Street west of Lamartine Street

- The 95th percentile speed dropped from 33 mph to 24 mph, a significant improvement that directly addresses community concerns about speeding.
- The reduced speed will make it safer for families accessing the nearby Johnson Park playground and for people walking to the Green Street MBTA station.



33 mph
95th percentile speed

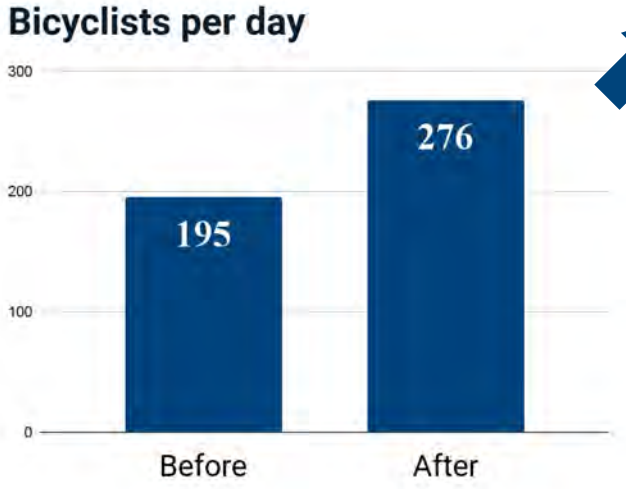


24 mph
95th percentile speed

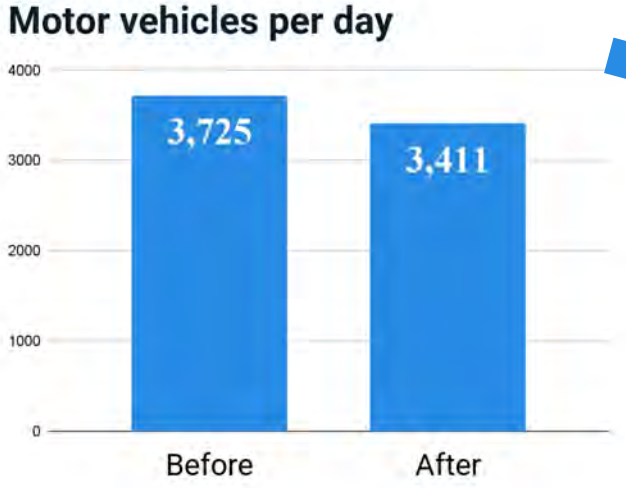
PEOPLE BIKING AND DRIVING

Green Street west of Lamartine Street

- The significant increase in bicycling suggests that **buffered bike lanes paired with speed humps** may be an effective tool for increasing bicycling on streets with similar characteristics to Green Street.
- The combination of the new bike lane on Green Street and the parallel bike lane on Seaverns Avenue likely made biking a more attractive option, as the paired facilities serve both directions of travel.
- Driving: A slight 8% decrease in daily motor vehicles was noted.
  - Relatively small changes to motor vehicle volumes may not be indicative of larger trends.
  - More data collection is recommended.



41%
increase

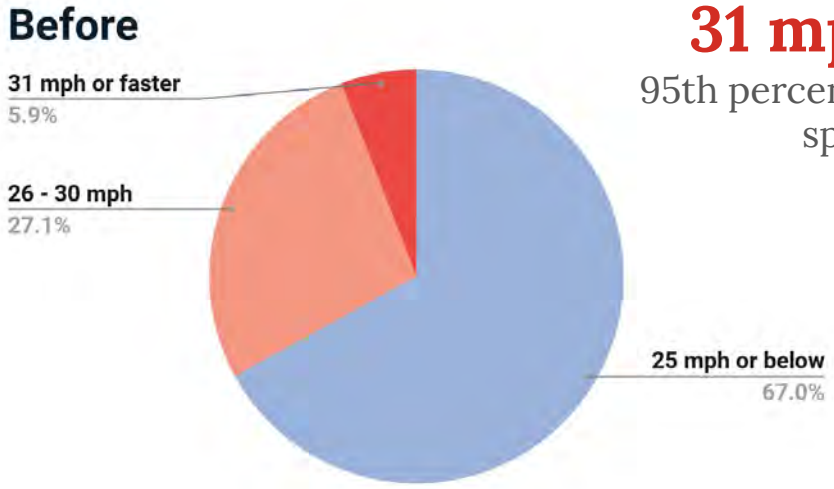


-8%
decrease

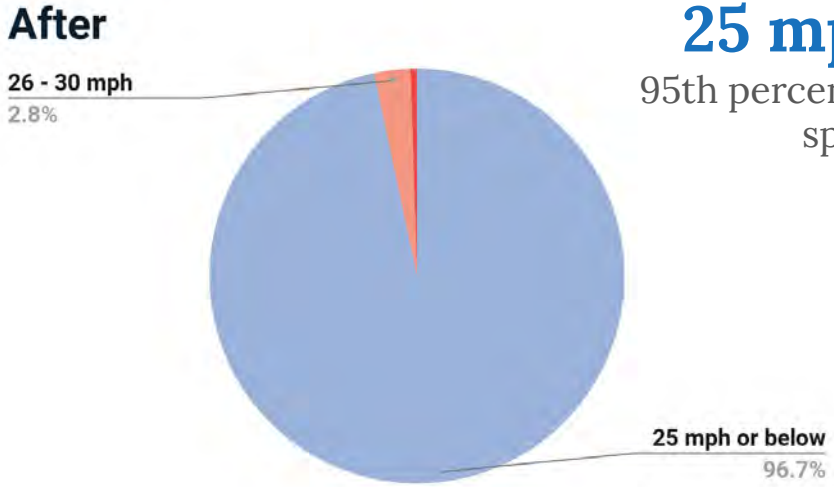
SPEED

Green Street west of Warren Square

- Before, **two thirds of drivers** exceeding the 25 mph speed limit.
- After, almost all of drivers were traveling at or below 25 mph.
- The significant reduction in the 95th percentile speed from 31 mph to 25 mph indicates that the speed humps were effective in reducing speeding behavior.



31 mph
95th percentile speed

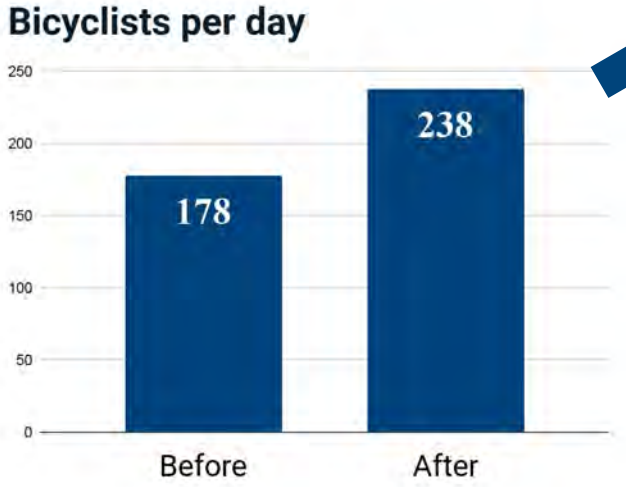


25 mph
95th percentile speed

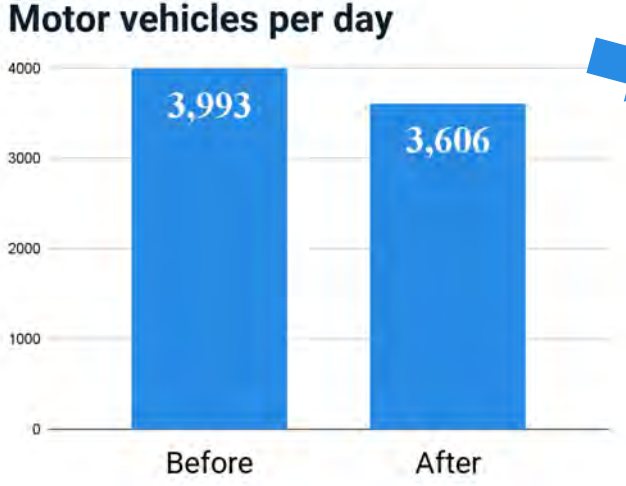
PEOPLE BIKING AND DRIVING

Green Street west of of Warren Square

- Similar to the other count location on Green Street (west of Lamartine Street), there was a significant increase in bicycling.
- The slightly slower volume at this count location compared to the west of Lamartine Street could be a result of bicyclists turning off into side streets prior to reaching Warren Square.
- Driving: A slight 10% decrease in daily motor vehicles was noted.
  - Relatively small changes to motor vehicle volumes may not be indicative of larger trends.
  - More data collection is recommended.



34%
increase



-10%
decrease

SEAVERNS AVENUE

Jamaica Plain

SPEED HUMPS

SEPARATED BIKE LANE

(Centre St to City Feed D'way)

STANDARD BIKE LANE

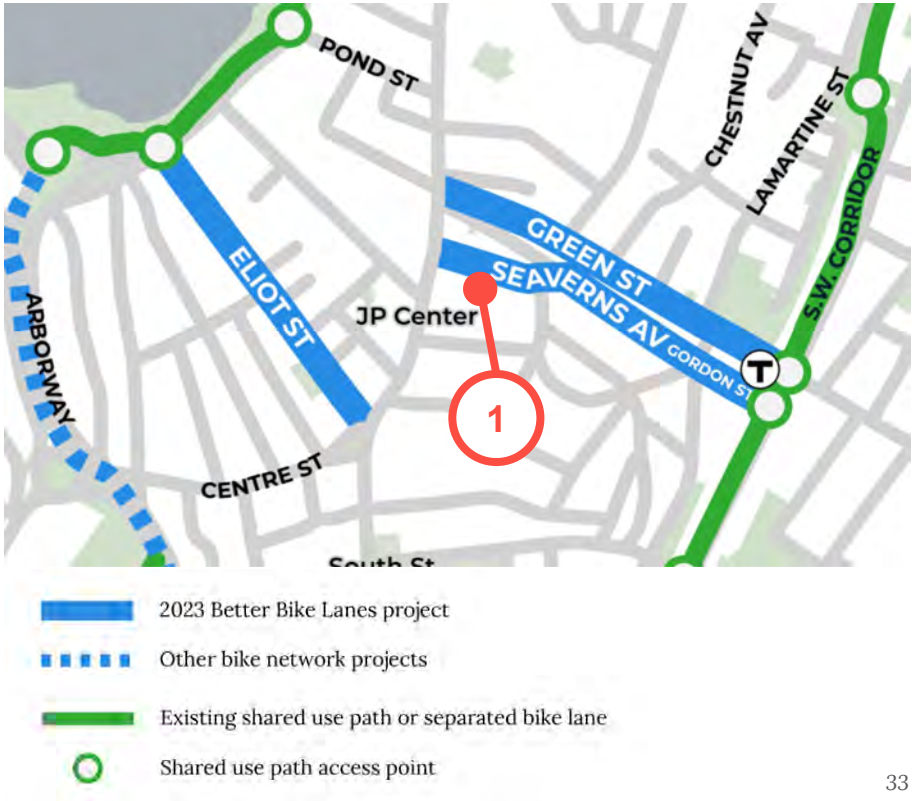
(All other sections)

LOCATION

Seaverns Avenue

We collected data at:

1. Seaverns Avenue east of Brown Terrace



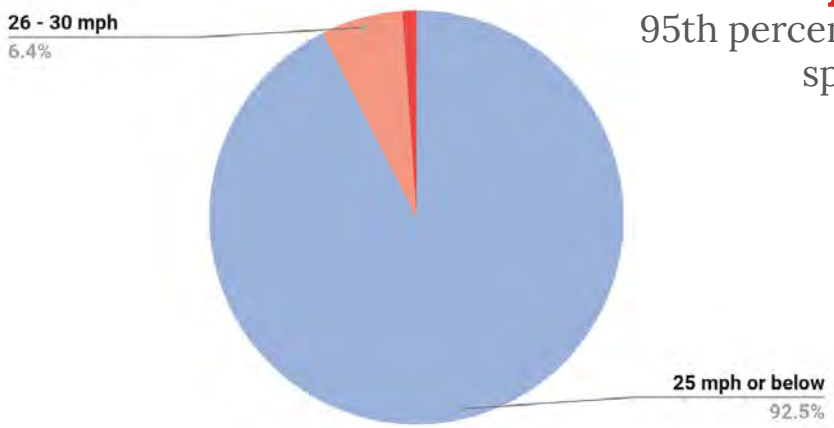
SPEED

Seaverns Avenue east of Brown Terrace

- While there was a slight decrease in the 95th percentile speed from 27 mph to 26 mph, the overall speed distribution remained relatively unchanged.
- The baseline speed on at this specific location was already relatively low before the installation of speed humps, limiting the potential for significant reductions.

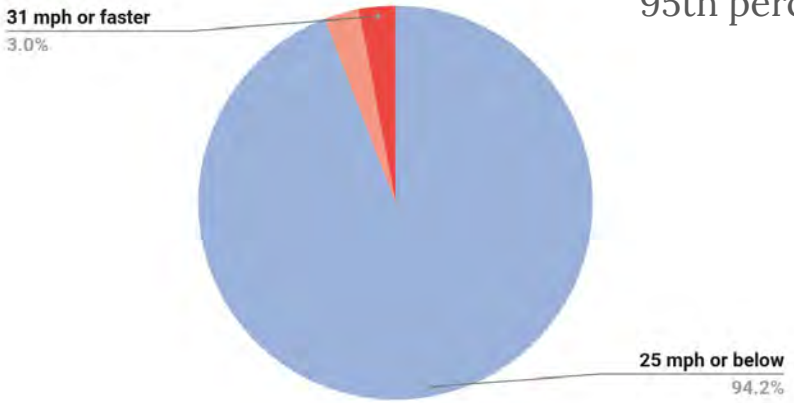
Before

27 mph
95th percentile speed



After

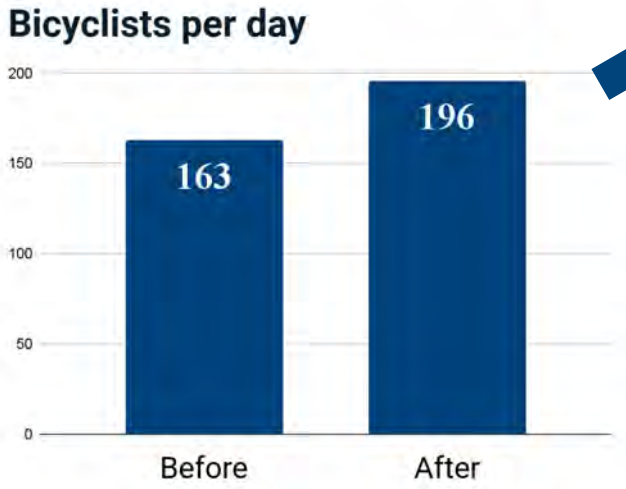
26 mph
95th percentile speed



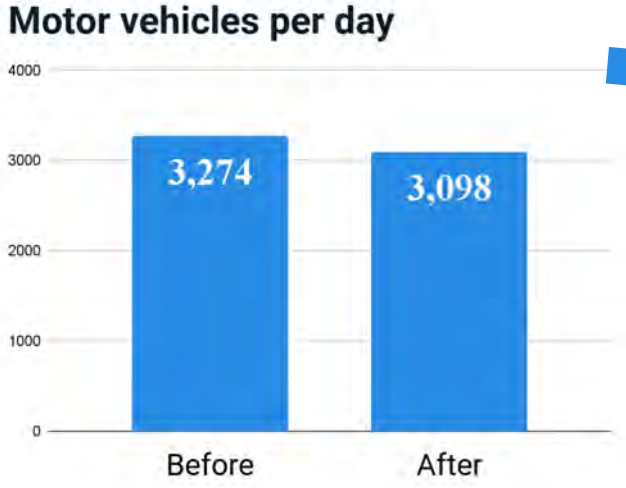
PEOPLE BIKING AND DRIVING

Seaverns Avenue east of Brown Terrace

- The number of bicyclists increased by 20% after the bike lane was added, while the number of motor vehicles showed minimal change.
- The combination of bike lanes on Green Street and Seaverns Avenue was meant to serve bike trips in both directions.
- While both streets saw increased biking, Green Street had a larger increase (up to 40% more bikes). This could be due to factors like street characteristics or trip patterns, where people may choose different routes for return trips.



20%
increase



-5%
decrease

POPLAR STREET

Roslindale

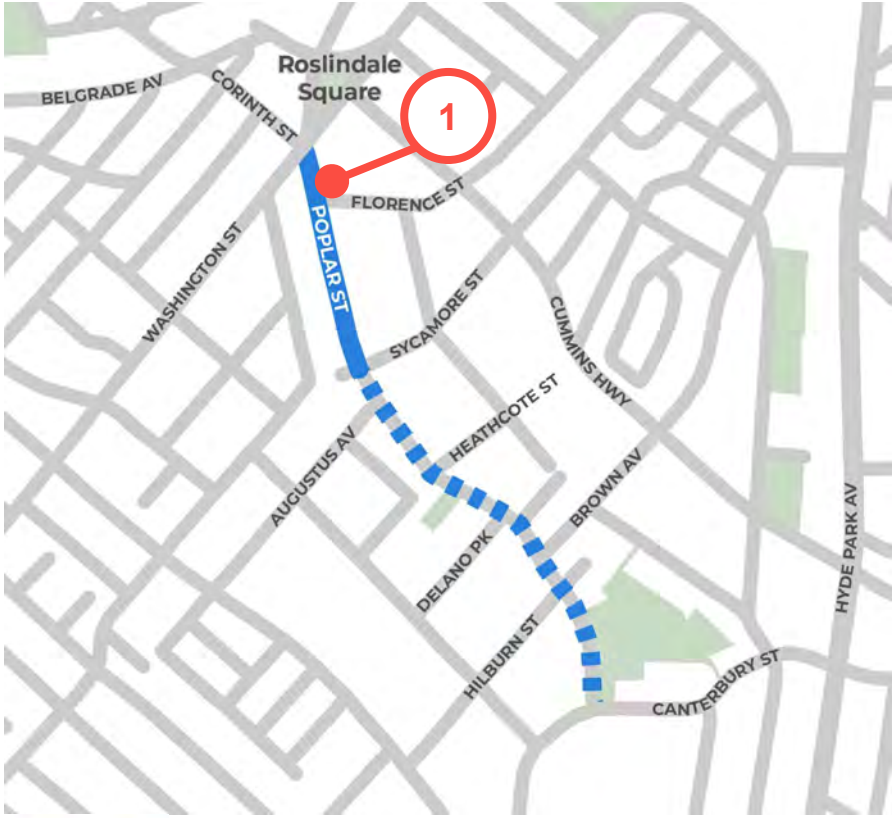
SPEED HUMPS

CONTRAFLOW BIKE LANE

LOCATION
Poplar Street

We collected data at:

1. Poplar Street north of Florence Street



Phase 1: Installed 2023

Phase 2: In design
Estimated construction 2025 - 2026

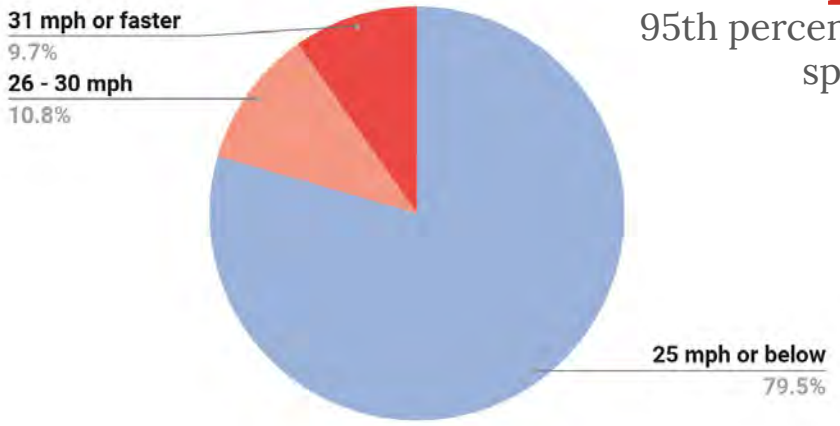
SPEED

Poplar Street north of Florence Street

- 95th percentile speeds dropped from 33 mph to 23 mph, a significant improvement that directly addresses community concerns about speeding.
- The slower speeds will make the area safer for pedestrians, especially older adults and children walking to the Roslindale Square shopping district.

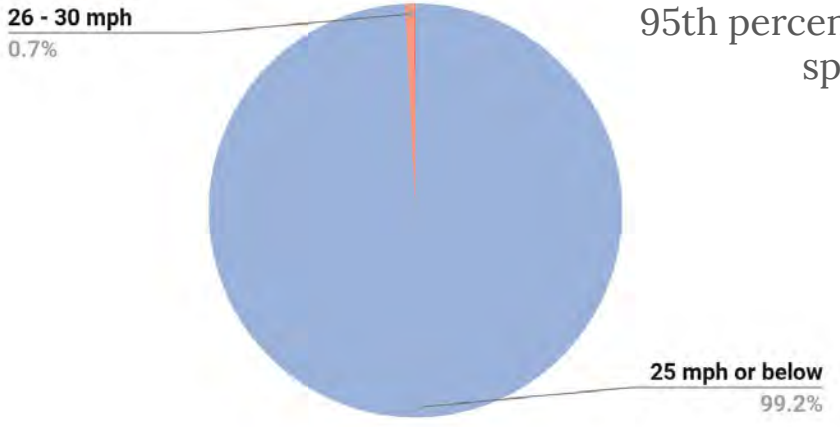
Before

33 mph
95th percentile speed



After

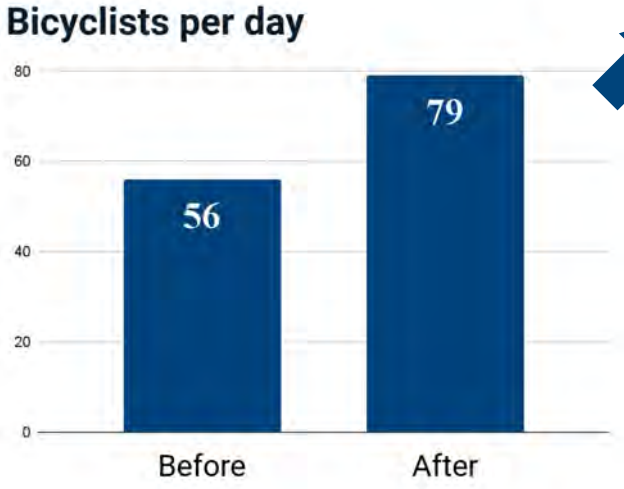
23 mph
95th percentile speed



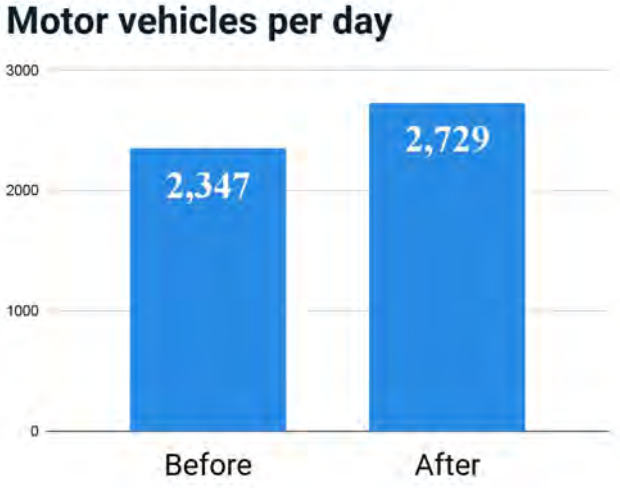
PEOPLE BIKING AND DRIVING

Poplar Street north of Florence Street

- The number of bikes on Poplar Street increased by 40% after the project, indicating the effectiveness of the design changes.
- Motor vehicle traffic increased by 16%, which may be due to increased local activity or other factors.



40% increase

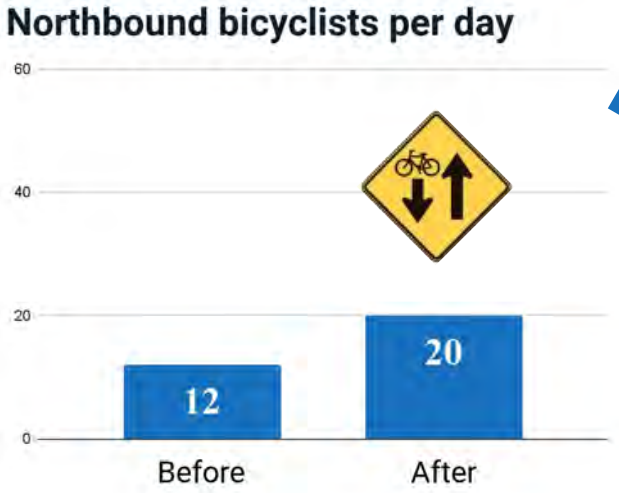


16% increase

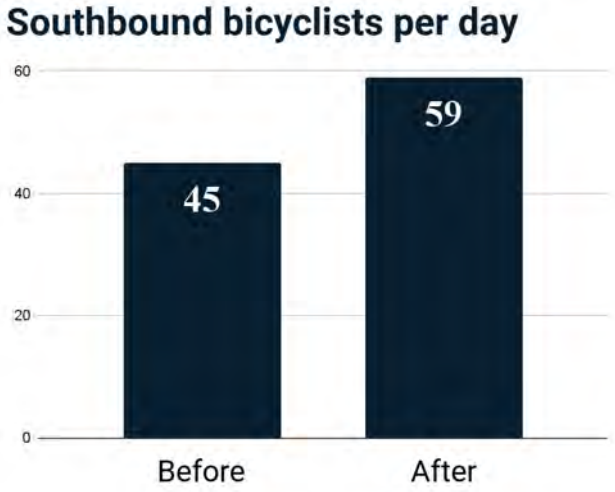
PEOPLE BIKING BY DIRECTION

Poplar Street north of Florence Street

- Allowing northbound biking led to a dramatic 67% increase.
- Southbound biking, already allowed, saw a notable 16% increase too, suggesting increased appeal as a bike route overall.
- **Future Improvements:** Phase 2 of the project will enhance Poplar Street as a bike route to Roslindale Square, adding add traffic calming and bike wayfinding.



67% increase



16% increase

SOUTH HUNTINGTON AVENUE

Jamaica Plain

REPAVING

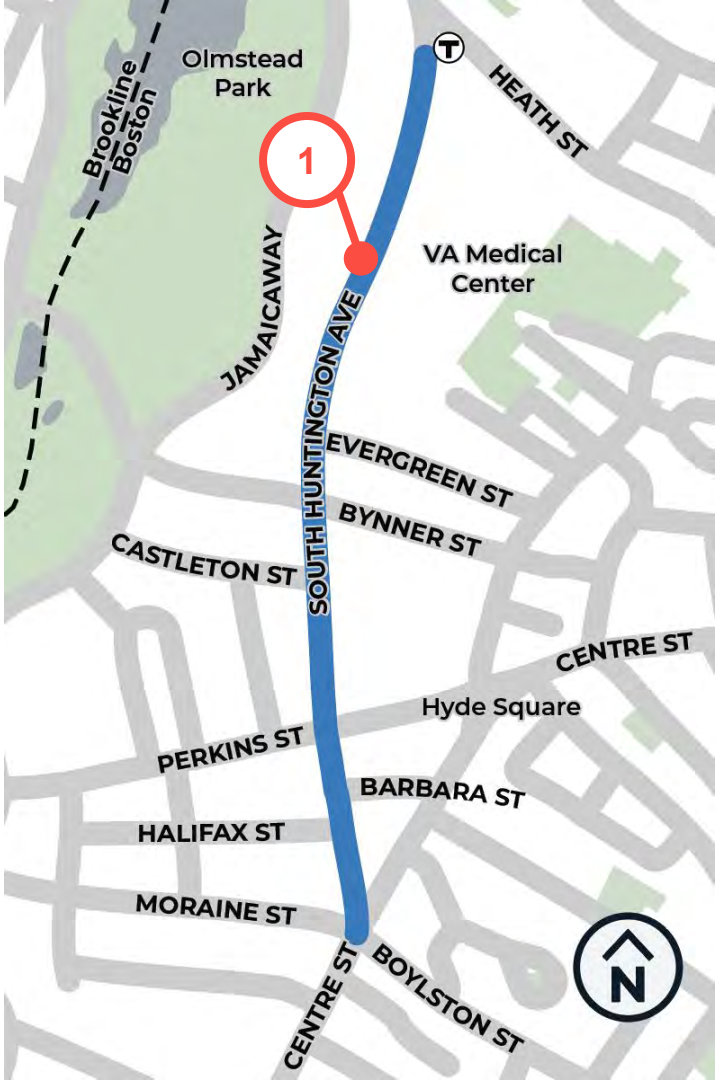
SEPARATED BIKE LANE

LOCATION

South Huntington Avenue

We collected data at:

1. 150 South Huntington Avenue



SPEED

150 South Huntington Avenue

A surprising trend emerged: slightly higher 95th percentile speeds and reduced compliance with the 25 mph limit.

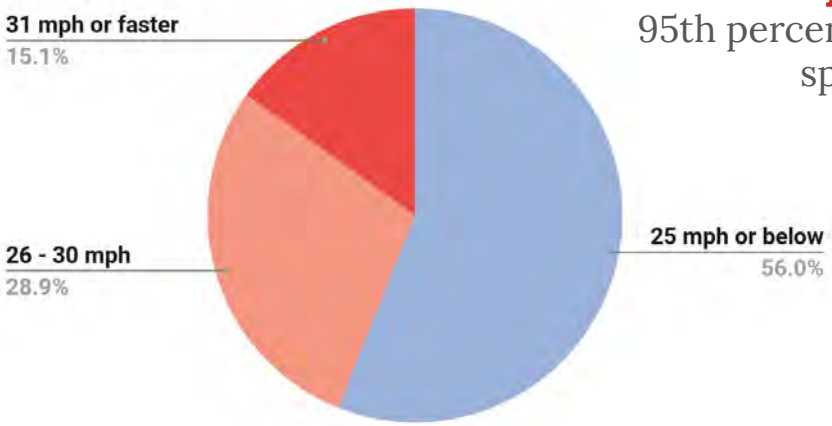
Potential Contributing Factors:

- **Improved Pavement Quality:** Prior to our repaving project, the road's rough surface may have naturally limited speeds.
- **Wider Lanes, Minimal Traffic Calming:** As an arterial road, South Huntington Avenue requires wider lanes for transit and large vehicles, and we couldn't install speed humps.

Further investigation is needed to better understand these factors and develop effective traffic calming strategies for arterial roads.

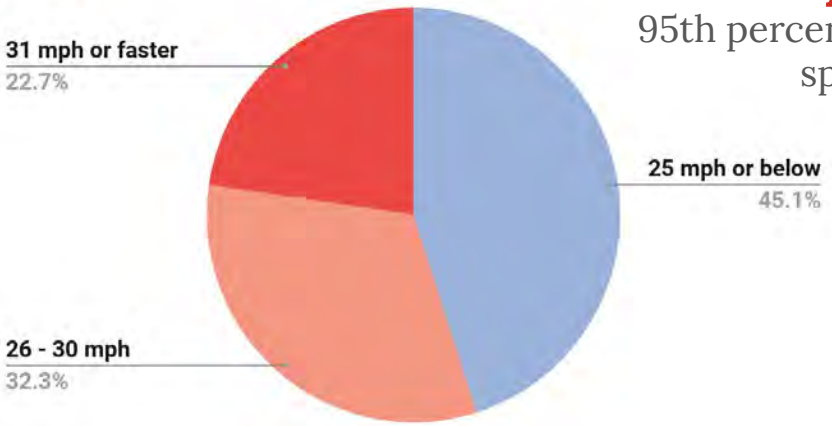
Before

35 mph
95th percentile speed



After

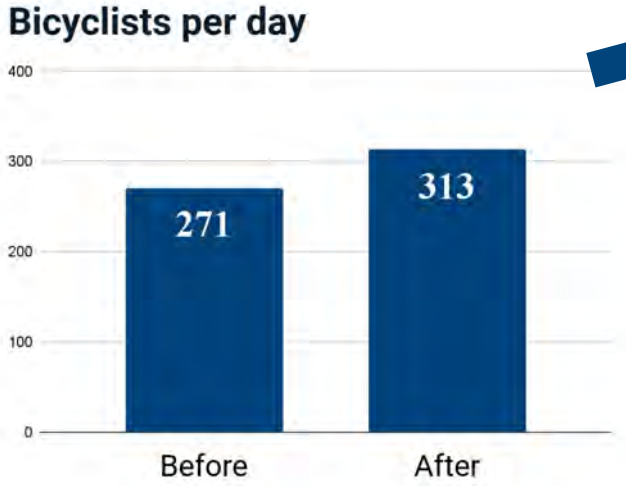
36 mph
95th percentile speed



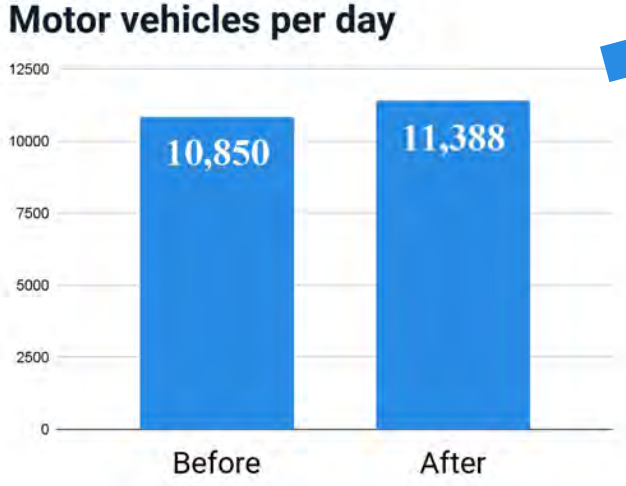
PEOPLE BIKING AND DRIVING

150 South Huntington Avenue

- The number of bikes increased by 16% after the project.
- Motor vehicle traffic increased by 5%, which may be due to short-term factors does not necessarily indicate a larger trend.
- **Importance of Complete Connections:** The increase in biking may be limited by the lack of bike lanes north of Heath Street, highlighting the importance of extending the bike facility to create a complete connection.



16%
increase



5%
increase

BERKELEY STREET

South End

REPAVING

SEPARATED BIKE LANE

LANE REALLOCATION

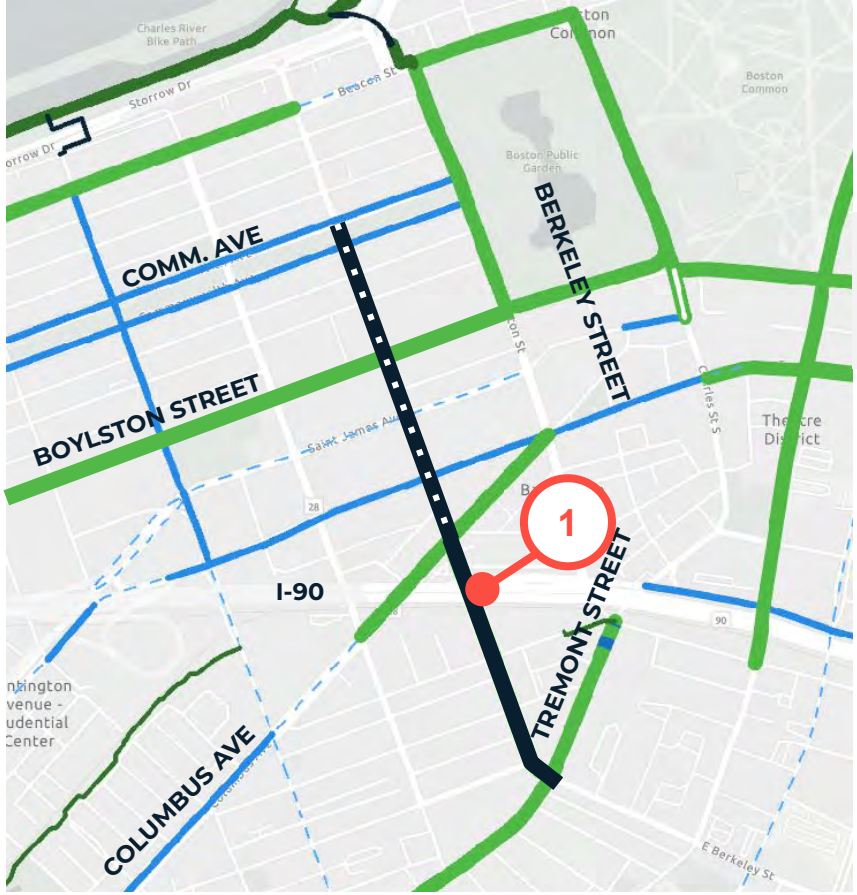
3 lanes to 2 lanes

LOCATION

Berkeley Street

We collected data at:

1. Berkeley Street Bridge over Interstate 90



Phase 1: Installed Fall 2023

Phase 2: Installed Fall 2024

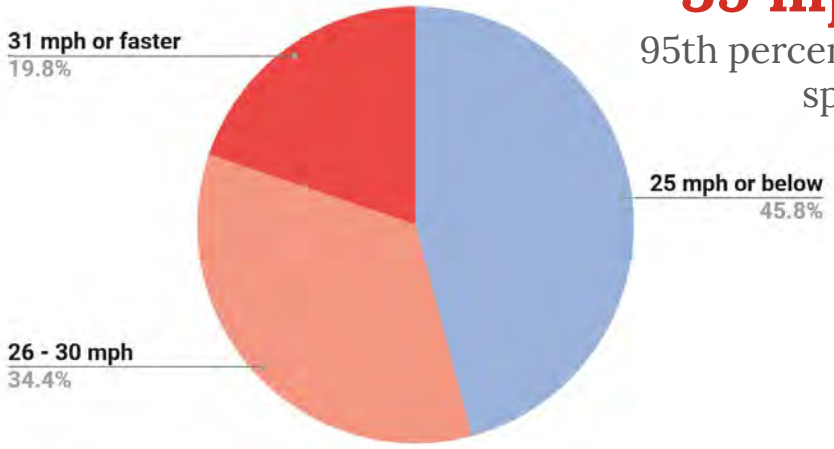
SPEED

Berkeley Street Bridge over I-90

- 95th percentile speed decreased, but remained above the 25 mph speed limit.
- The percentage of drivers adhering to the 25 mph speed limit increased significantly from **46% to 78%**
- The percentage of drivers exceeding 31 mph decreased significantly from **20% to 6%**

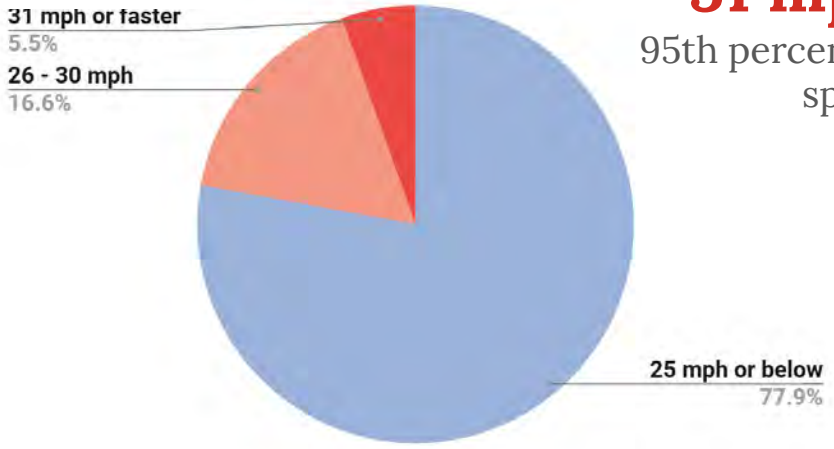
Before

35 mph
95th percentile speed



After

31 mph
95th percentile speed

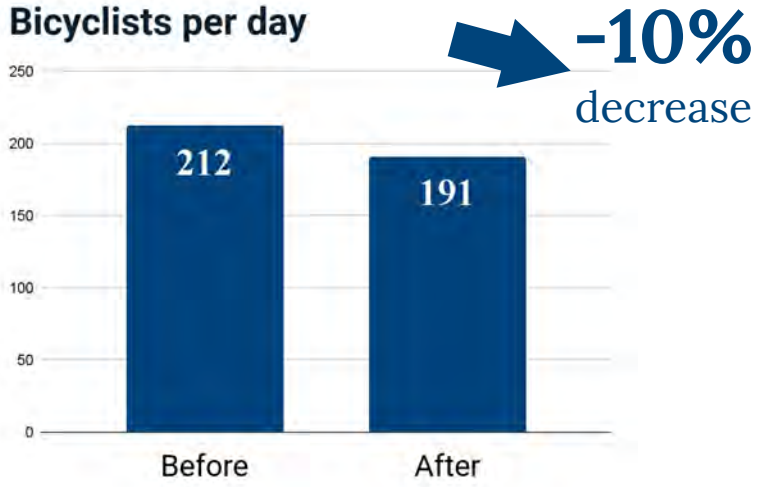


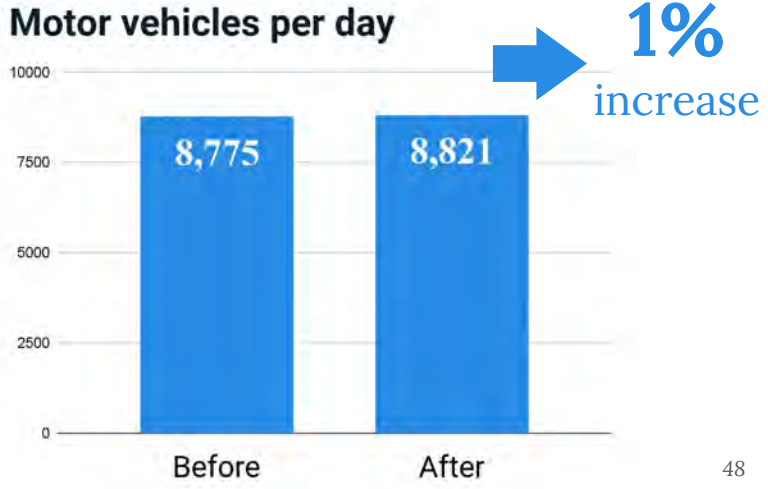
PEOPLE BIKING AND DRIVING

Berkeley Street Bridge over I-90

While post-install data shows lower bicycle volumes, this could be due to several factors:

- **Incomplete Project:** When we collected "after" data, the Berkeley Street Better Bike Lane project was only complete south of Columbus Avenue.
  - The separated bike lane was extended north to Commonwealth Avenue in Fall 2024. We'll collect more data in 2025.
- **Competing Attraction:** The opening of separated bike lanes on Tremont Street in Spring 2024 may have drawn some riders away from the partially-completed Berkeley Street project.
- **Data noise:** traffic volumes can fluctuate from day to day and week to week. Relatively small changes (e.g., ~10%) may not be indicative of larger trends.





COMPARING WITH CONTROL STREETS

Comparisons to control streets allow us to better measure the specific impact of Better Bike Lanes projects.

- We selected fifteen control streets for volume comparison with Better Bike Lane project streets. Speed data was not available for comparison.
- These streets were selected because they have similar characteristics to the project streets, but did not receive any bicycle infrastructure improvements, new connecting bike routes, or speed humps during the study period of Fall 2022 to Fall 2024.

LOCATION	N'HOOD	TYPOLOGY
D St west of West Broadway	South Boston	Local/Collector
Quincy St west of Ceylon St	Roxbury	Local/Collector
Franklin St north of Alcott St	Allston	Local/Collector
Beacon St west of Charles St	Beacon Hill	Arterial 1-way
Charles St north of Revere St	Beacon Hill	Arterial 1-way
Tremont St north of Boylston St	Downtown	Arterial 1-way
Charles St north of Boylston St	Downtown	Arterial 1-way
Beacon St west of Dartmouth St	Back Bay	Arterial 1-way
Washington St north of Bexley Rd	Roslindale	Arterial 2-way
Harvard Ave north of Comm. Ave	Allston	Arterial 2-way
Belgrade Ave east of Anawan St	Roslindale	Arterial 2-way
Longwood Ave east of Pilgrim Rd	Longwood	Arterial 2-way
N. Harvard St south of Soldiers Field Rd	Allston	Arterial 2-way
Columbus Ave west of Mass Ave	South End	Arterial 2-way
Centre St north of Harris Ave	Jamaica Plain	Arterial 2-way

CONTROL STREET DATA COLLECTION

COUNT DATES

Control street data were obtained from the Quarterly Bicycle Count program. Fall 2024 data collection for control streets occurred approximately one month later than for project streets. This temporal discrepancy may introduce some seasonal variability in the bicycle count data.

DATA COLLECTION DATES		
TYPE	**BEFORE**	**AFTER**
Better Bike Lane project streets	Tue, 9/27/22 Wed, 9/28/22	Tue, 9/17/24 Wed, 9/18/24
Control streets*	Wed, 9/21/22 Tue, 9/27/22 Wed, 9/28/22 Thu, 9/29/22 Wed, 10/5/22 Thu, 10/6/22	Tue, 10/29/24 Wed, 10/30/24
* Data collection at each control occurred over two days, and an average of both days was used for this analysis. The dates listed represent the overall collection period across all control locations.		

RESULTS BY LOCATION

On average, project streets saw a significant 44% increase in bicycle usage, compared to a marginal decrease (-3%) on control streets. This comparison highlights the impact of Better Bike Lane projects. Across both project and control locations, motor vehicle usage remained stable.

While the average change in bicycle and motor vehicle use across all control streets was minor, individual locations saw significant variation. These differences could be attributed to local context, seasonal variation between before and after data collection dates, or a combination of these and other factors. Future data collection may help discern if these are random fluctuations or trends.

	LOCATION	TYPOLOGY	N'HOOD	% CHANGE BICYCLISTS	% CHANGE MOTOR VEHICLES
PROJECT STREETS	Berkeley Street	Arterial 1-way	South End	-10%	1%
	South Huntington	Arterial, 2-way	Jamaica Plain	16%	5%
	Eliot Street	Local/Collector	Jamaica Plain	194%	-8%
	Boylston Street	Local/Collector	Jamaica Plain	105%	3%
	Poplar Street	Local/Collector	Roslindale	40%	16%
	Green Street	Local/Collector	Jamaica Plain	38%	-9%
	Seaverns Avenue	Local/Collector	Jamaica Plain	20%	-5%
CONTROL STREETS	D St west of West Broadway	Local/Collector	South Boston	35%	-3%
	Quincy St west of Ceylon St	Local/Collector	Roxbury	2%	6%
	Franklin Street north of Alcott Street	Local/Collector	Allston	-17%	15%
	Beacon St west of Charles St	Arterial 1-way	Beacon Hill	30%	8%
	Charles Street north of Revere Street	Arterial 1-way	Beacon Hill	2%	-13%
	Tremont Street north of Boylston Street	Arterial 1-way	Downtown	-1%	-6%
	Charles St north of Boylston St	Arterial 1-way	Downtown	-3%	12%
	Beacon Street west of Dartmouth Street	Arterial 1-way	Back Bay	-16%	-19%
	Washington St north of Bexley Rd	Arterial 2-way	Roslindale	25%	-3%
	Harvard Avenue north of Comm. Ave	Arterial 2-way	Allston	6%	6%
	Belgrade Ave east of Anawan St	Arterial 2-way	Roslindale	-1%	-7%
	Longwood Ave east of Pilgrim Rd	Arterial 2-way	Longwood	-2%	1%
	North Harvard St south of Soldiers Field Rd	Arterial 2-way	Allston	-5%	9%
	Columbus Ave west of Mass Ave	Arterial 2-way	South End	-21%	1%
	Centre St north of Harris Ave	Arterial 2-way	Jamaica Plain	-22%	-8%
	AVERAGE OF ALL PROJECT STREETS	-	-	44%	1%
	AVERAGE OF ALL CONTROL STREETS	-	-	-3%	0.3%

NEXT STEPS

- Develop public-facing content utilizing this dataset to tell the story of the first set of Better Bike Lanes projects and encourage support of future projects.
- We build a lot of Better Bike Lanes projects in 2024 not covered by this analysis!
  - Collect and analyze data in Fall 2025 for all projects installed to-date, including 2023 and 2024 projects.
  - Continue follow up in 2026.

THANK YOU

Questions?
better-bike-lanes@boston.gov