Traffic Control Program

City of Milwaukee
Department of Public Works
February, 2015

Capital Program Funding Elements

(Note: Pedestrian and Bicycle Facilities to be included at March 4, 2015 Presentation)


Traffic
Signals
DPW Traffic Control Program
February, 2015
D.P.W.
26348
VERSALIFT
DANGER
DO NOT
TO
EAST
794

Traffic Signal Totals

(As of January 1, 2015)

- 758 (-4) Signalized Intersections
  - All intersections are fully converted to LED signal indications
  - 322 (+4) intersections with active fire preemption
  - 17 time-based coordinators
  - 511 (+117) intersections with pedestrian countdown timers
  - 29 (+4) intersections with audible pedestrian signals
  - 17 (+4) flashing beacons
- 6 Crosswalks With Rectangular or Circular Rapid Flashing Beacons
- 3 Pedestrian Hybrid Beacons (HAWK Signals)
- Canal Street/Miller Park Reversible Lane Signals
- 6 Dynamic Speed Limit Signs

Signalized Intersection Changes

2014

- New Signals
  - Kilbourn and 16th
  - Kilbourn and 17th
- Zoo Interchange Related
  - Signal Removed
    - Wisconsin and 97th
  - Jurisdictional Transfer to WISDOT
    - Kearney and 84th
    - O'Connor and 84th
    - Bluemound and 92nd
    - Bluemound and 95th
    - Bluemound and 97th

2015

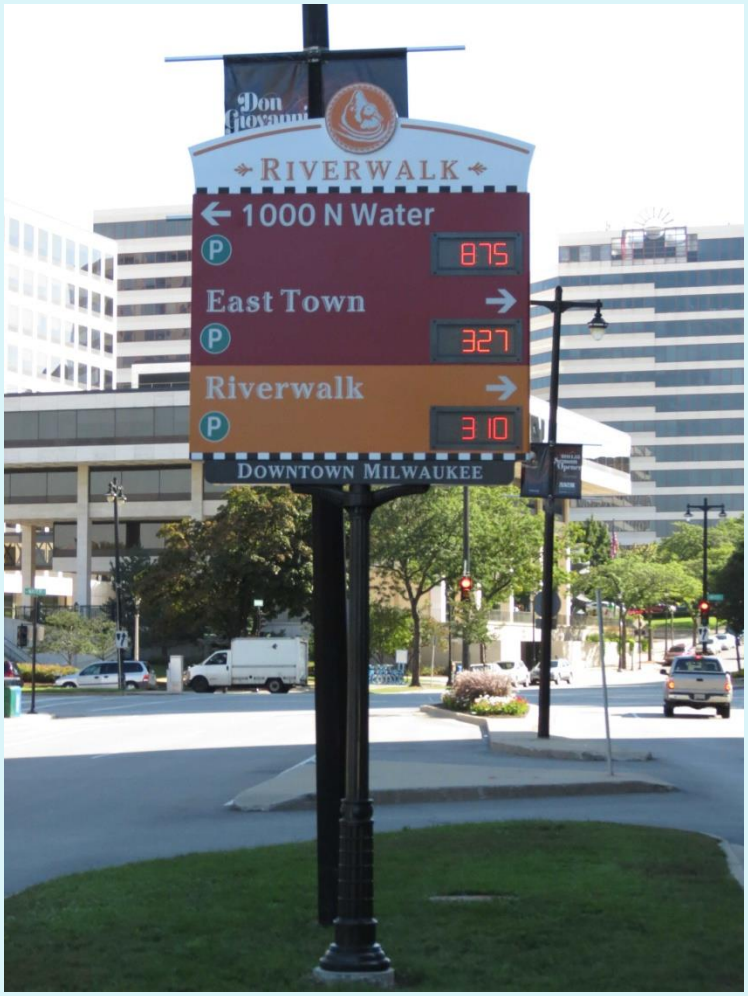
- Jurisdictional Transfer to City of Milwaukee from WISDOT
  - Appleton and Florist
  - Appleton and Carmen
  - Appleton and 91st
  - Appleton and Grantosa
  - Appleton and Hampton
  - Appleton and Congress

Downtown Dynamic Parking Information Sign Project

DPW Traffic Control Program

February, 2015

Downtown Dynamic Parking Sign Project



- Phase One Signs (Riverwalk Area) Active June, 2014
  - Received Wisconsin ITS Project of the Year Award for 2014 from ITS Wisconsin
- Phase 2 (Westown Area) Anticipated to be Constructed in 2015/2016

Rectangular and Circular Rapid Flashing Beacons

FHWA Rapid Flashing Beacon Study

- Study conducted under contract to FHWA by the Texas Transportation Institute and Midwest Research Institute
- Study revealed no significant difference in driver compliance between rectangular (RRFB) and circular (CRFB) rapid flashing beacons
- FHWA will not give interim approval to the use of circular rapid flashing beacons since no difference in compliance between devices
- Per conditions of experimentation with the circular devices, City will replace the CRFB's with RRFB's at remaining study sites

Federal Aid Funding Sources for Traffic Control Capital Improvement Projects

- Federal Aid Paving Projects
- Wisconsin DOT Freeway Projects
  - Zoo Interchange
  - I-94/43 North/South Bridges Rehabilitation
  - Hoan Bridge / Lake Interchange Reconstruction
  - Stadium Freeway Bridges Rehabilitation
- Highway Safety Improvement Program (HSIP)
- Congestion, Mitigation, and Air Quality (CMAQ) Improvement Program

New 2015 Capital Program Traffic Signal **Initiatives**

DPW Traffic Control Facilities

February, 2015

2015 Programmed Signalized Intersection Improvements

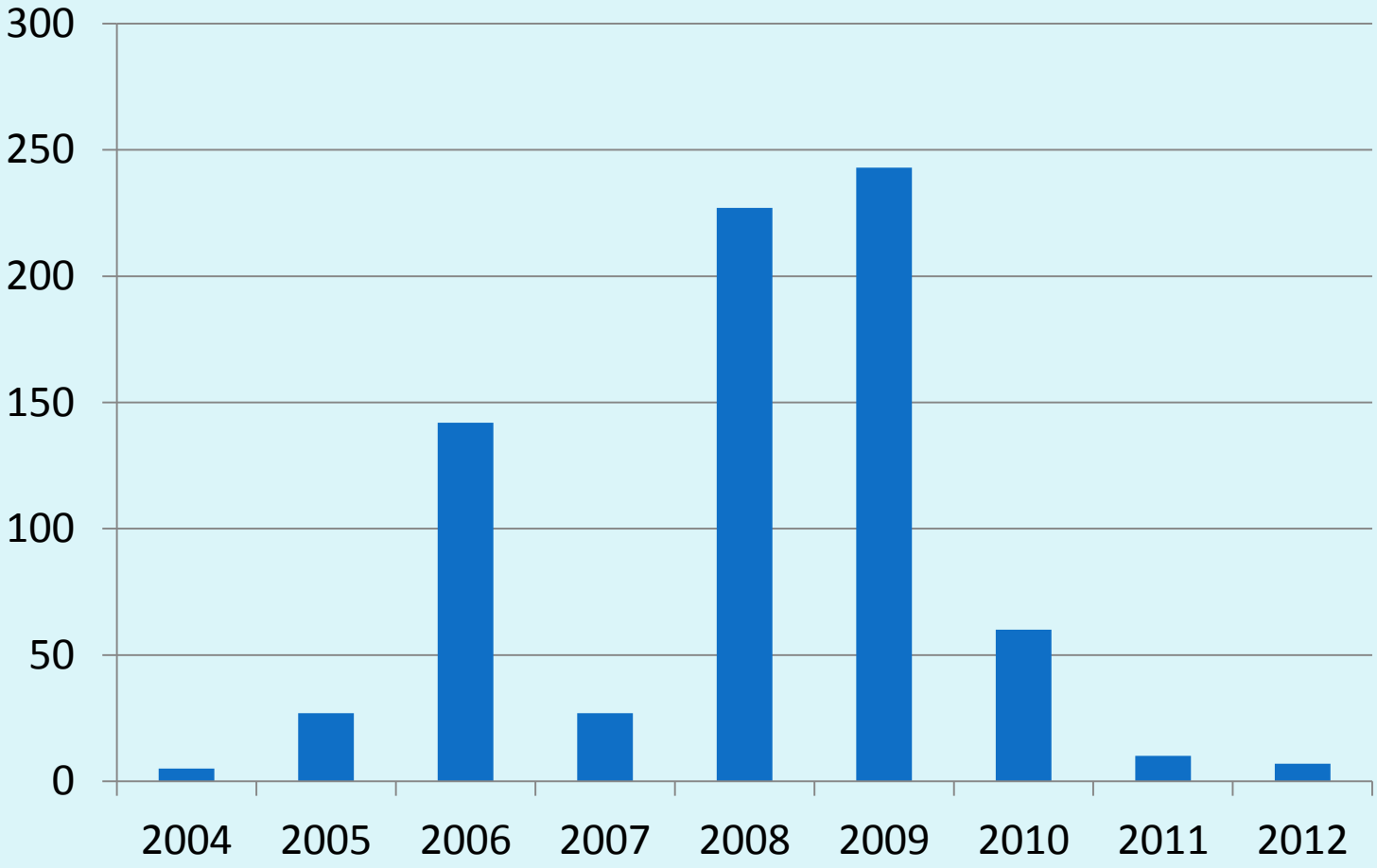
- New Traffic Signals
  - Wisconsin Avenue at vacated 15th Street (Private Benefit Signal)
- Audible Pedestrian Signals
  - Capitol and 76th
  - Appleton and 76th
  - Congress and 76th
  - Fond du Lac and Silver Spring
- RRFB's/Hawk Signals
  - Lapham and 9th
  - Seeboth and 1st
- Paving Program and Responses to Traffic Pattern Changes, Accident Countermeasures, Complaints and Other Ongoing Needs

Future Budgetary Considerations

LED Signal Indications

- Group Replacement Program for Incandescent Lamps in Signal Heads with LED Signals began in 2005
- Significant Energy Savings and Maintenance Cost reduction with LED Signal Lamps
- Anticipated Lamp Life of 6 to 7 Years at Start of Replacement Project
- Currently Beginning to Experience Failures
- Current Wisconsin DOT Experience is Lamp Life of Approximately 8 years
- Anticipate Group Replacement Needed to Begin by 2016

Number of Intersections Converted to LED Signal Indications by Year



DPW Traffic Control Program

February, 2015

Traffic Signs

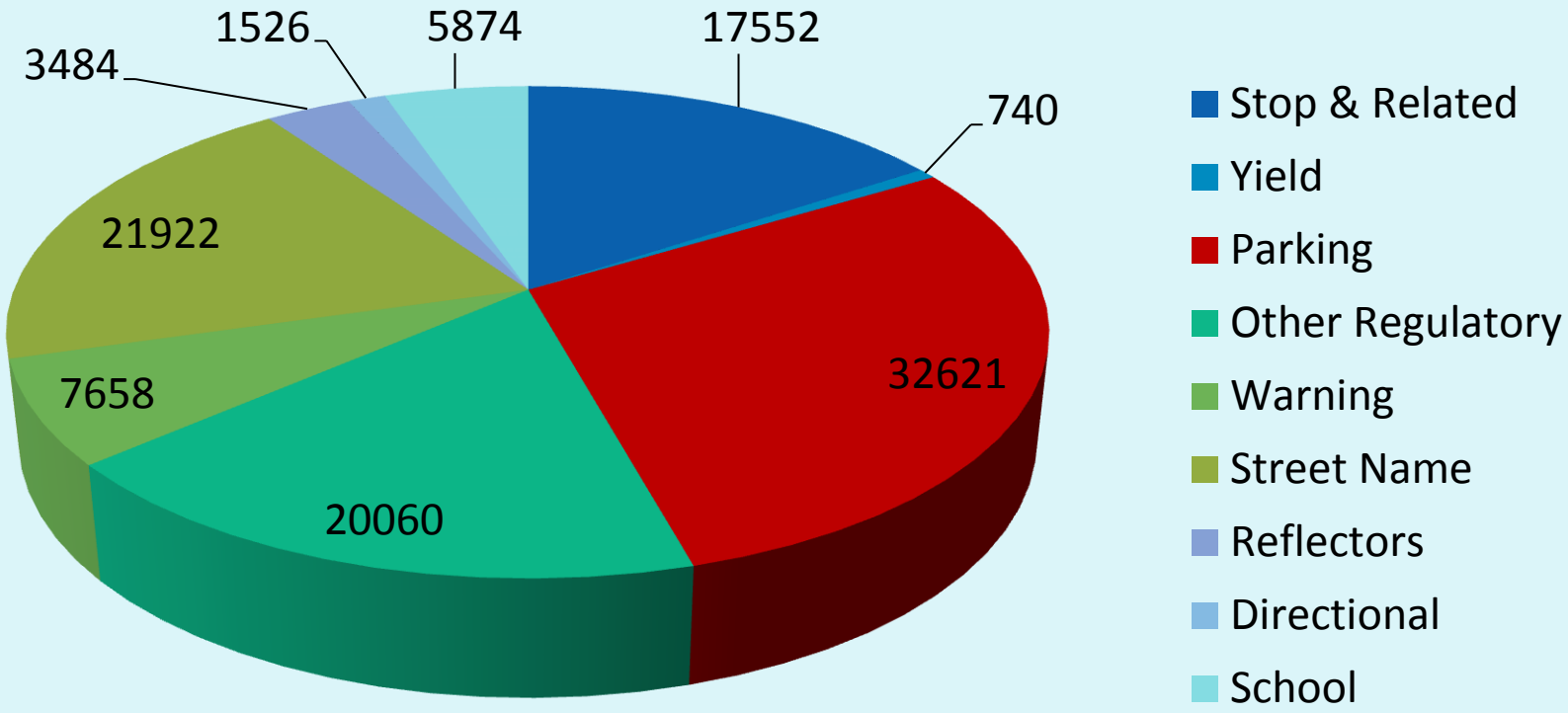
DPW Traffic Control Program

February, 2015

Traffic Signs by Sign Type

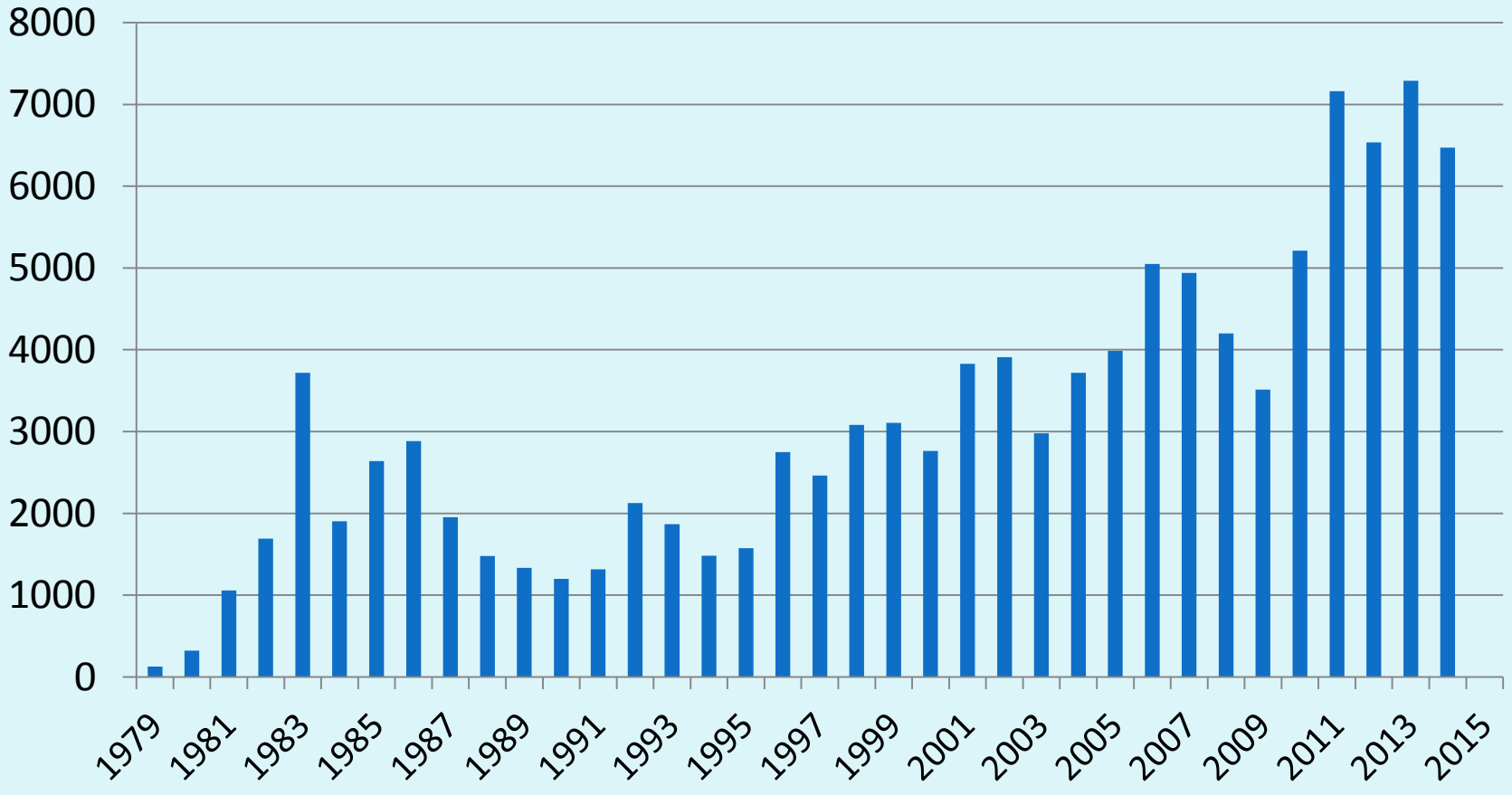
(As of January 1, 2015)

Total Existing Traffic Control Signs: 111,437 (+997)



Existing Signs by Sign Installation Date

(as of January 1, 2015)



DPW Traffic Control Program

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Signing Program Retroreflectivity Compliance Dates at Budgeted Funding Levels

- Regulatory and Warning Signs
  – January 1, 2018

- Street Name and Other Guide Signs
  – January 1, 2026

Sign Sheeting Useful Life

- Retroreflectivity Measured on Existing Signs in Service
- Observed Sign Sheeting Life Maintaining Minimum Retroreflectivity
  - Green 18 Years
  - Red 20 Years
  - Yellow 16 Years
  - White 25 Years

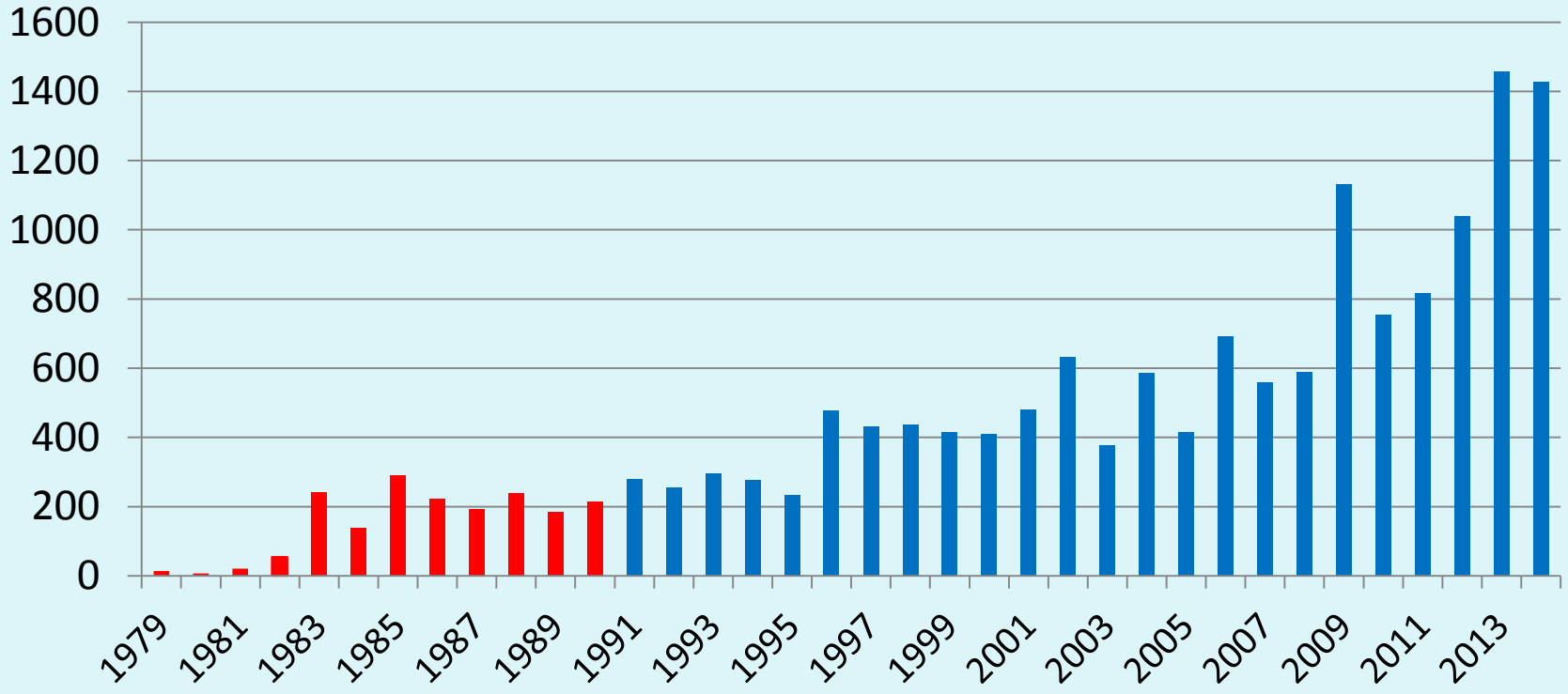
Existing White Signs by Sign Installation Date

(Excluding Parking and Parking Related Signs)

(as of January 1, 2015)

Measured Life – 25 years

1,599 Signs Installed prior to 1990 (-640)



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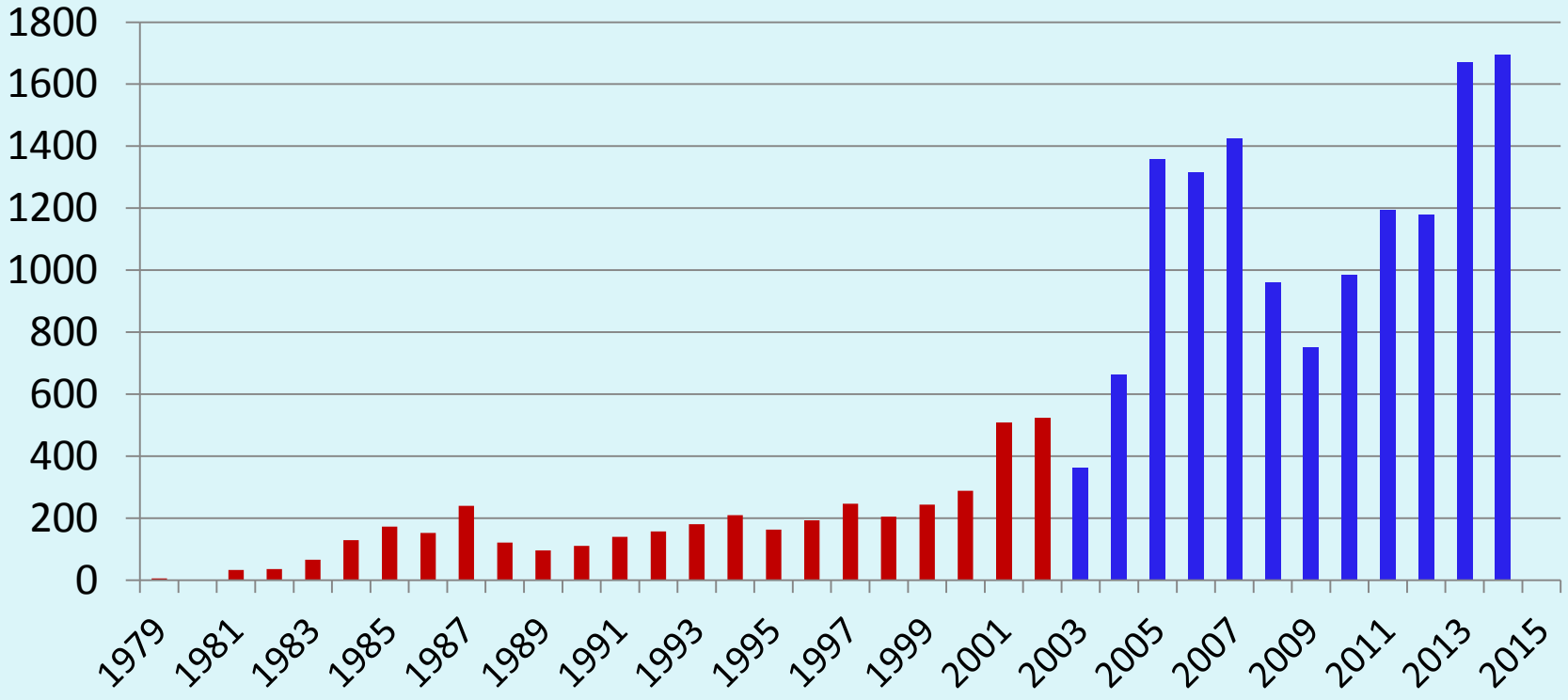
Existing Yellow Signs by Sign Installation Date

(as of January 1, 2015)

Measured Life – 16 years

2,655 Signs Installed prior to 1999 (-763)

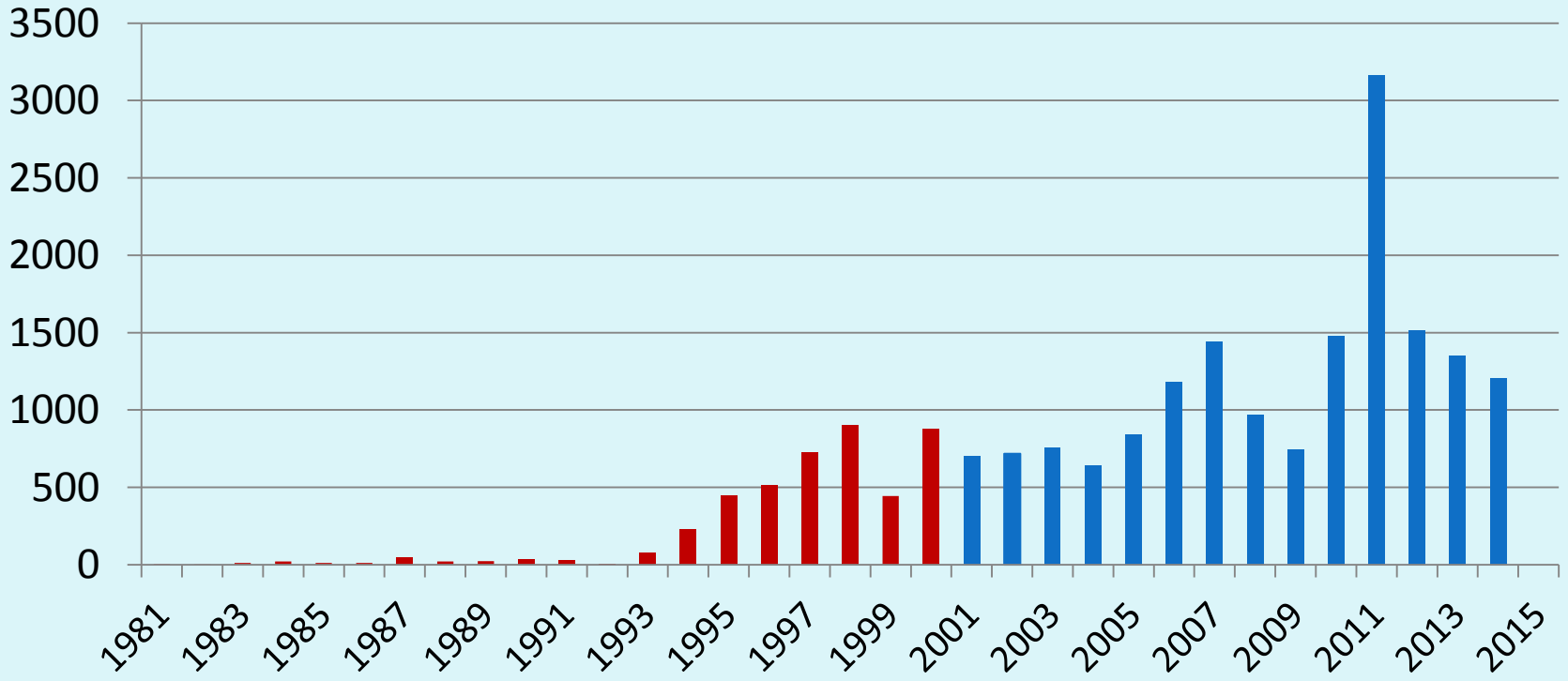


Existing Red Signs by Sign Installation Date

(as of January 1, 2015)

Measured Life – 20 years

521 Signs Installed prior to 1995 (-230)



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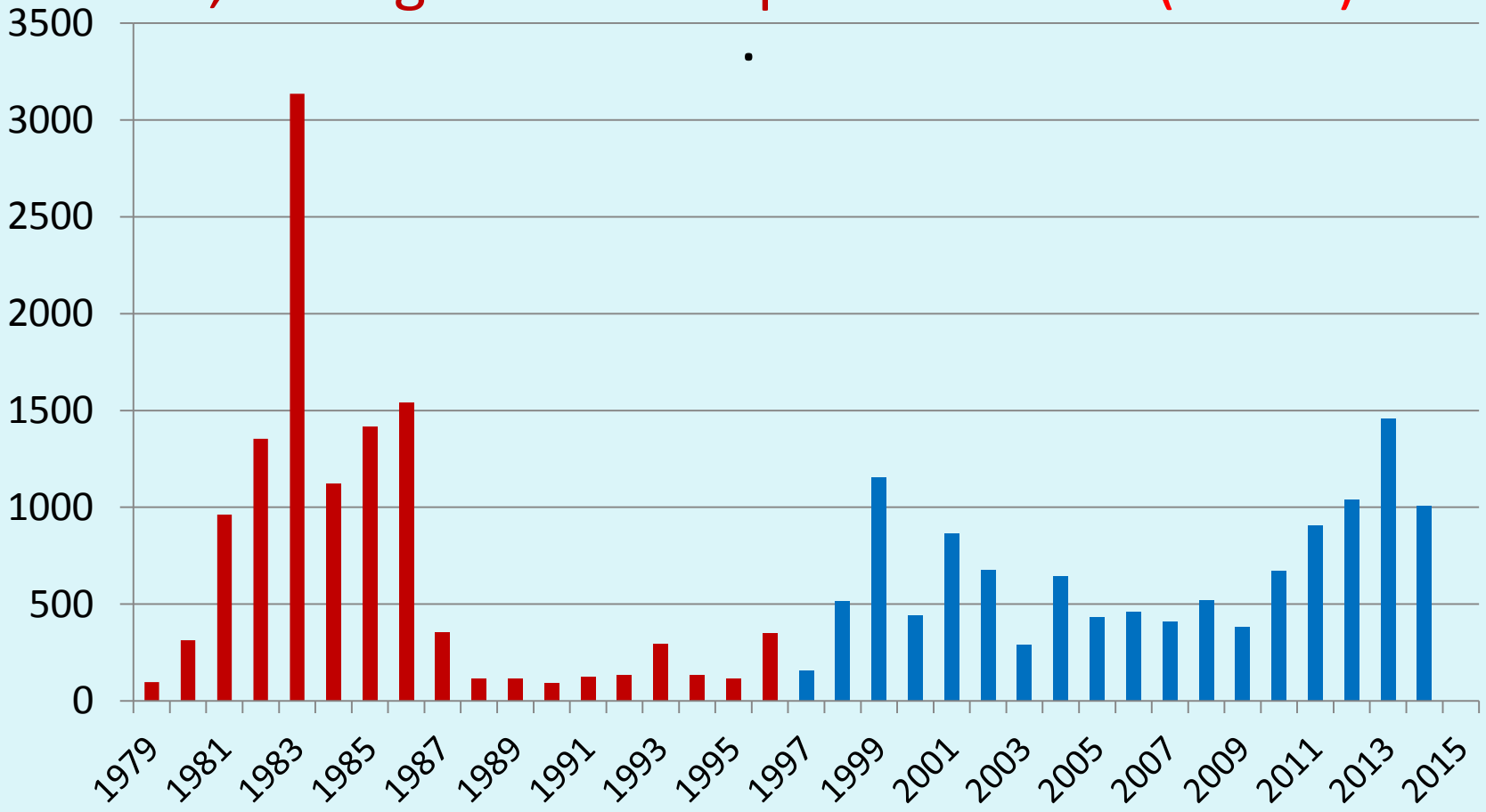
Existing Green Signs by Sign Installation Date

(as of January 1, 2015)

Measured Life – 18 years

11,761 Signs Installed prior to 1997 (-1079)



DPW Traffic Control Program

February, 2015

Pavement Marking Program

DPW Traffic Control Program

February, 2015

Types of Pavement Markings Maintained

(As of January 1, 2015)

- Lane Lines and Center Lines
  - 340 Miles
- Arrows, “Only”, Bicycle Symbols and Sharrows
  - 387 Locations
- Bike Lanes (Single and Double Lined)
  - 150 (+4) Miles
  - Green Bike Lane Intersection Markings
    - Humboldt and Locust
    - Humboldt and Center
- Crosswalks
  - 1,846 (+9) Locations

Average Useful Life of Pavement Markings

- Painted: 1 Year
- Inlaid Plastic: 5 Years
- Epoxy: 3 Years

Other Budgetary Impacts

Uncollectable Knockdowns

Uncollectable Knockdowns

- Applied to the Cost of Equipment Replacement Resulting From Traffic Accidents, Vandalism or Other Damage when Costs Cannot be Recovered from Parties Responsible For Damage
- Total Expenditures of approximately $360,000 to date for Damages Experienced in 2014 (+106% above 2013)
  - Responded to 344 traffic signal knockdowns and 23 control cabinet knockdowns