Route 52 Bridge Replacement

Shared Use Path & Automated Count Program

Ocean City, NJ

Eco-Counter

Route 52 Bridge Replacement

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In the summer of 2006, NJDOT began the first part of its **$400 million** project to replace the Route 52 Causeway bridges between Somers Point and Ocean City:

- **Completed in 2012**

- 2 fixed and 2 moveable bridges were replaced by 2 high fixed-span bridges

- **Ocean City Visitors Center** was reconstructed as part of the new Scenic Overlook

  » *Other amenities included boat ramps, fishing piers, parking lots and walkways*

- **A 10-foot wide paved shared use path** extends the full length of the project

  » *A walkway connects the Visitors Center and fishing areas along the bridge to other bicycle and pedestrian facilities in Somers Point and Ocean City*

- New bridge has **10-foot wide shoulders**

Shared Use Path Facility

Shared Use Path Facility

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Shared Use Path Facility

Trail User Comments

- I love the new path

- I like exercising here more than the boardwalk

- It's beautiful with amazing views of the bay

- Please install more trash cans

- Provide water fountains at both ends of the path

- Remove sand on the bridge, and fix expansion joint

- Some confusion that bikes belong on the Shared Use Path

- During peak usage periods, the path can get crowded

Automated Count Program

- Measure the success of the new path

- Compare usage to other trails

- Demonstrate value of the investment

ECO Multi-Counter

Installation Location

VISITORS CENTER

ROUTE 52

Eco-Counter

OCEAN CITY

Installation on 7/24
by NJDOT Electrical,
Southern Region

ECO Multi-Counter

- Counts are bidirectional and distinguish between bicyclists and pedestrians

Counting Pedestrians - Heat Signature

Pyroelectric Sensor

accuracy +/- 5% | ultra strong | waterproof IP 68 | 2-year memory | in / out | eco-visio | no maintenance | 15 min | 10 years | GSM

How it Works ?

The **PYRO** sensor uses a combination of passive infrared pyroelectric technology and a high precision lens to detect a change in the detected temperature when a person passes in the range of the sensor. Thanks to its extremely high sensitivity, the sensor can detect two different people with only a small gap between them. The sensor is self-calibrating for simple installation.

Technical Characteristics

Valuable trends over time
Pedestrian and fast bicycle detection
Bidirectional detection
Non-intrusive technology
No permission needed for installation
No maintenance
High autonomy: 10 year battery life
2 year data storage
Waterproof
Range up to 15m / 50'
Hourly or 15 min. recording intervals

**PYRO Sensor -
Passive Infrared detection**

Counting Bicycles - ZELT Loops / Heat Signature

ZELT inductive loops

invisible | accuracy +/- 5% | ultra strong | IP 68 waterproof | 2-year memory | in / out | eco-visio | no maintenance | 15 min | 2 years | GSM

How does it Work ?

Permanent or Semi-permanent
> 6 months

Eco-Counter's unique and patented ZELT Inductive Loop technology has been continually improved by our Research and Development Team for over 5 years. The ZELT loop precisely analyzes the electromagnetic signature of each bicycle wheel, with 13 differentiation criteria. Its unique algorithm allows an extreme precision in any configuration (shared road, bicycle boulevard, etc.)

ZELT loop analyzes the electromagnetic signature of each bicycle wheel

Calibration

- Software calibration can correct for counting errors

- Compared Eco-Counter results to manual counts

  » *Eco-Counter unit under-counted both bikes and pedestrians*

Heat Signature Masking

- Groups under-counted
  when passing counter side
  by side

Non-detectable bike materials

- Observed as pedestrians

Results through September 1st   *» 40 days*

- **Total Count - 58,000**
  - *» 37,800 pedestrians / 23,200 cyclists* ....→

  ~ 60%   **40%**

- **Average Daily Trail Volume - 1,457**
  - *» Average weekday - 1,364*
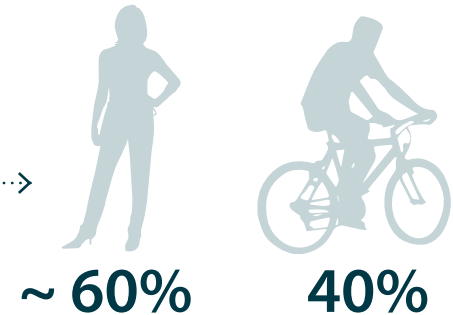 - *» Average weekend day - 1,673*

- **Almost half** (nearly 48%) of daily usage was **between 8am and noon**

- **Weather** significantly affects the average usage
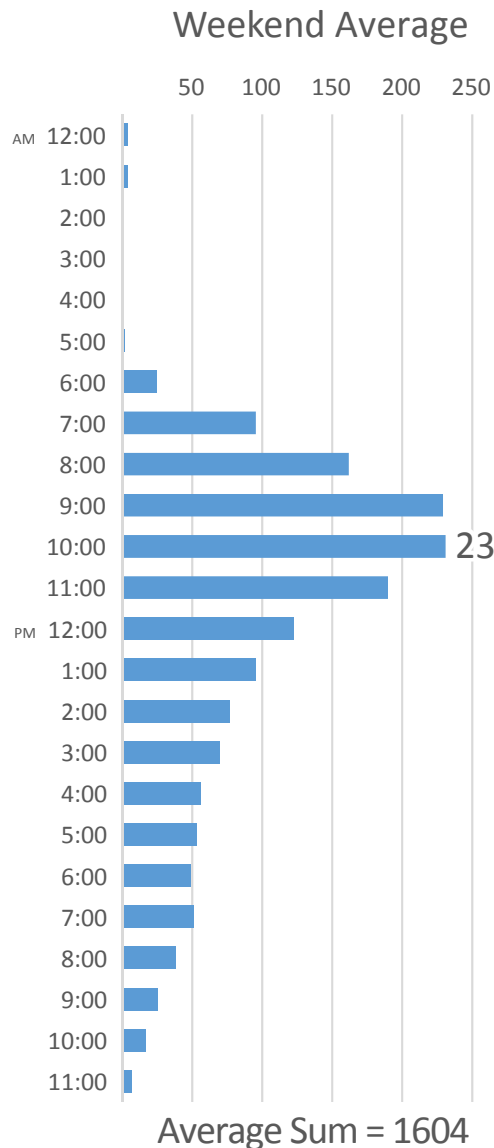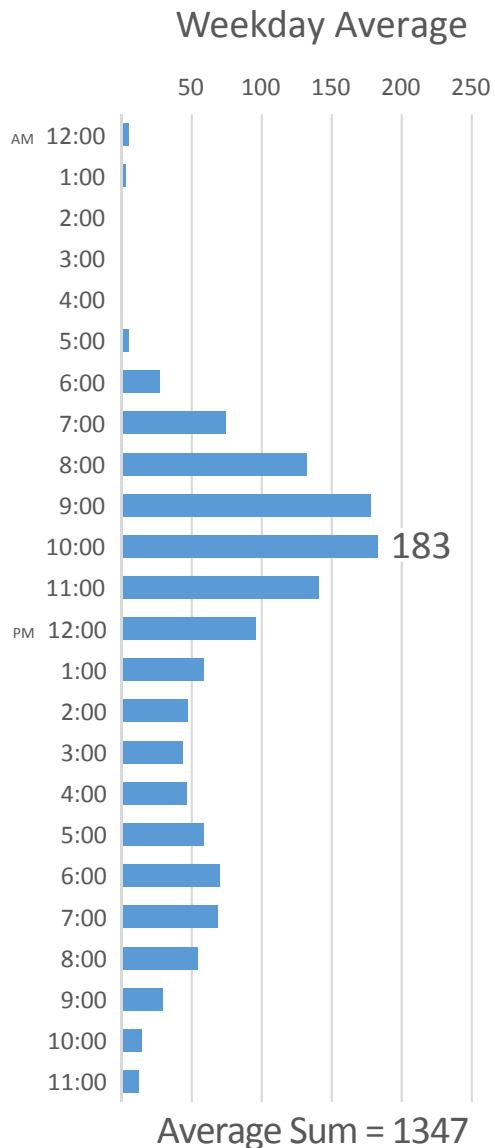 - *» Weekdays - 1,455*   *Weekend days - 1,954*
  - *» Weekdays - 1,091*   *Weekend days - 1,392*

- **Night in Venice Boat Parade**
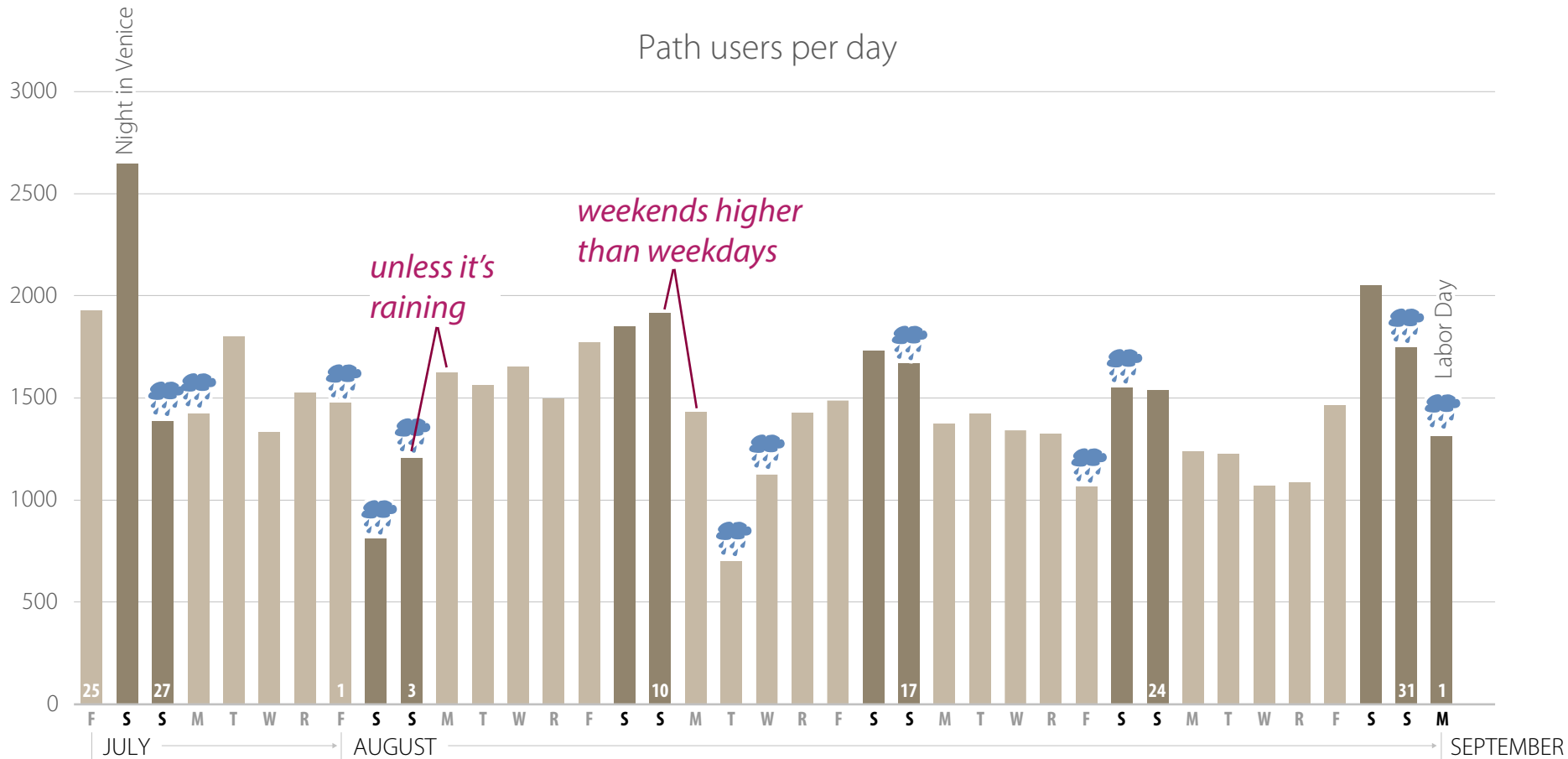 - *» Largest single day volume - 2,644*   *817 between 6:30 and 9:30PM*
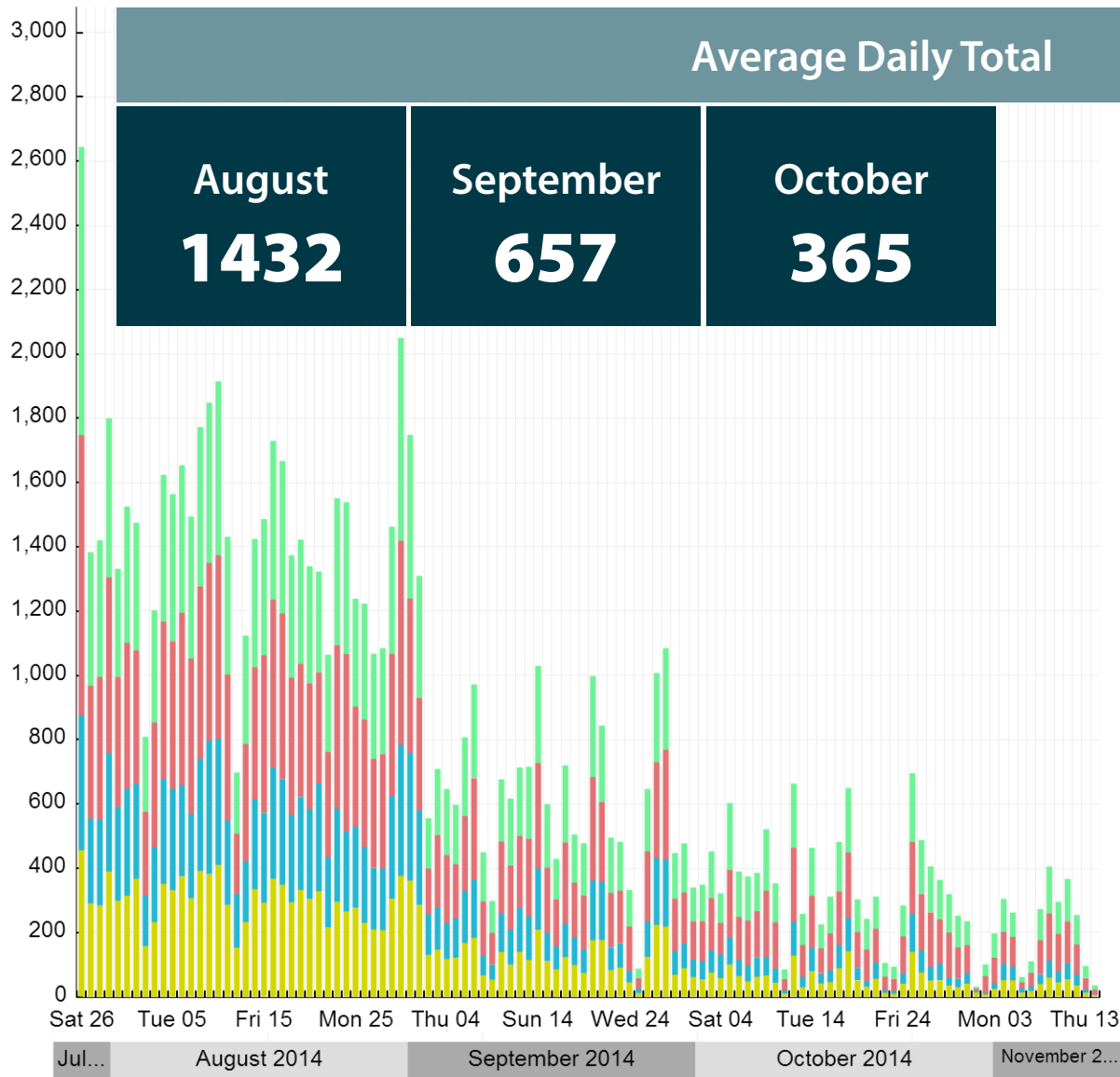
Total Count (August 2014)

Weekday Average

AM 12:00		
1:00		
2:00		
3:00		
4:00		
5:00		
6:00		
7:00		
8:00		
9:00		
10:00	**183**	
11:00		
PM 12:00		
1:00		
2:00		
3:00		
4:00		
5:00		
6:00		
7:00		
8:00		
9:00		
10:00		
11:00		

Average Sum = 1347

Weekend Average

Average Sum = 1604

- **10am was the peak hour** on both weekdays and weekends

nearly 4 per minute

- Highest hour in August: **330**
  - » *5.5 per minute*

Results through September 1st

Path users per day

unless it's raining

weekends higher than weekdays

3000
2500
2000
1500
1000
500
0

Night in Venice

Labor Day

F S S M T W R F S S M T W R F S S M T W R F S S M T W R F S S M

25   27   1   3   10   17   24   31 1

JULY   AUGUST   SEPTEMBER

Results through November 14th » *114 days*

Average Daily Total			
August 1432	**September** 657	**October** 365	**Average** 805

Total Count 91,500

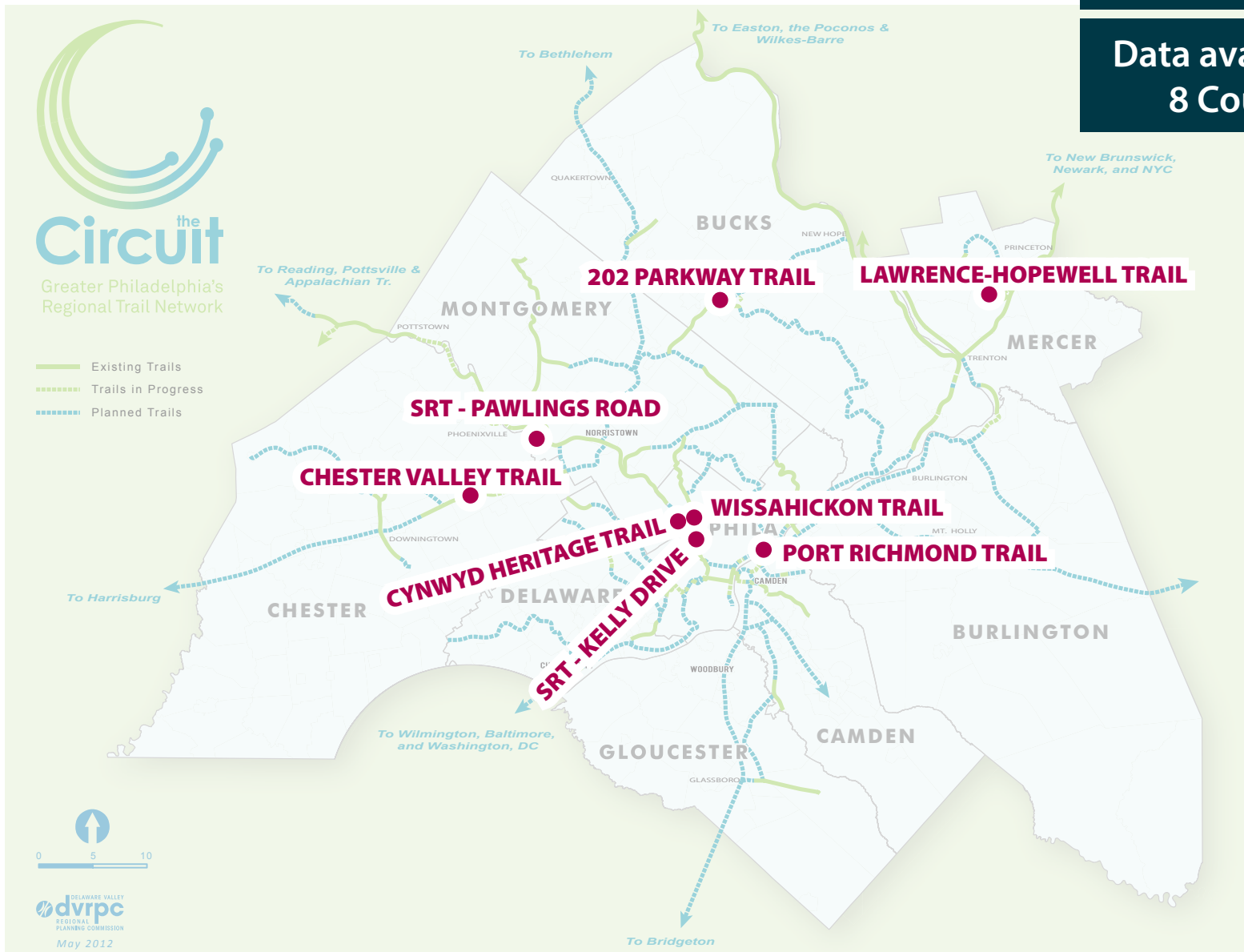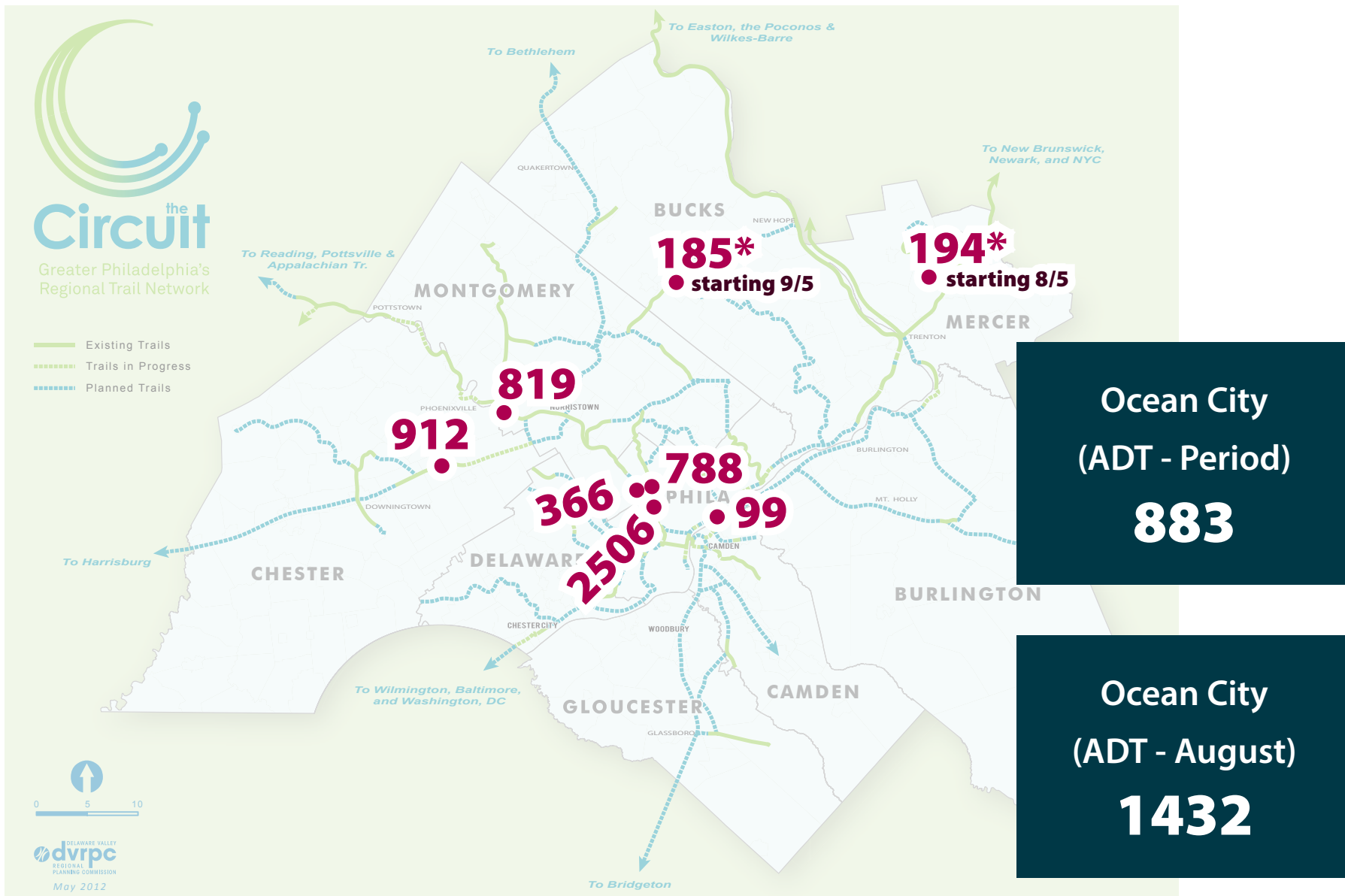**Pedestrians** 57,300

Cyclists 34,200

DVRPC Eco-Counter Locations

12 Counters Planned

Data available for 8 Counters

DVRPC Counts - Average Daily Totals (July 25 - October 31)

185* starting 9/5

194* starting 8/5

819

912

788

366

2506

99

Ocean City (ADT - Period)
883

Ocean City (ADT - August)
1432

Follow-up

- NJDOT press release (?)

- Web access to data

- User survey - next summer

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