

# Tracking Ped/Bike Trips Through Innovative Counting Techniques



**ITE District 1 Annual Meeting**

Portland, Maine

March 20, 2010

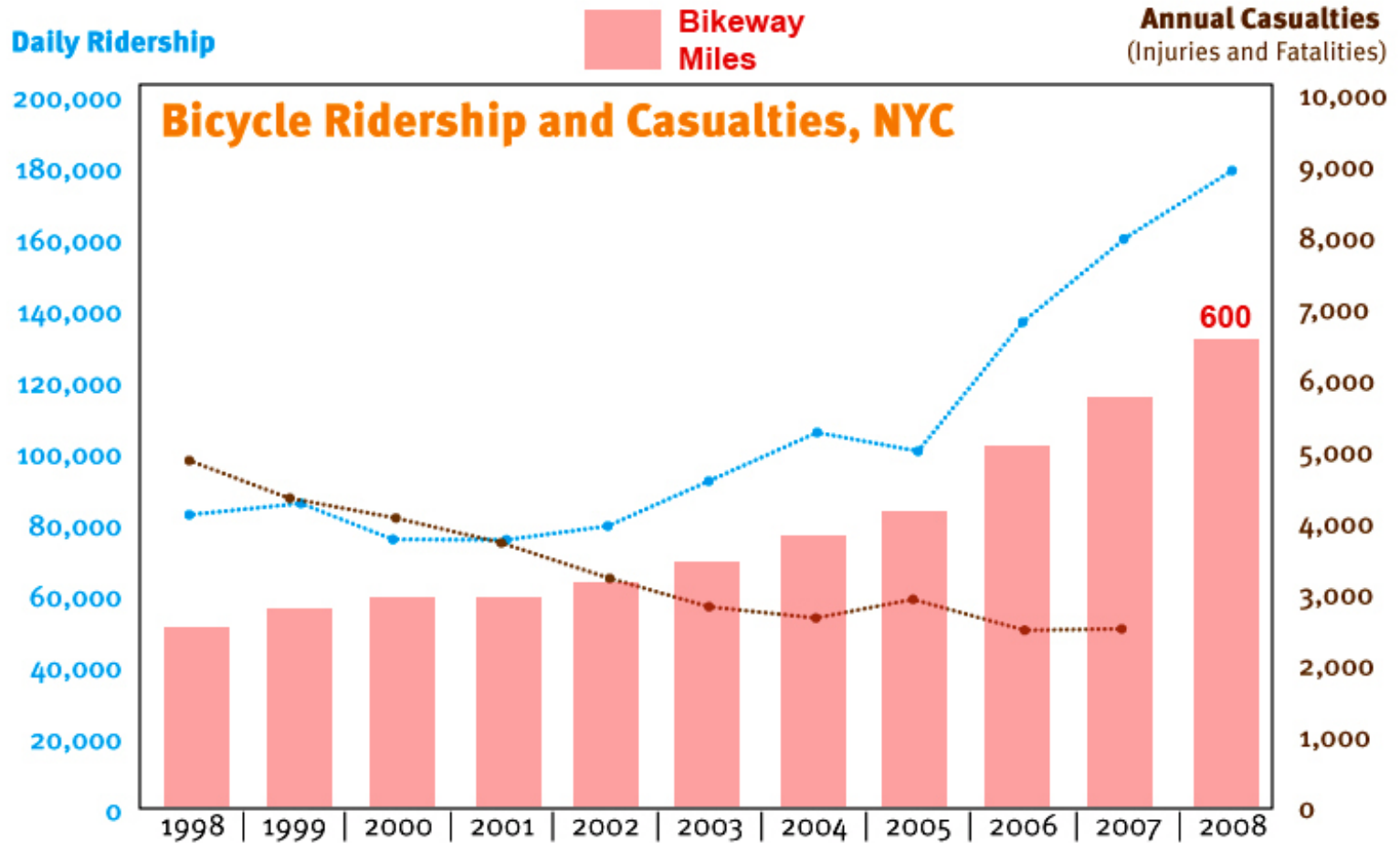


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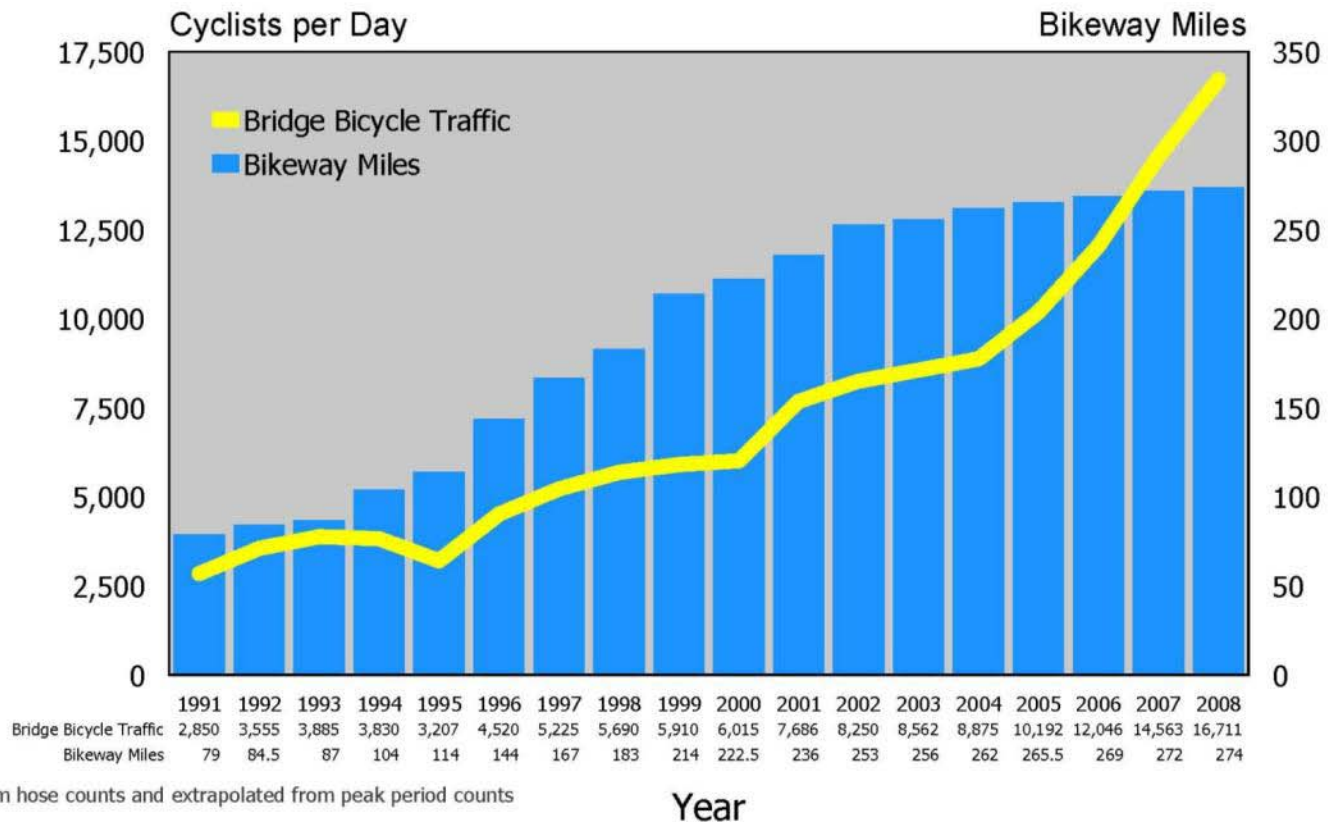
# Biking and Walking are up



New York City

# Biking and Walking are up

## Combined Bicycle Traffic over Four Main Portland Bicycle Bridges Juxtaposed with Bikeway Miles



# Portland OR

# Why Conduct Screenline Counts?

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- Create a baseline of the number of peds/bikes
- Better understand needs
- Understand what influences biking and walking
- Help make the case for more project funding
- Support Bicycle and Pedestrian Documentation Project ([www.bikepeddocumentation.org/](http://www.bikepeddocumentation.org/))

# National Bike and Pedestrian Documentation (NBPD) Project

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- A pro bono effort by Alta Planning + Design with support from ITE and the Rails to Trails Conservancy
- Annual bicycle and pedestrian count and survey effort
- Build a data set (similar to auto traffic counts)
- Objectives
  - Consistent data collection
  - Shared research
- Success: counts from over 500 locations in 60 communities



# What the NBPD is trying to determine throughout the U.S.

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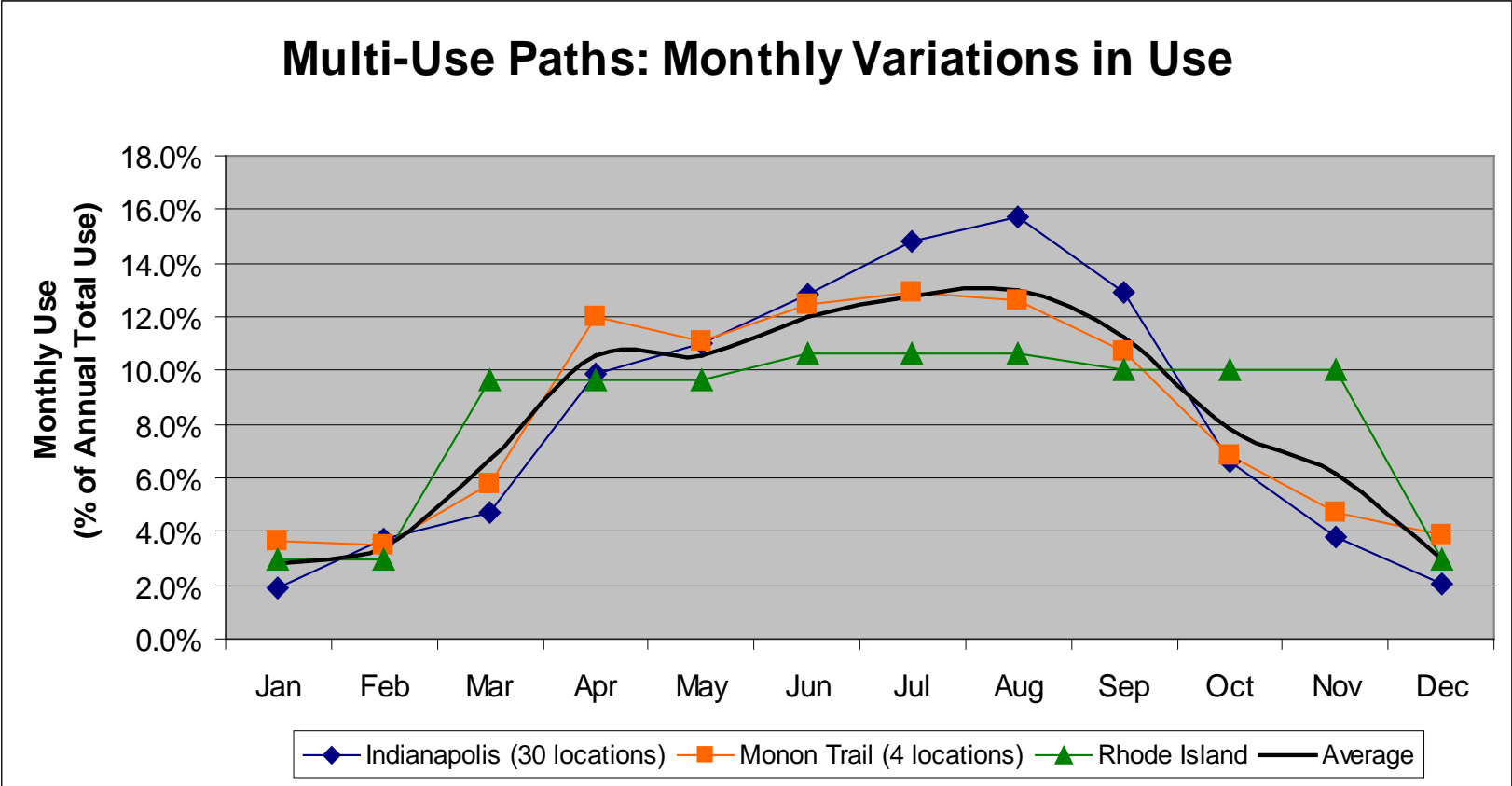
- How many cyclists ride in the city per day? What are the total miles traveled?
- Changes in walking/bicycling levels over time
- Greenhouse gas emissions averted
- Desired routes for pedestrians and cyclists
- Distribution of trips over the course of the day, week and year
- Number of cyclists during peak times
- Correlation with special events
- Demographics of cyclists

# Manual vs. Automatic Counts

- Count Effort Budget
  - Manual count person hours vs. cost of count machines
- Duration of Count Effort
  - Quarterly, bi-annual, yearly
  - Year long
- Type of data
  - Volume
  - Gender
  - Behavior, i.e., helmet use, wrong-way riding

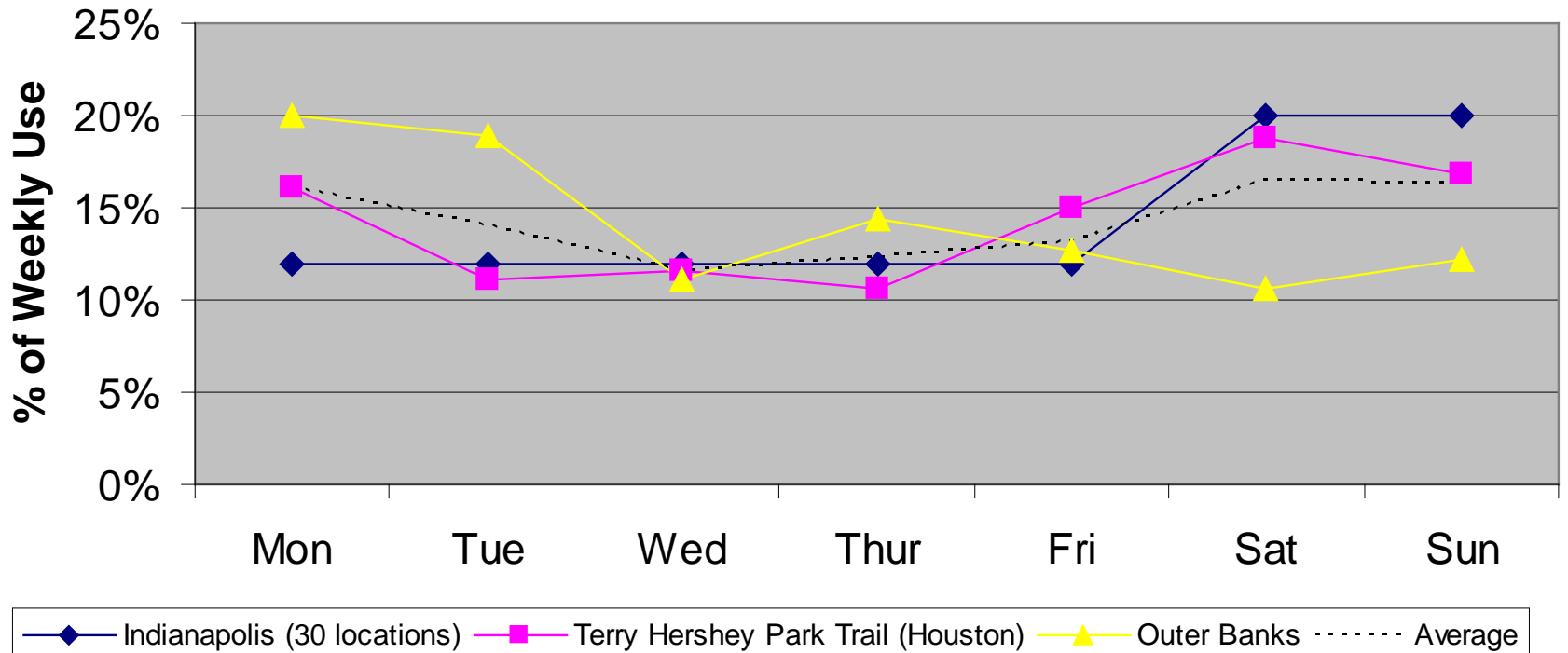


# Monthly Variations (east coast)



# Daily Variations

## Multi-Use Paths: Daily Variations in Use



# Screenline Count



— — — — — Screenline

- Count EVERYONE who passes
- does not include any turning movements

# Data Input

- By gender

- 15 minute intervals

- People on **Bicycles**

- **Pedestrians** - including wheelchairs

- **Others** - skateboarders & rollerbladers

- Anybody passing the **screenline** (from both directions)

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold). Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count for two hours in 15 minute increments.
- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or rollerblades should be included in the "Other" category.

	Bicycles		Pedestrians		Others
	Female	Male	Female	Male	
00-:15					
15-:30					
30-:45					
45-1:00					

# Count people not vehicles



**5!**



**4!**

# Cambridge Bike Counts

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# Cambridge Measures...

## Changes in bicycling levels over time by tracking:

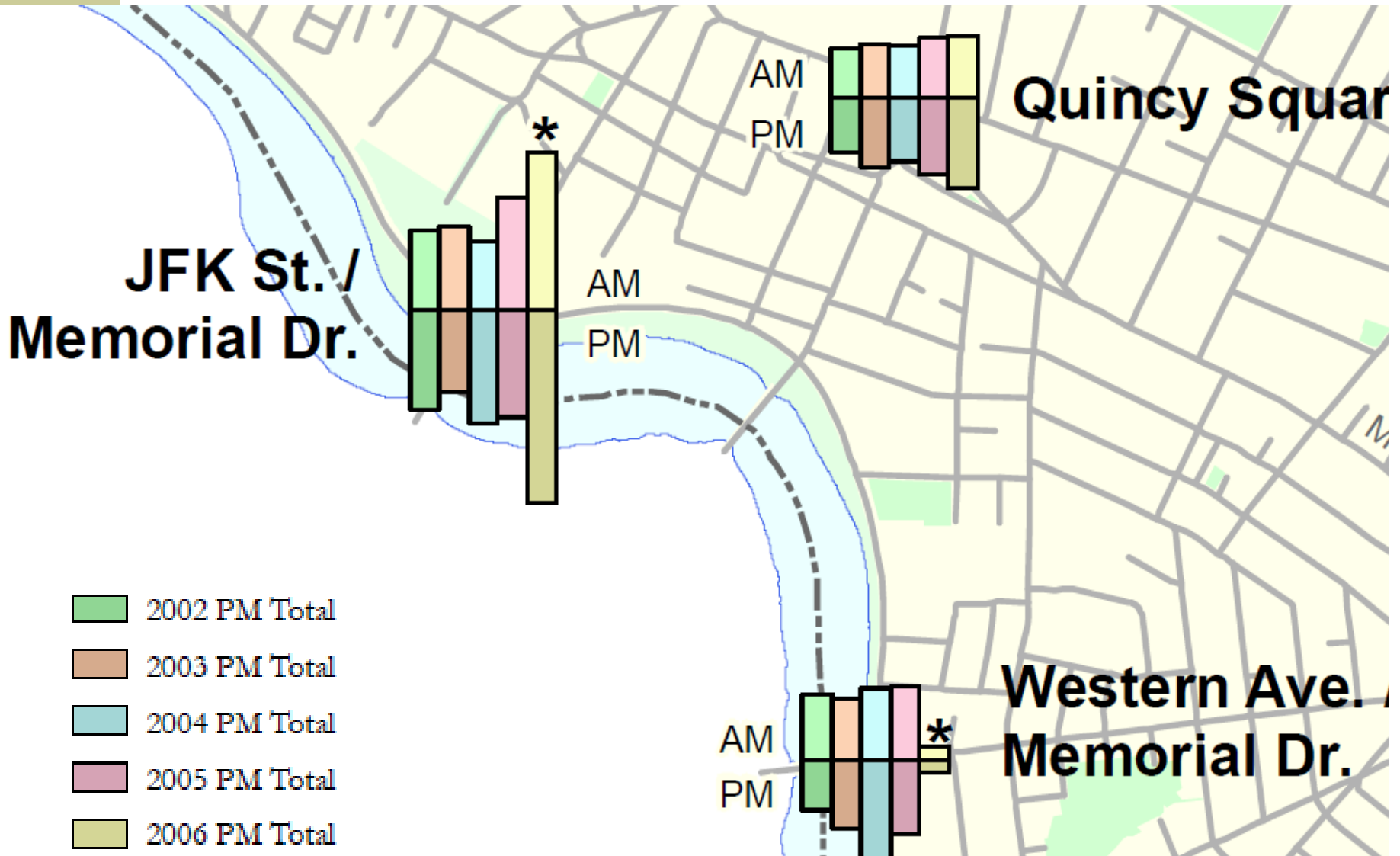
- Annual counts at peak
- During warm, dry weather
- Both AM and PM peak
- 16 Locations throughout city
- Behavioral data (helmet use, wrong-way riding, etc.)
- Turning movements at key locations



# Presenting the Data

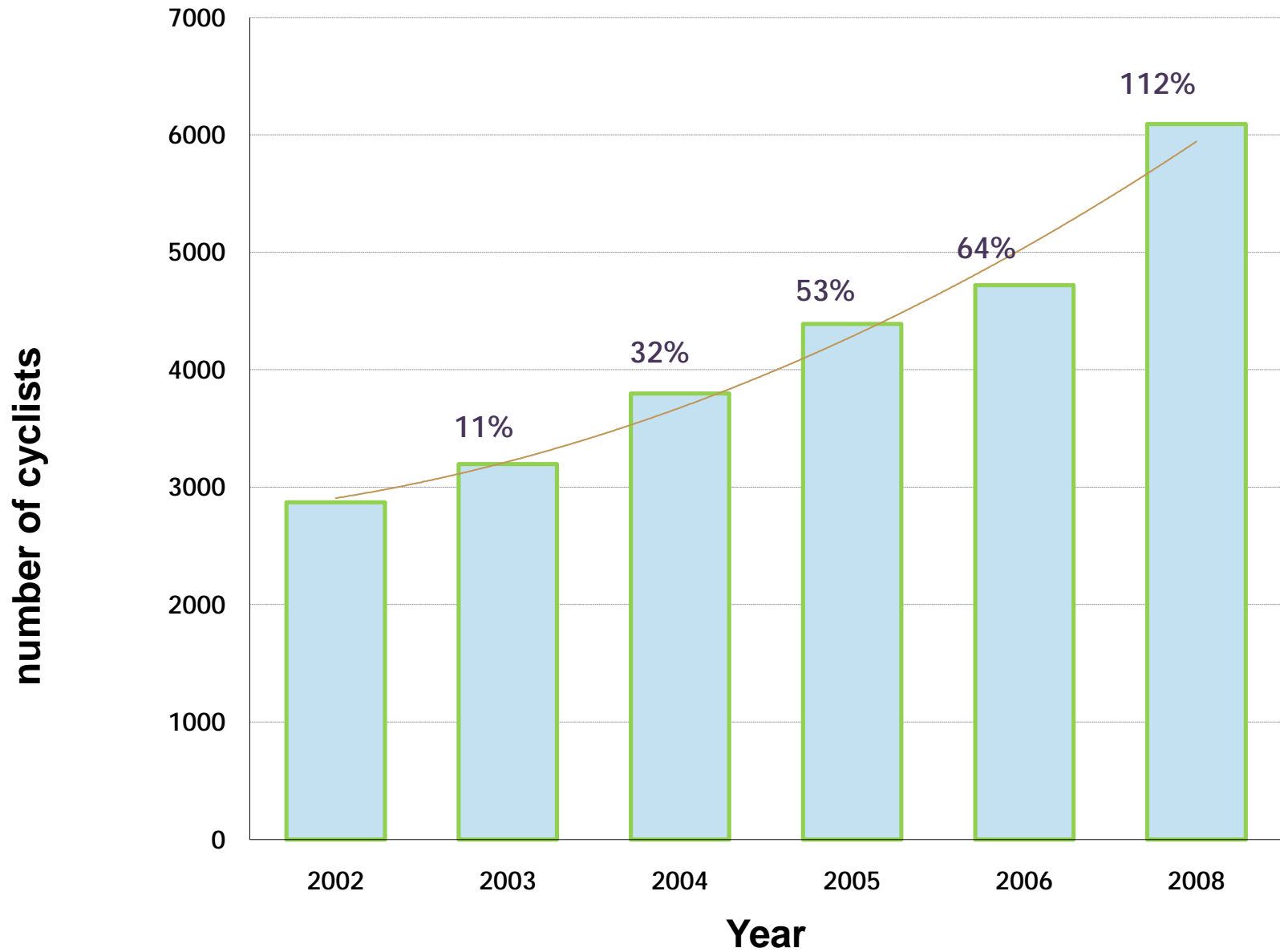


# Presenting the Data





# Combined AM+PM 2 Hour



# Charles River Count



# Charles River Count

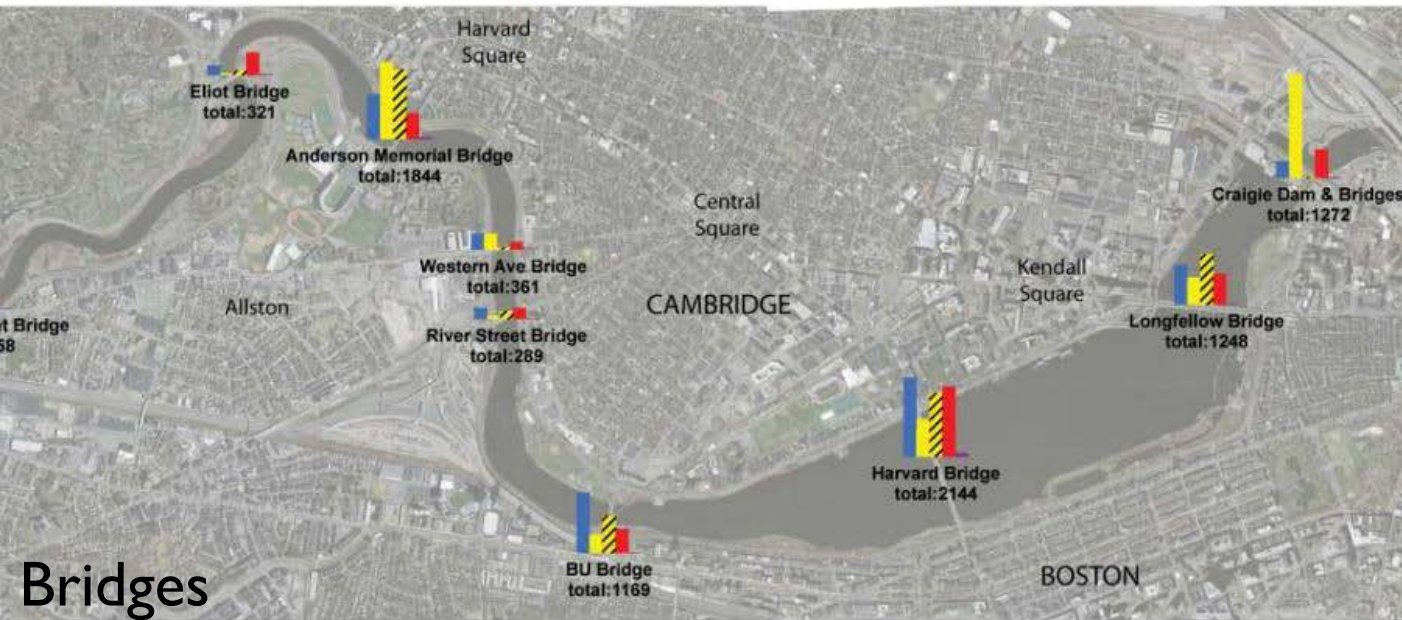


## Charles River Basin Non-Motorized User Count

Alta Planning + Design

Wednesday September 23, 2009 4:30 - 6:30 pm (slightly overcast skies, low 70's)

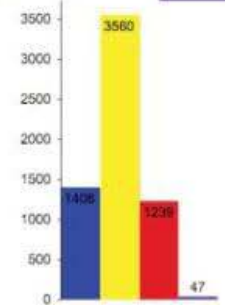
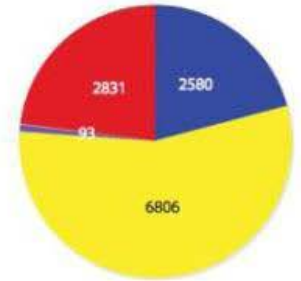
Site Locations	Site #	F. Bicyclists	M. Bicyclists	F. Upriver Peds	M. Upriver Peds	F. Downriver Peds	M. Downriver Peds	F. Joggers	M. Joggers	Other	Totals
Craigie Dam & Bridges	1	33	106	465	412	3	7	111	129	6	1272
Longfellow Bridge	2	113	221	102	126	208	216	95	165	2	1248
Charles Street Pedestrian Overpass	3	38	73	254	270			151	171	24	981
Arthur Fielder Footbridge	4	38	133	179	153			58	95	9	665
Ames Street Crosswalk	5	5	16	32	54			7	13	0	127
Lower Basin North Bank	6	34	80	144	154			246	325	35	1018
Lower Basin South Bank	7	117	319	219	163			351	459	38	1666
Harvard Bridge	8	183	486	127	189	257	281	280	312	29	2144
BU Bridge	9	187	323	82	62	157	153	101	100	4	1169
River Street Bridge	10	26	70	11	17	33	35	38	57	2	289
Western Ave Bridge	11	46	94	67	69	6	11	24	43	1	361
Dewolf Street Crosswalk	12	52	83	133	202			74	81	0	625
Weeks Pedestrian Bridge	13	2	5	146	195			46	46	0	440
Anderson Memorial Bridge	14	118	259	225	425	264	323	106	113	11	1844
Hawthorne Street Crosswalk	15	20	42	14	7			17	24	0	124
Middle Basin North Bank	16	30	75	34	24			90	123	1	377
Eliot Bridge	17	23	59	7	5	19	13	95	96	4	321
Middle Basin South Bank	18	42	117	12	10			32	31	3	247
Upper Basin North Bank	19	33	88	17	20			74	18	2	252
Arsenal Street Bridge	20	22	89	7	14	18	13	71	22	2	258
Upper Basin South Bank	21	24	87	31	17			21	11	3	194
North Beacon Street Bridge	22	19	66	16	11	21	17	22	22	1	195
Brooks Street Crosswalk	23	2	25	16	10			28	4	1	86
<b>Totals</b>		<b>1207</b>	<b>2916</b>	<b>2340</b>	<b>2609</b>	<b>986</b>	<b>1069</b>	<b>2138</b>	<b>2460</b>	<b>178</b>	<b>15903</b>



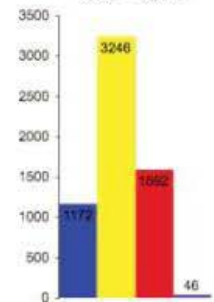
### Non-Motorized User Counts

Wednesday 9/23/09 4:30 - 6:30 PM

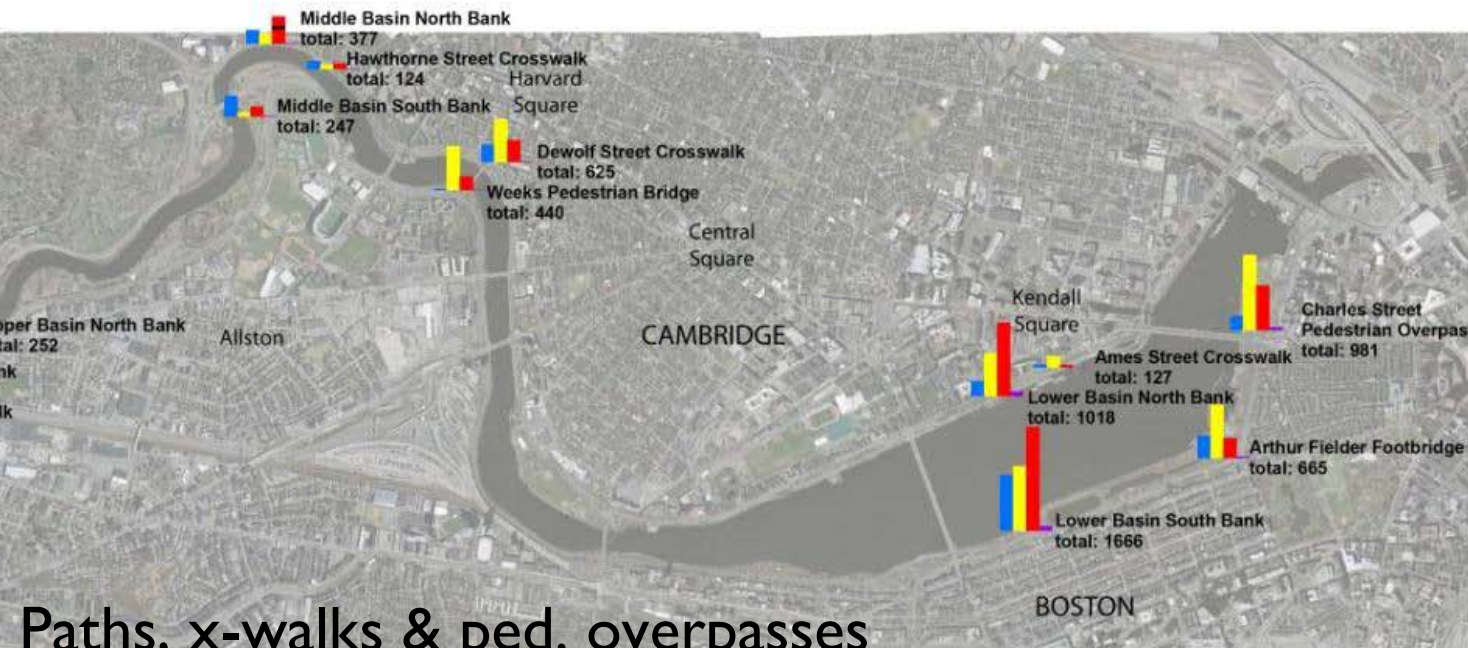
**Total Count = 15,903**



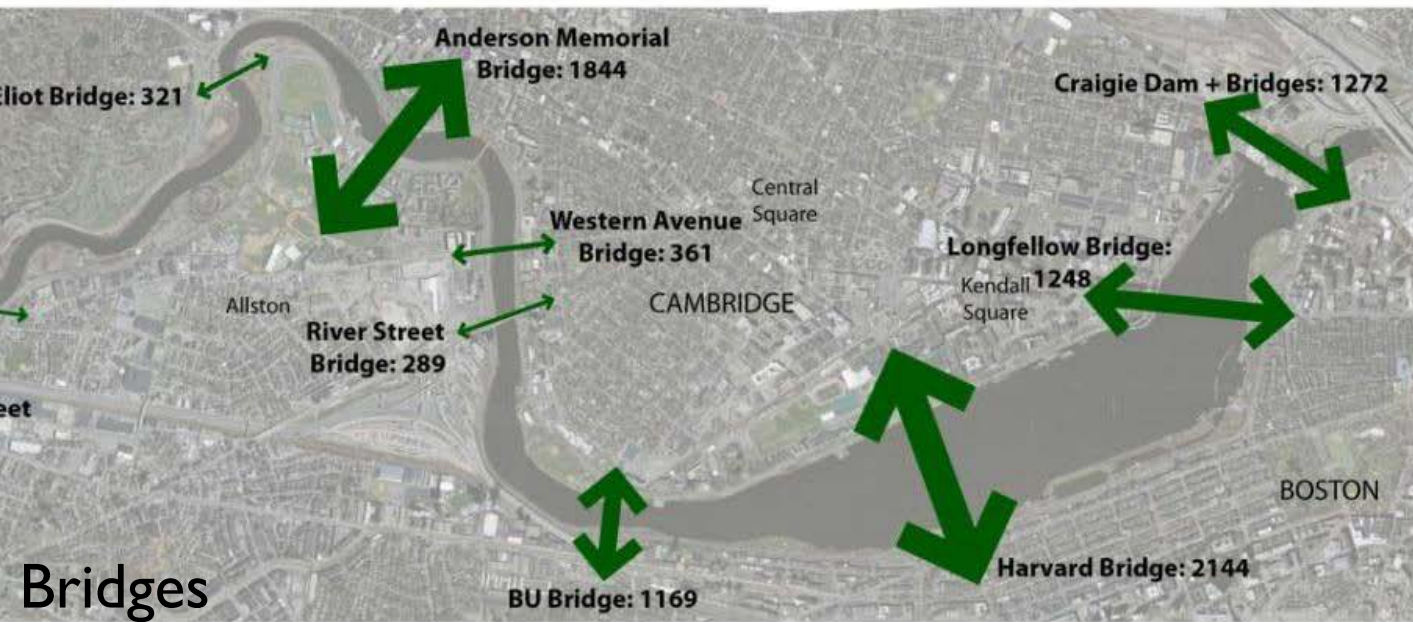
**Vehicular Bridges Total = 6,254**



**Paths, Crosswalks, Bike/Ped Bridges Total = 6,056**



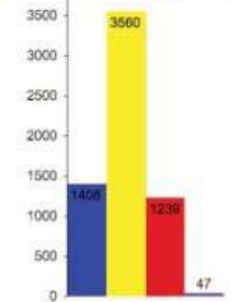
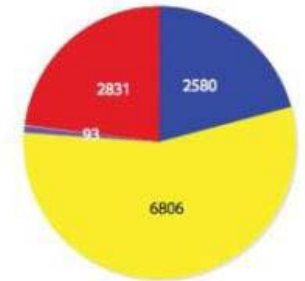
Paths, x-walks & ped. overpasses



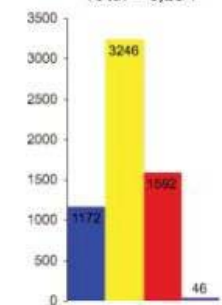
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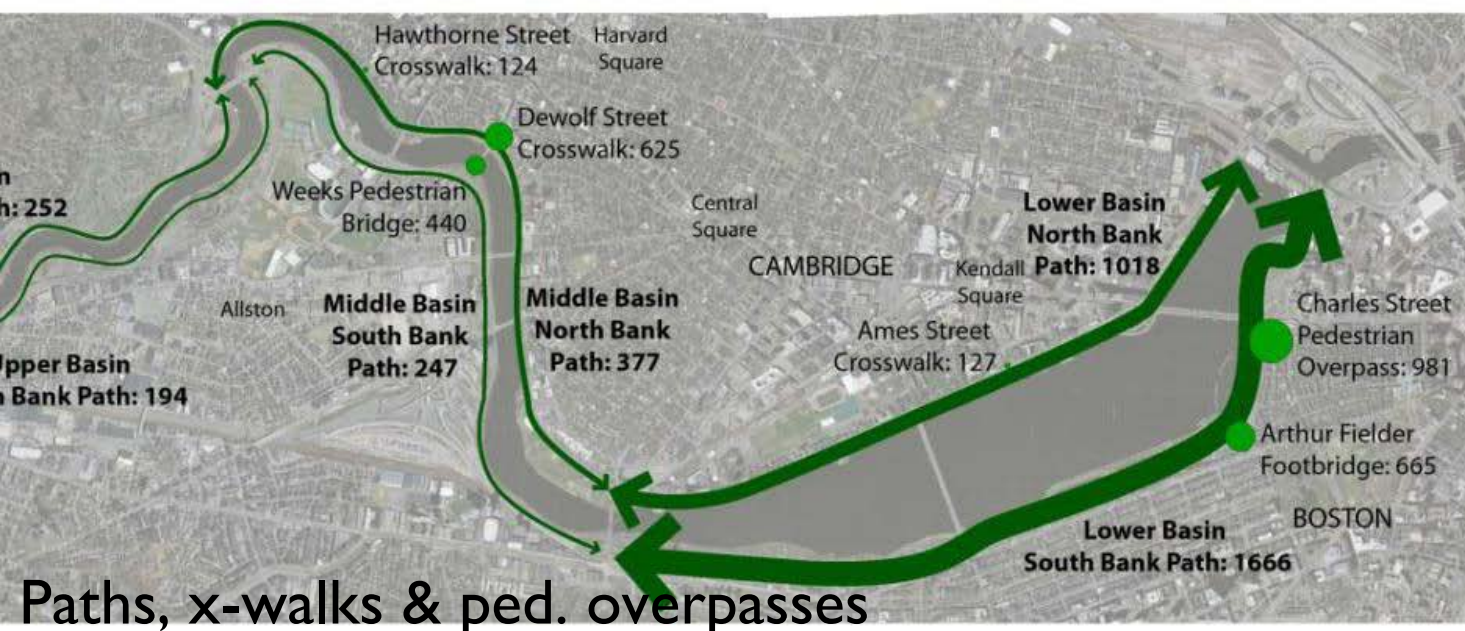
Total Count = 15,903



Vehicular Bridges Total = 6,254



Paths, Crosswalks, Bike/Ped Bridges Total = 6,056



# CRB Count Conclusions

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- Use of the system during peaks is enormous and well used for commuting (not just recreation)
  - 16,000 non-motorized users during Wed PM peak
  - 12,000 non-motorized users during weekends
- Connections to contiguous facilities are critical
  - Number of cyclists drops significantly when bridge facilities do not connect to bike lanes or paths
  - Busy intersections that are poorly designed keep walkers and cyclists away
- Men and women use the system equally on foot or running but use by male cyclists is 2.5X higher

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