Healthy Ride Bike Share Survey Results

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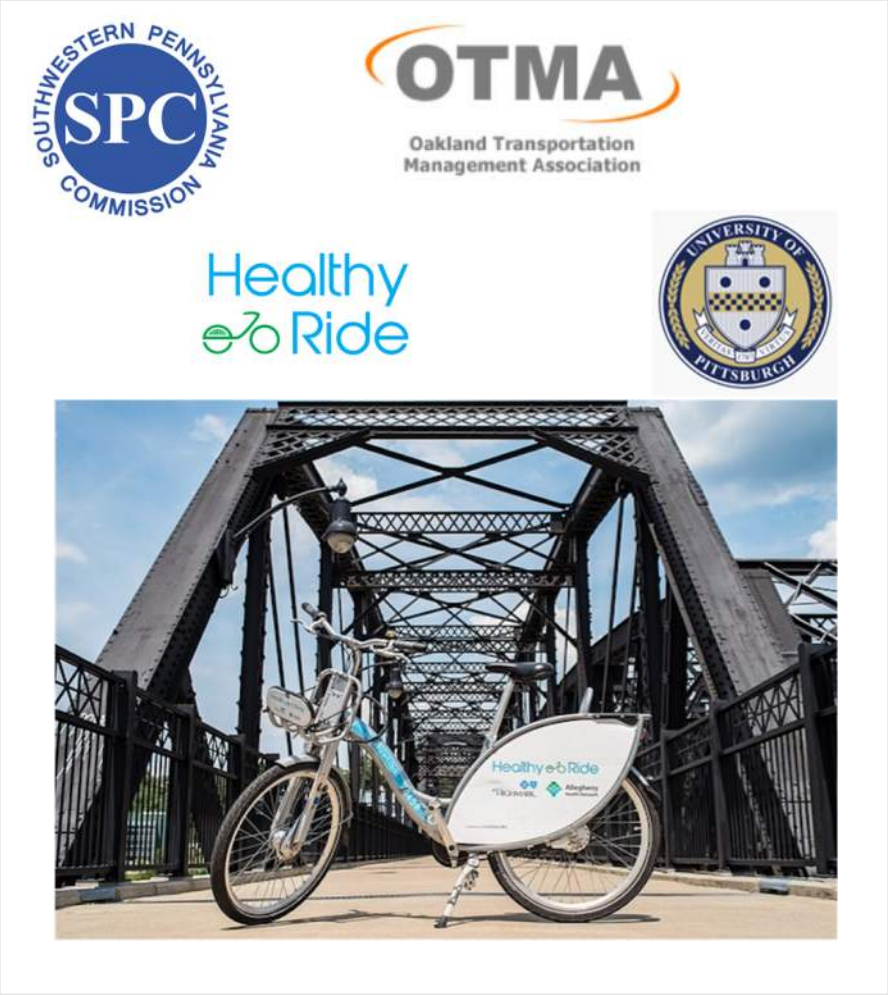


Organizations involved

- Healthy Ride System (HRS)
- Southwestern Pennsylvania Commission (SPC)
- Oakland Transportation Management Association (OTMA)
- University of Pittsburgh

Research Goal

- Determine the sustainable transportation benefits of the bike share system established in the Pittsburgh region, the Healthy Ride System (HRS)
- This presentation will focus on three major points:
- Mode Shifts
- Emission Reduction Potential
- Economic Impacts

Research Workplan

Overview

- Literature Review
- Survey Methodology
- Survey Results
- Travel Habits & Demographics
- Key Findings & Conclusion

Literature Review

- Increasing demand for alternative transportation due to climate change and environmental concerns
- Primary mode switch biking/walking/transit -> bikeshare
- Ideally, we would like to see more personal vehicle -> bikeshare

Literature Review

- There is potential for linkage between bikeshare systems and public transportation by strategically placing stations near transit stops
- Air quality and other environmental monitoring is better evaluated at the local level rather than at the regional level
- There is not a lot of data of the long-term economic benefits but bikeshare systems seem to encourage local business and economic activity.

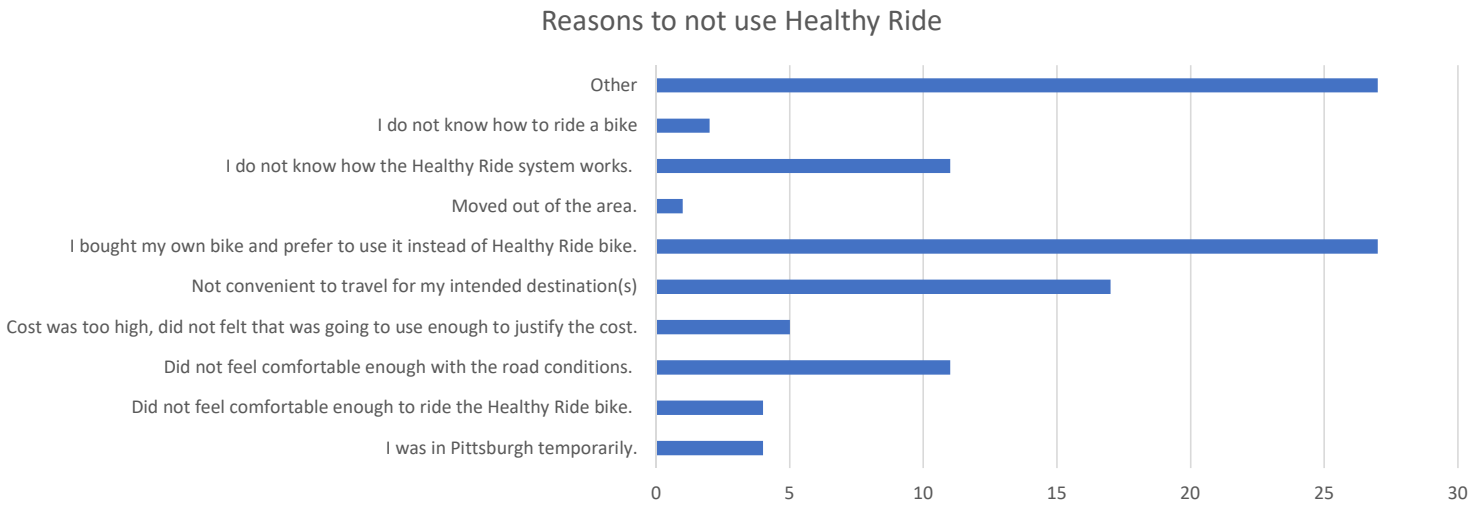
Healthy Ride Survey Methodology

- April 30, 2016 – August 22, 2016
- Emailed to all Healthy Ride Users
- Posted on Healthy Ride Website
- Available on Healthy Ride Facebook page

Survey Results

- 22,602 active Healthy Ride users
- 13,640 inactive Healthy Ride users
- 443 respondents for the active users
- 295 are considered valid responses
- 109 respondents for the inactive users

How about the ones not using HRS?



- 109 inactive users responded a second survey sent

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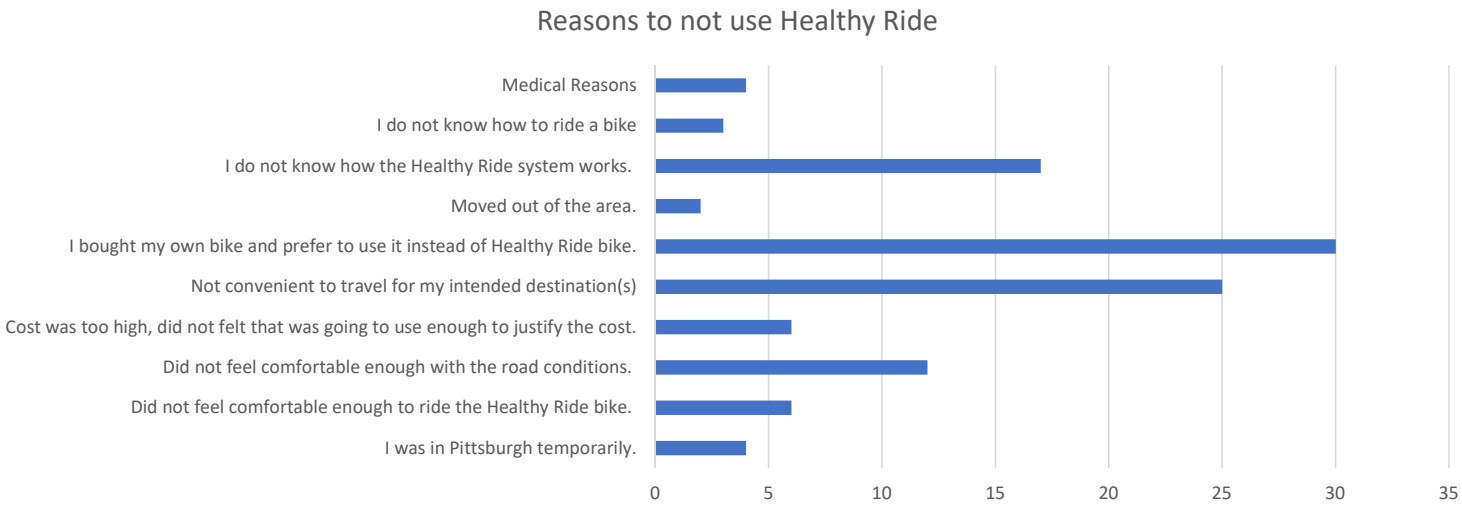

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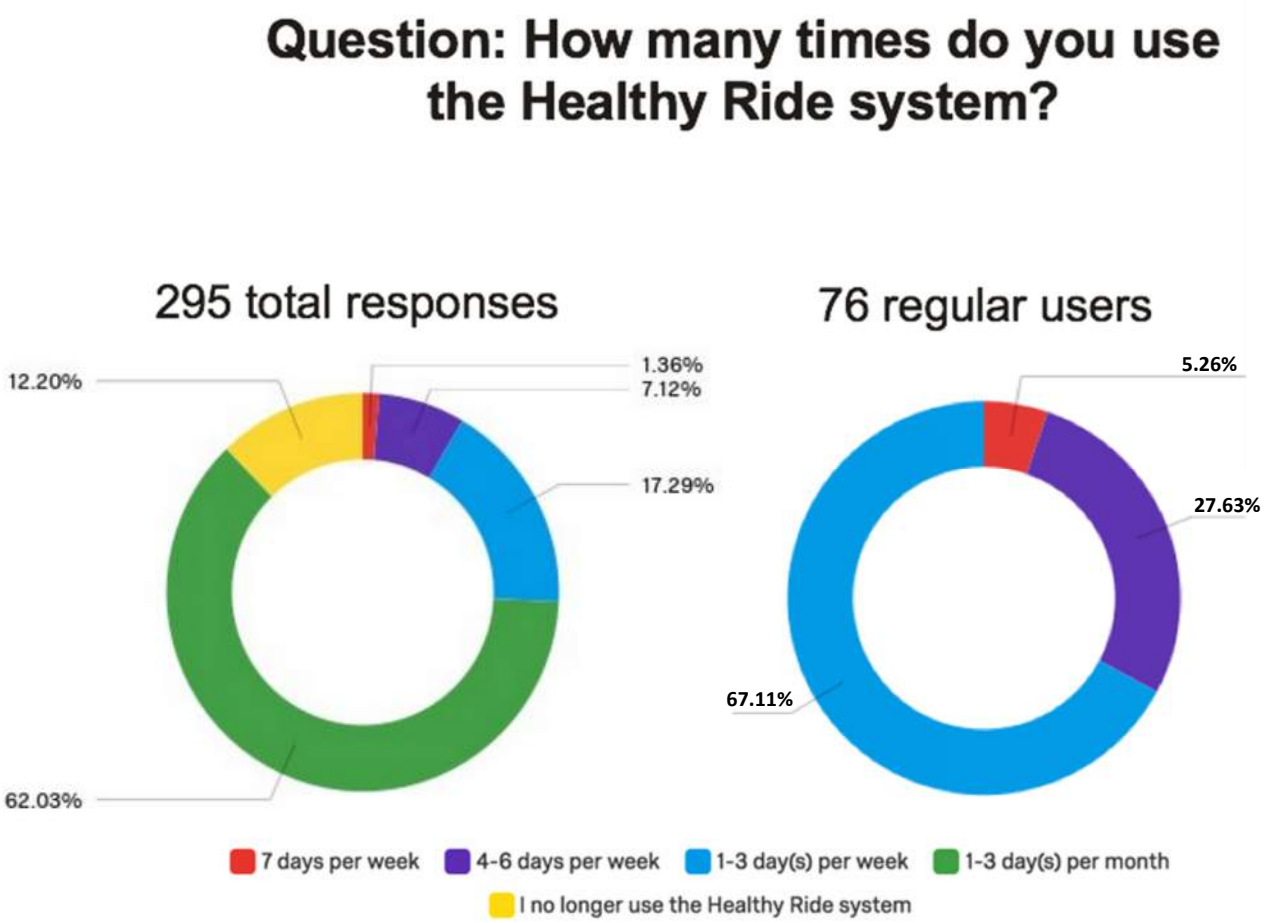
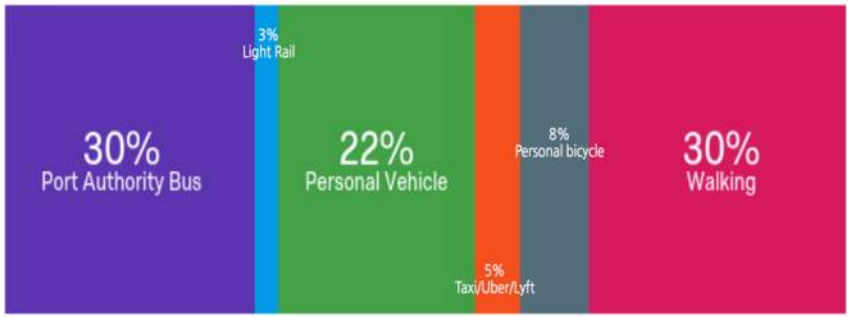
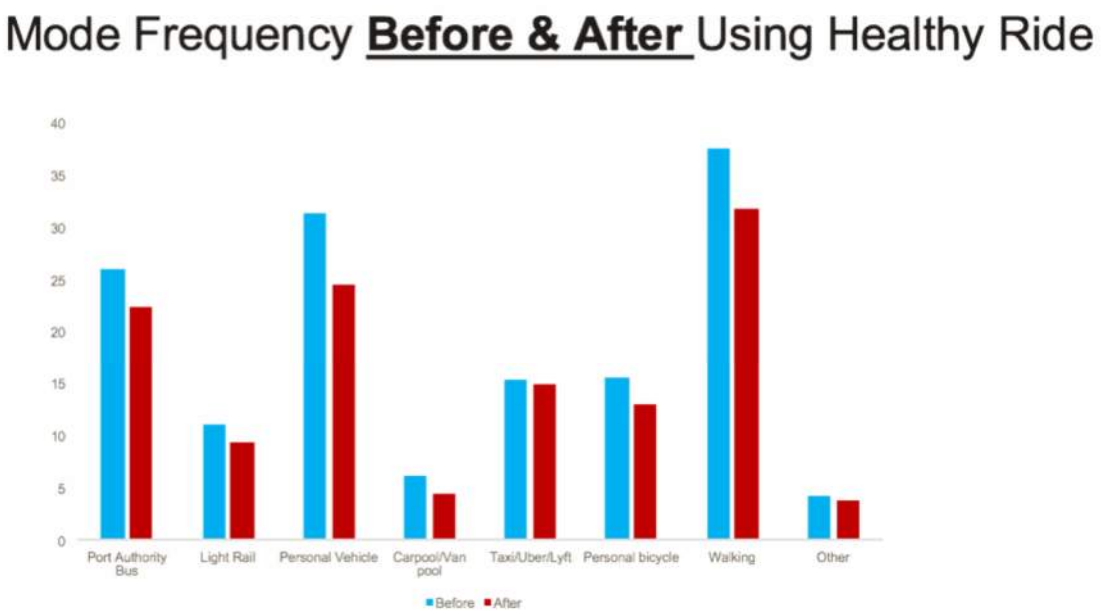
Target Group



Question: What is the primary method of travel that your usual Healthy Ride trip replaces?

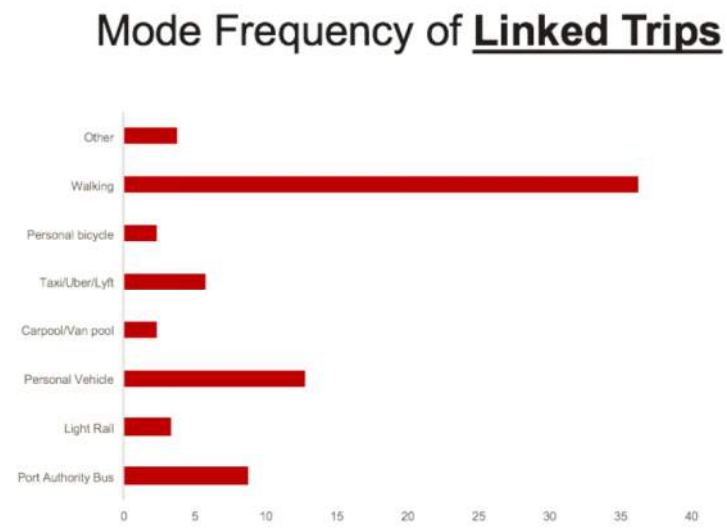


Mode Shift



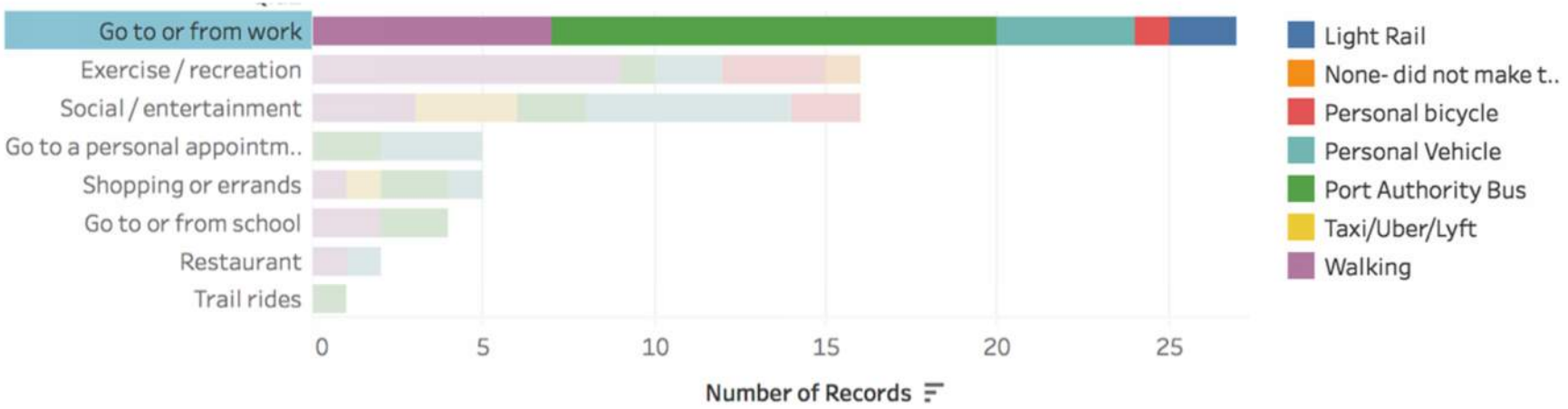
(a) According to the survey, users depended on other modes of travel less after switching to Healthy Ride.

Mode Shift



(b) Walking is the most common mode of travel used in conjunction with the Healthy Ride system.

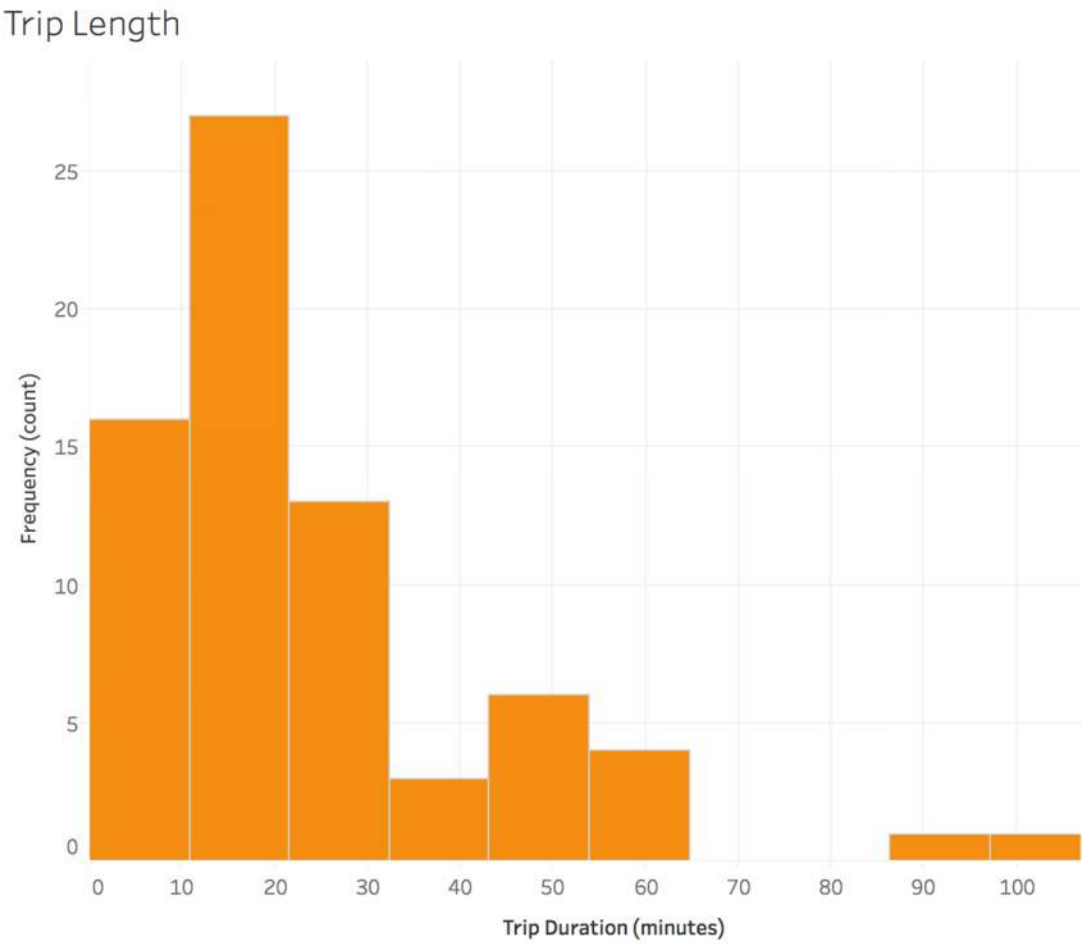
Travel Patterns

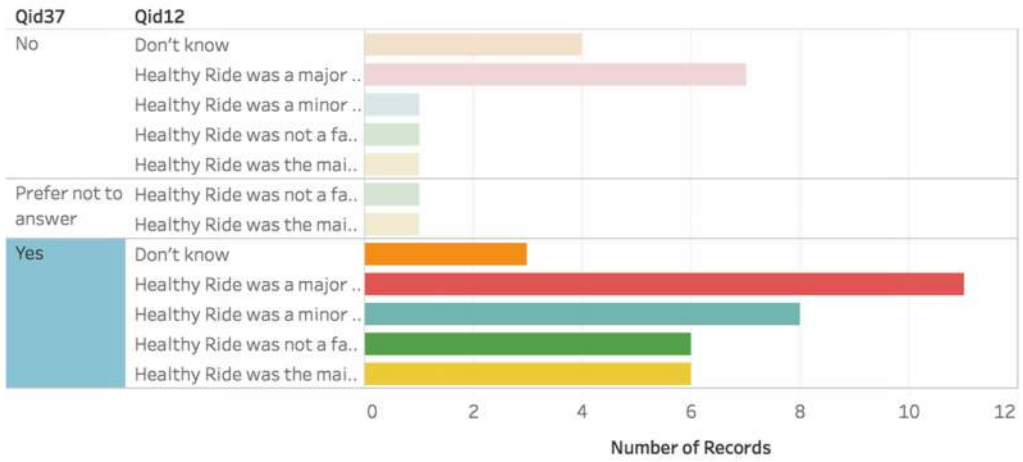


Primary **purpose**, primary **day**, and **mode** most frequently replaced

Vehicle Mile Reduction

- We can use the average trip length to help determine reduction in CO2 emissions in future studies.
- According to the survey, frequent riders spend an average of 25 minutes on the Healthy Ride bike per use.





- Of the people that DO own vehicles, and DID reduce driving miles, how much of it is due to Healthy Ride?
- Majority say Healthy Ride is a major factor.

Vehicle Mile Reduction

VMT

Table 1 Frequent Users Mode Shift from Transit/Auto to HRS Travel Characteristics

Frequent users	Number in survey		Avg	Total	Avg trip time	Avg distance 15mph	Personal VMT weekly
	(#)	(%)	(trips/week)	(trips/week)	(minutes/trip)	(miles/trip)	(miles/week)
Transit to HRS	23	30.26%	3.2	73.6	22.73	5.6825	418.232
Auto to HRS	17	22.37%	2.7	45.9	19.53	4.8825	224.10675

Table 2 All Users Mode Shift from Transit/Auto to HRS Travel Characteristics

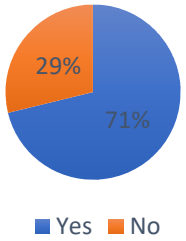
All users	Number in survey		Avg	Total	Avg trip time	Avg distance 15mph	Personal VMT weekly
	(#)	(%)	(trips/week)	(trips/week)	(minutes/trip)	(miles/trip)	(miles/week)
Transit to HRS	57	19.32%	1.47	83.79	24.75	6.1875	518.450625
Auto to HRS	66	22.37%	0.96	63.36	33.91	8.4775	537.1344

Summary of mode shift

- In summary the travel characteristics of frequent HRS users revealed important information that can be used to determine the benefits to the transportation system. Frequent users replaced transit, walking and auto trips with bicycle trips. The largest shift came from transit usage although over 20% shifted from the auto mode. Significant personal shift in VMT was also reported from both transit and private auto modes users.

Economic Benefits

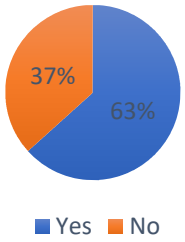
Do you eat while using Healthy Ride?



- 198 of 278 reported spend on meals while using Healthy Ride.
- 133 reported values.
- In a range between $4 - $500, we found an average of $19.83 spent.

- 176 of 278 reported shopping while using Healthy Ride.
- 117 reported the number of stores visited in their trip (Ranging from 1 to 10).
- In a range between $2 - $500 spent, we found an average of $15.57 per shopping trip.

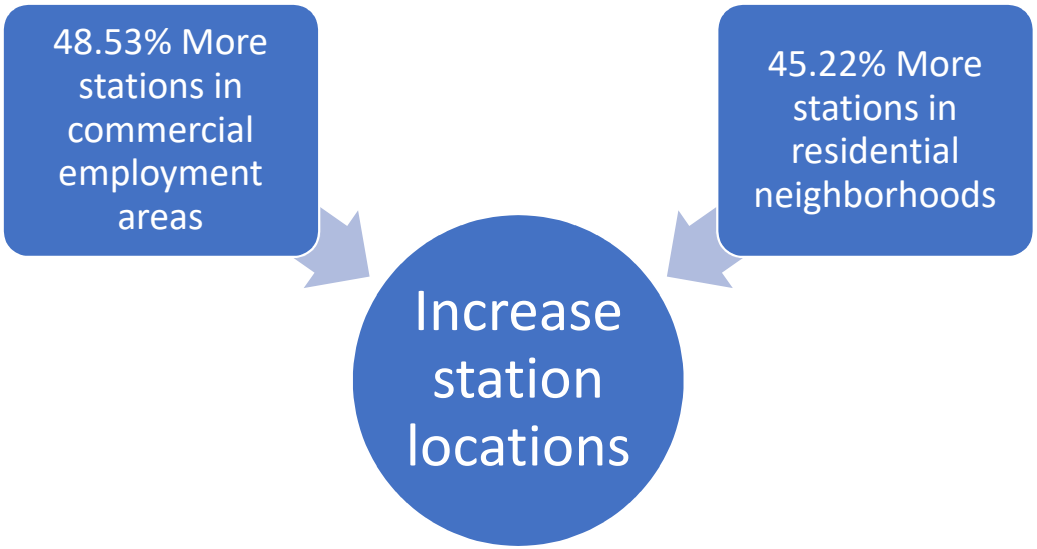
Do you shop while using Healthy Ride?



Demographics

45.19%	47.48%	83.33%	84.07%	42.61%	77.78%
Age: 25-34 years old	Minimum education Bachelor degree	Non-students	Full time employees	Income greater than $75,000	Own vehicles

How to Improve user experience



Recommendation from users

Key Findings

- Specific travel characteristic data essential to determine the potential impact of the HRS system on transportation conditions the City of Pittsburgh was collected.
- Survey data coupled with future GPS tracking information could result in the validation of a methodology that would be the **direct measure** of emission levels in specific locations where bike share usage is significant.
- Future research efforts will determine the air quality impacts.

Acknowledgements

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Thank you

Questions?

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