District of Columbia 311 Ticket Processing

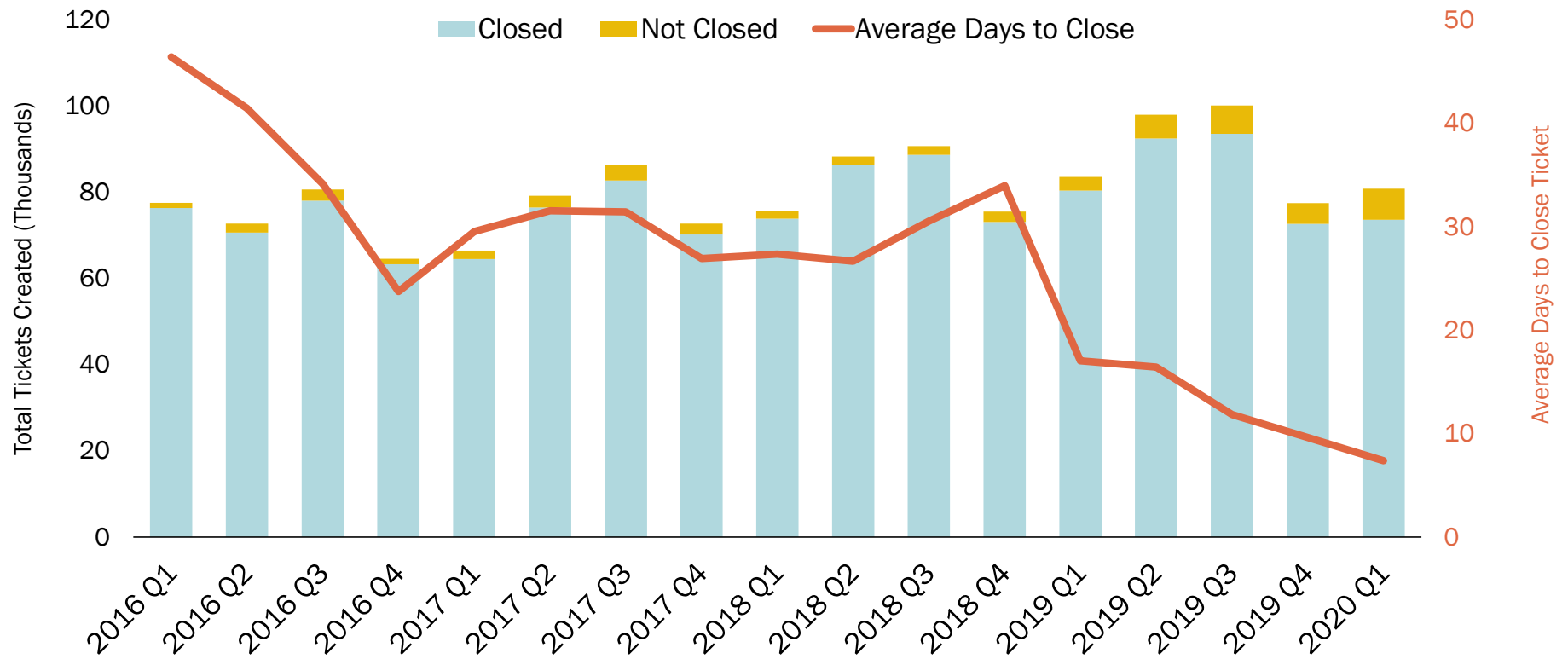**Prepared by: Matt Kruczlnicki**

August 8, 2022

Objective

Using the District of Columbia's 311 ticket information from 2016-2020, identify opportunities for agencies and programs to improve efficiency and reduce ticket closing times.

Are there system-wide changes that could benefit a variety of agencies?

Ticket Creation Rises with Seasonality; Declining Closing Time
Total 311 Tickets by Creation Quarter; Average Days to Close by Quarter Created

Legend: Closed | Not Closed | Average Days to Close

Y-axis (left): Total Tickets Created (Thousands) — 0, 20, 40, 60, 80, 100, 120
Y-axis (right): Average Days to Close Ticket — 0, 10, 20, 30, 40, 50
X-axis: 2016 Q1, 2016 Q2, 2016 Q3, 2016 Q4, 2017 Q1, 2017 Q2, 2017 Q3, 2017 Q4, 2018 Q1, 2018 Q2, 2018 Q3, 2018 Q4, 2019 Q1, 2019 Q2, 2019 Q3, 2019 Q4, 2020 Q1

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# Ticket Creation Rises with Seasonality; Declining Closing Time
Total 311 Tickets by Creation Quarter; Average Days to Close by Quarter Created
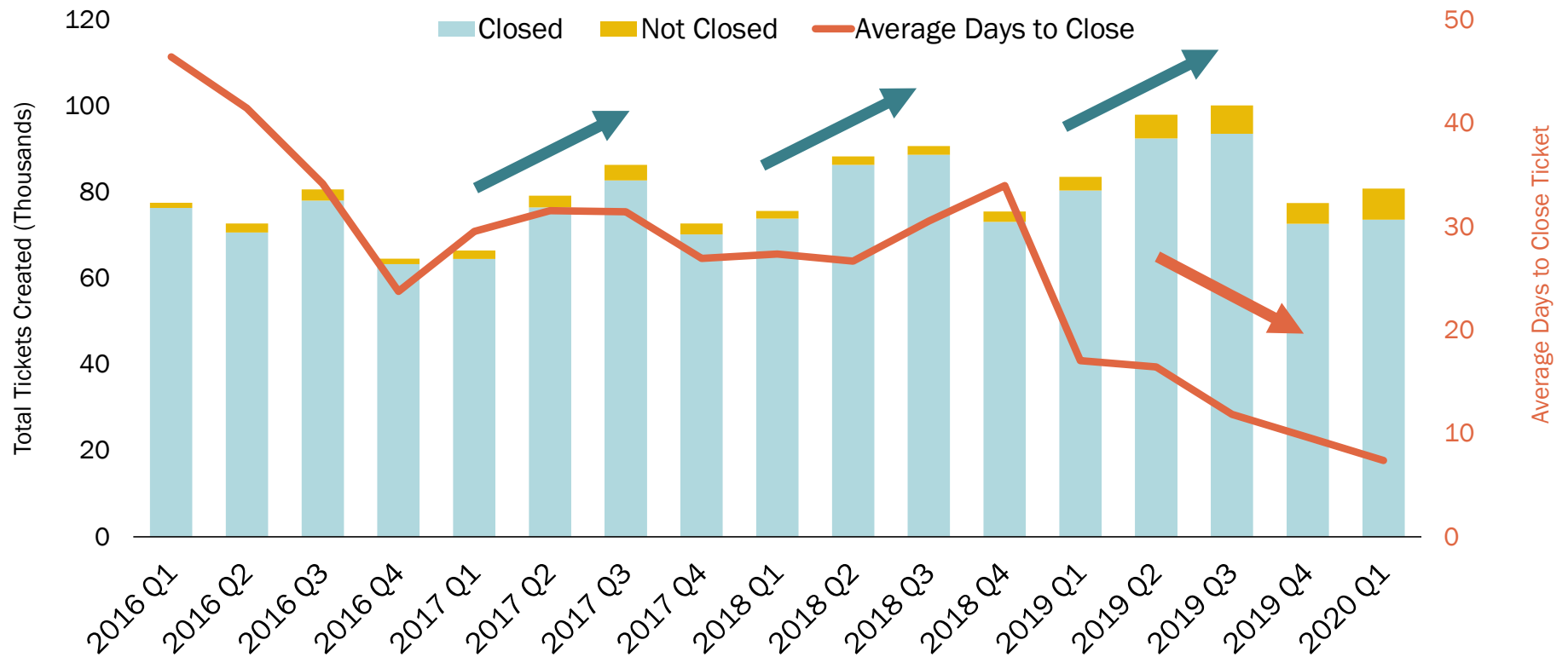
Average Days to Close Tickets Driven by DDOT Efficiencies
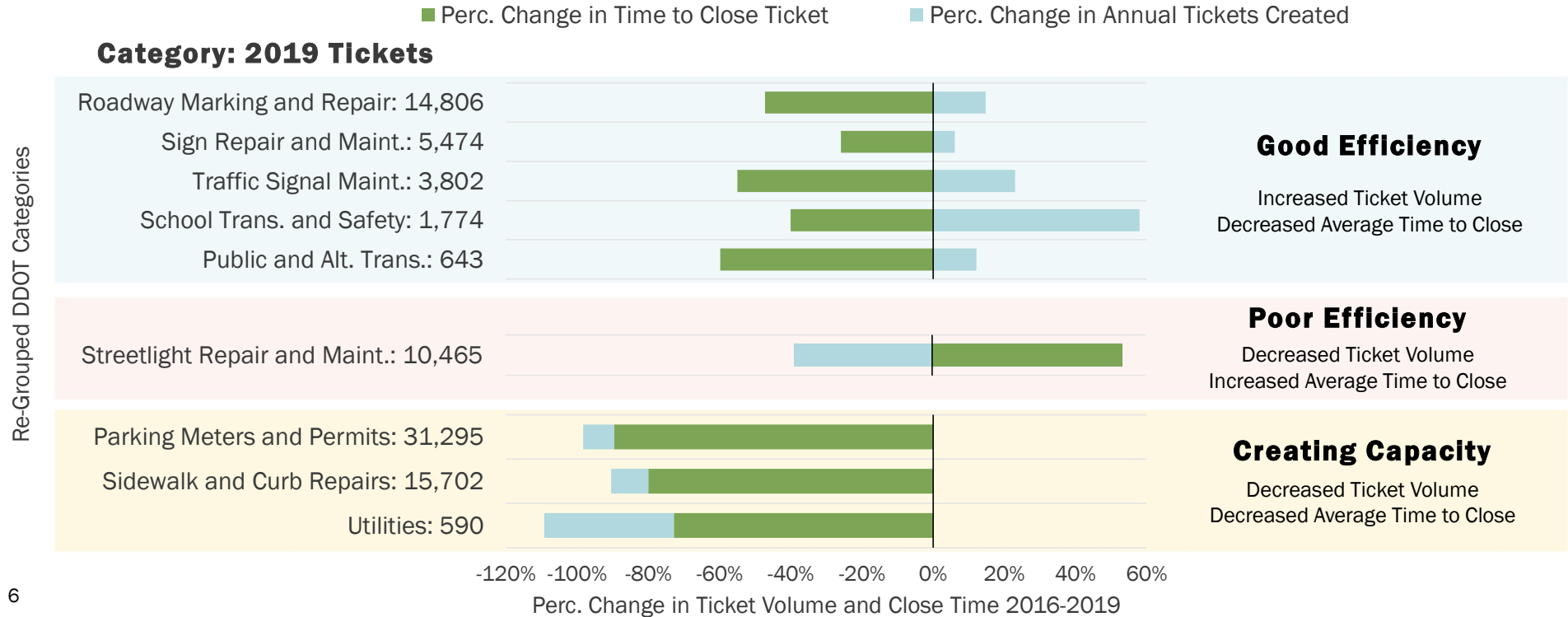## Average Days to Close 311 Ticket by Agency | Top 5 Agencies by 311 Ticket Volume

DDOT (District Department of Transportation) registered steady reduction in ticket closing times since early 2019, driving improved system-wide response times.
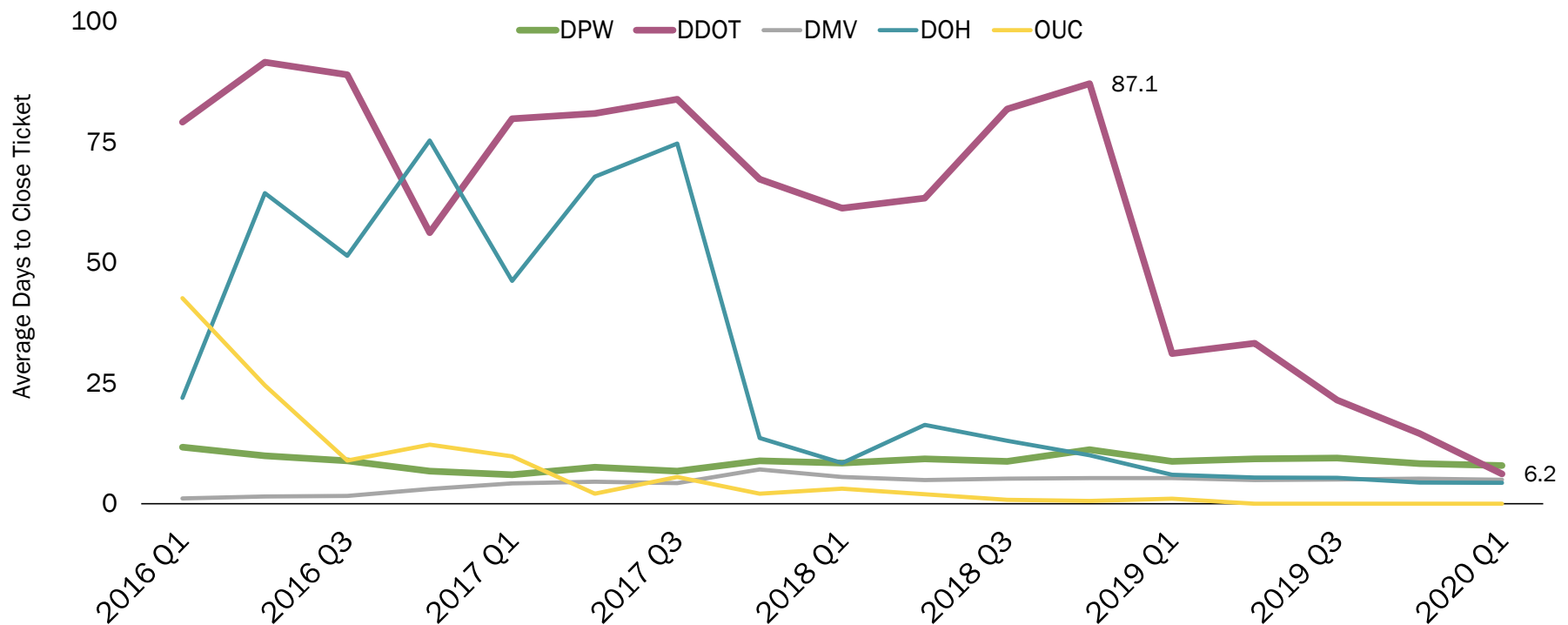
DDOT Categories Mostly Increase Efficiencies in Closure Times
Perc. Change in Ticket Volume & Close Time Among DDOT Categories | 2016 -2019

Most DDOT categories show improvements in overall efficiency, irrespective of the change in ticket volume experienced.

■ Perc. Change in Time to Close Ticket   ■ Perc. Change in Annual Tickets Created

Category: 2019 Tickets

Re-Grouped DDOT Categories

Roadway Marking and Repair: 14,806
Sign Repair and Maint.: 5,474
Traffic Signal Maint.: 3,802
School Trans. and Safety: 1,774
Public and Alt. Trans.: 643

Streetlight Repair and Maint.: 10,465

Parking Meters and Permits: 31,295
Sidewalk and Curb Repairs: 15,702
Utilities: 590

Good Efficiency
Increased Ticket Volume
Decreased Average Time to Close

Poor Efficiency
Decreased Ticket Volume
Increased Average Time to Close

Creating Capacity
Decreased Ticket Volume
Decreased Average Time to Close

-120% -100% -80% -60% -40% -20% 0% 20% 40% 60%

Perc. Change in Ticket Volume and Close Time 2016-2019

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Technology and Hardware Advancements Could Drive Success in Reducing the Number of Tickets Filed
Parking Meters and Permits and Streetlight Repair

Parking Meters and Permits

- Reduced demand and increased efficiency

- ParkMobile was introduced by DDOT in the early 2010's and has been steadily expanded
  - Reduces the number of traditional parking meters and therefore maintenance, repair, and coin collection required.

Streetlight Repair and Maintenance

- Reduced demand but increasing time to close tickets

- The District began an initiative in 2012 to replace alley lighting with lower-maintenance LED bulbs. Some neighborhood streets additionally received this upgrade, which could have resulted in fewer ticket filings relative to non-LED bulbs.
  - But there remains the challenge of this segment being slower in closing tickets in 2019 as opposed to 2016.

Overall Ticket Creation Trends Driven by DPW, DOT
## Total 311 Tickets Created by Responsible Agency and Quarter

Seasonality of demand supported by DPW (Department of Public Works). DDOT (District Department of Transportation) records steady declines in tickets created.

Total Tickets Created (Thousands)

DPW

DDOT
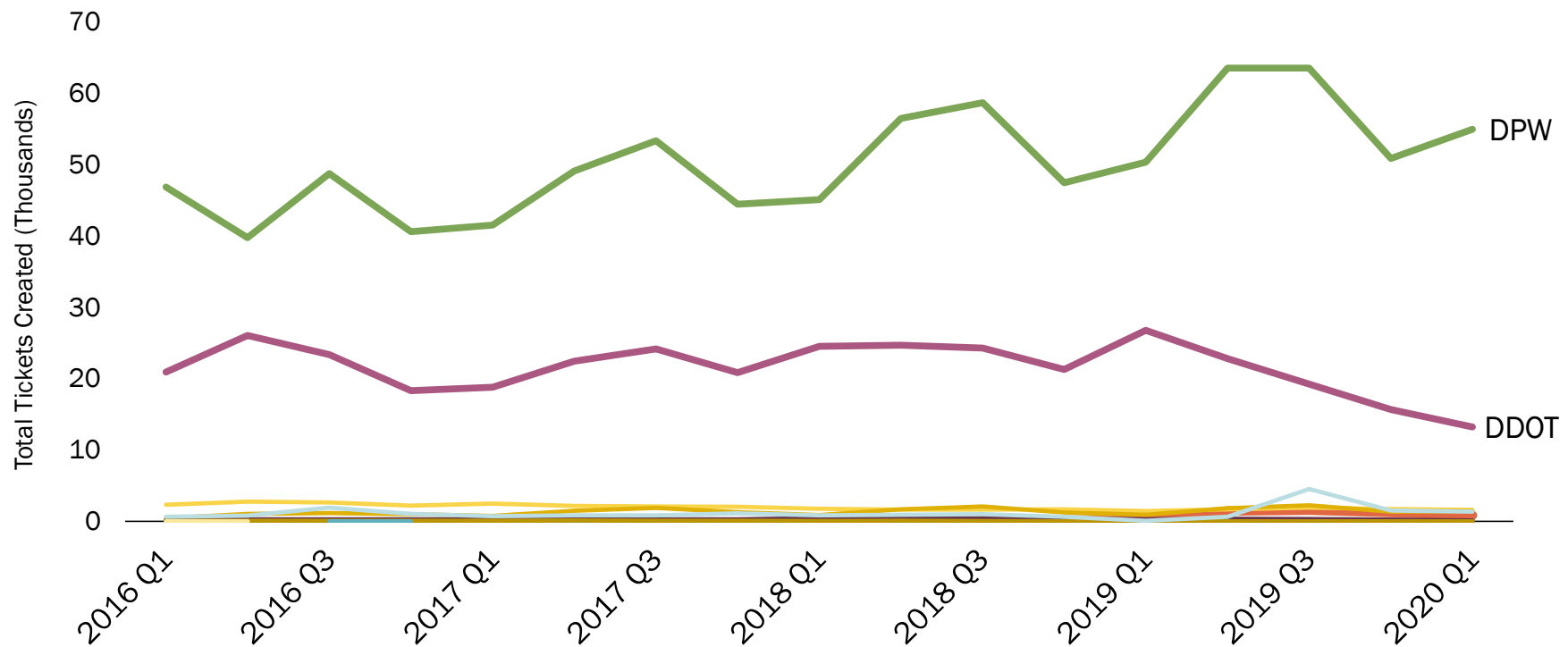
DPW Ticket Closing Times Are Low, But Slows with Volume
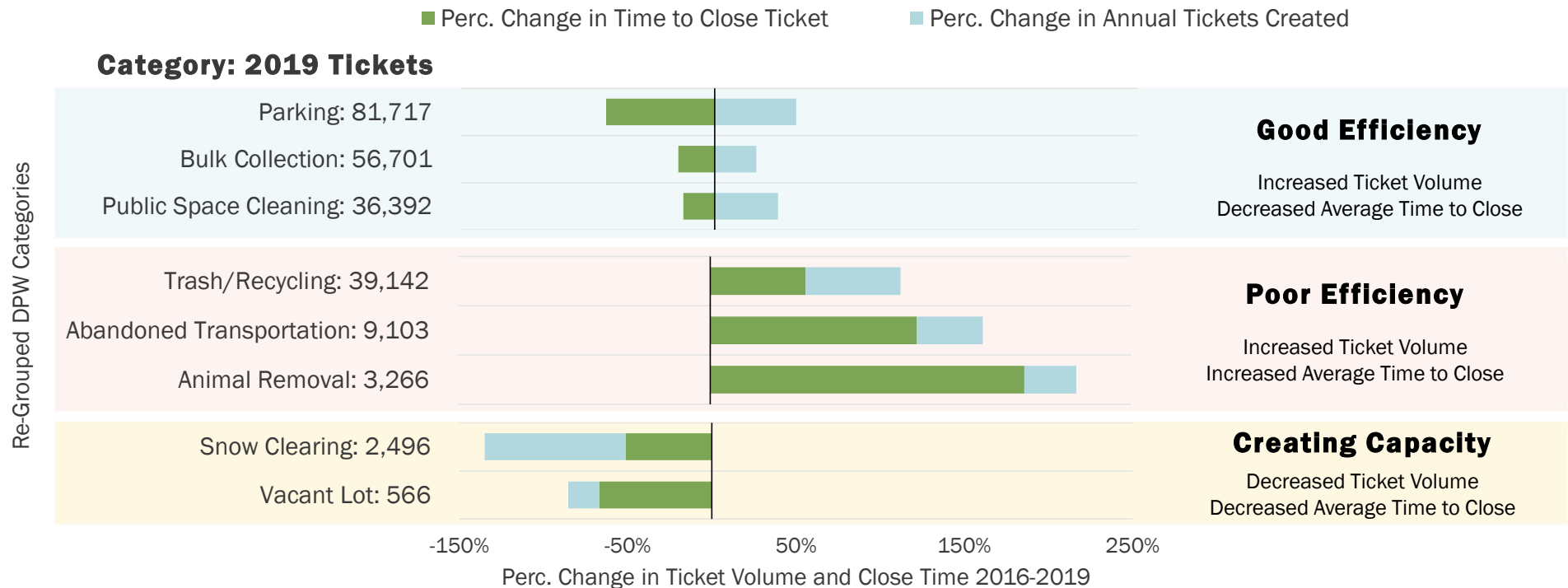## Closed DPW Tickets Relative to Average Time to Close by Quarter 2017-2019

DPW's average days to close tends to increase as the department processes more tickets. Given seasonality of tickets filed, DPW tends to be slowest in closing tickets in the 2nd and 3rd quarters.

Average Days to Close Ticket

Total Tickets Closed in Quarter

● Q1 ● Q2 ● Q3 ● Q4
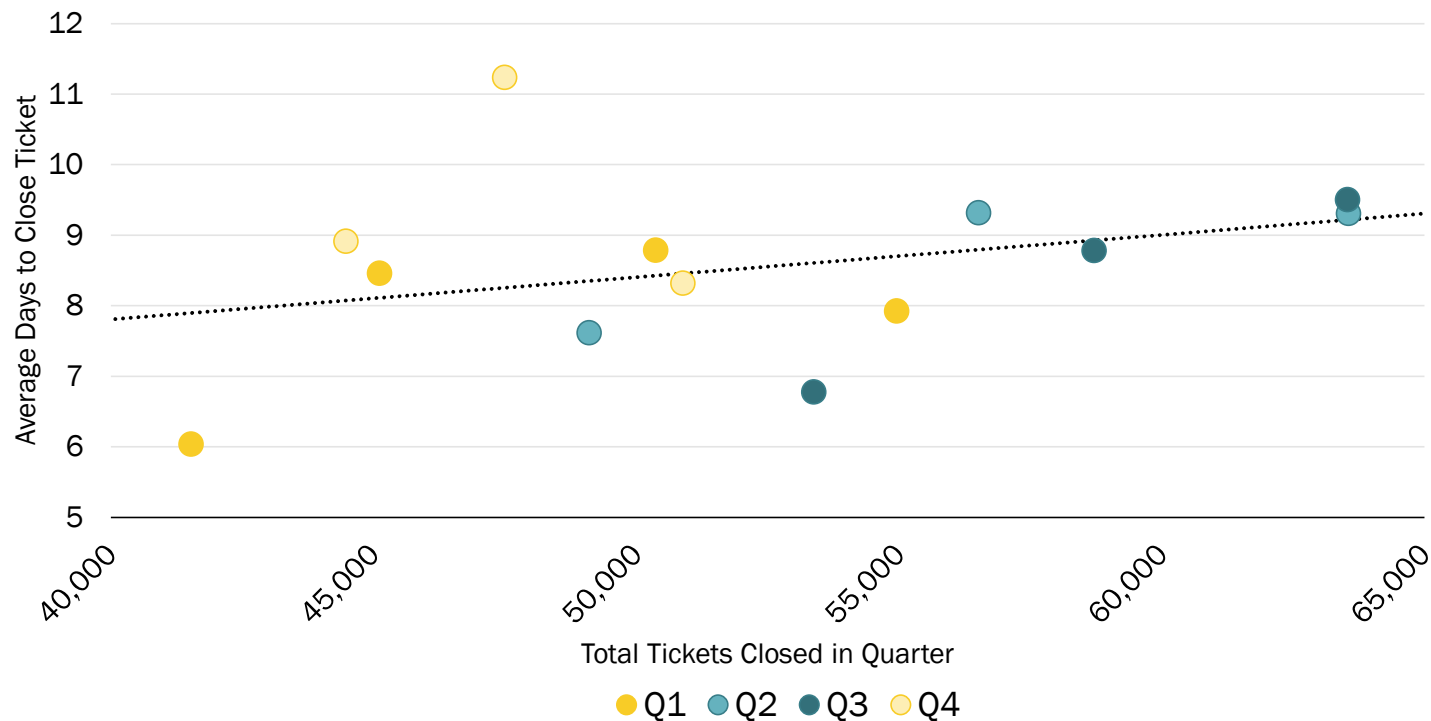
DPW Gaining Efficiencies in High-Volume Ticket Categories
Perc. Change in Ticket Volume & Close Time Among DPW Categories | 2016 -2019

Changes in the time to close tickets is not necessarily correlated to the change in ticket volume for DPW.
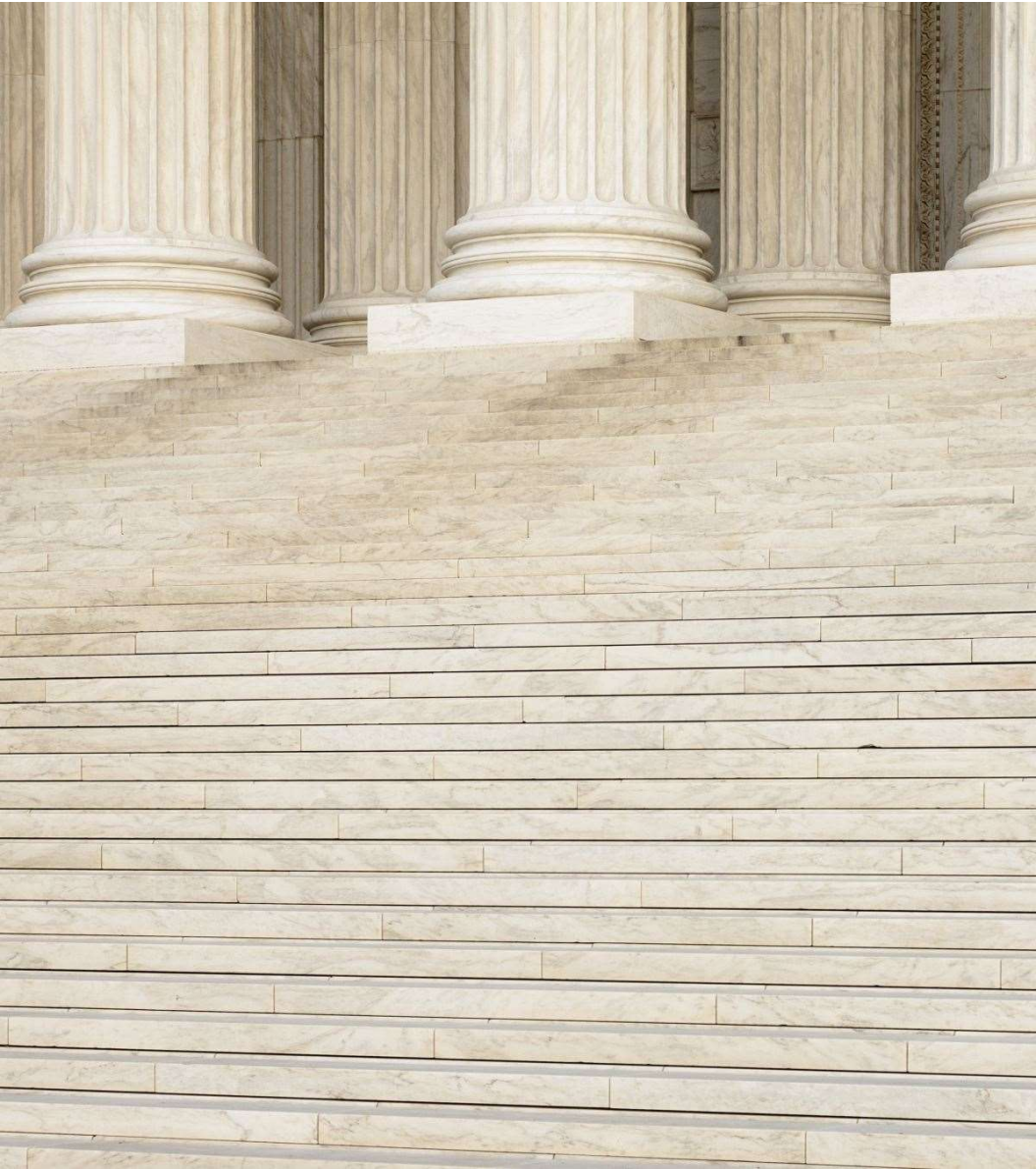
■ Perc. Change in Time to Close Ticket ■ Perc. Change in Annual Tickets Created

Category: 2019 Tickets

Re-Grouped DPW Categories

Parking: 81,717
Bulk Collection: 56,701
Public Space Cleaning: 36,392

Good Efficiency

Increased Ticket Volume
Decreased Average Time to Close

Trash/Recycling: 39,142
Abandoned Transportation: 9,103
Animal Removal: 3,266

Poor Efficiency

Increased Ticket Volume
Increased Average Time to Close

Snow Clearing: 2,496
Vacant Lot: 566

Creating Capacity

Decreased Ticket Volume
Decreased Average Time to Close

-150%   -50%   50%   150%   250%

Perc. Change in Ticket Volume and Close Time 2016-2019

District-Wide Recommendations

Technology Can Improve Labor-Intensive Processes

- **DDOT:** ParkMobile, LED Bulbs

- **DPW:** Trash cans with fill sensors introduced in 2017

- Other potential areas of efficiency gains
  - DPW
    - **Roadway Signs** (Digitize for flexibility, Solar Panels)
    - **Automatic Parking Enforcement/Ticketing** (ParkMobile + GPS)
  - DDOT
    - **Tree Inspection** (Remote Health Sensors)

Department Self-Assessments

- Identify labor intensive 311 tickets and consider existing technologies which could improve efficiency

- Many duties require manual labor, in which efficiencies are likely to be most achievable through:
  - Increased capacity (more workers to address tickets)
  - Proactive monitoring to address public issues before a ticket needs to be filed
    - i.e. tree trimming, trash collection

Thank you