

Dallas Violent Crime Reduction Plan: Year 1 Results

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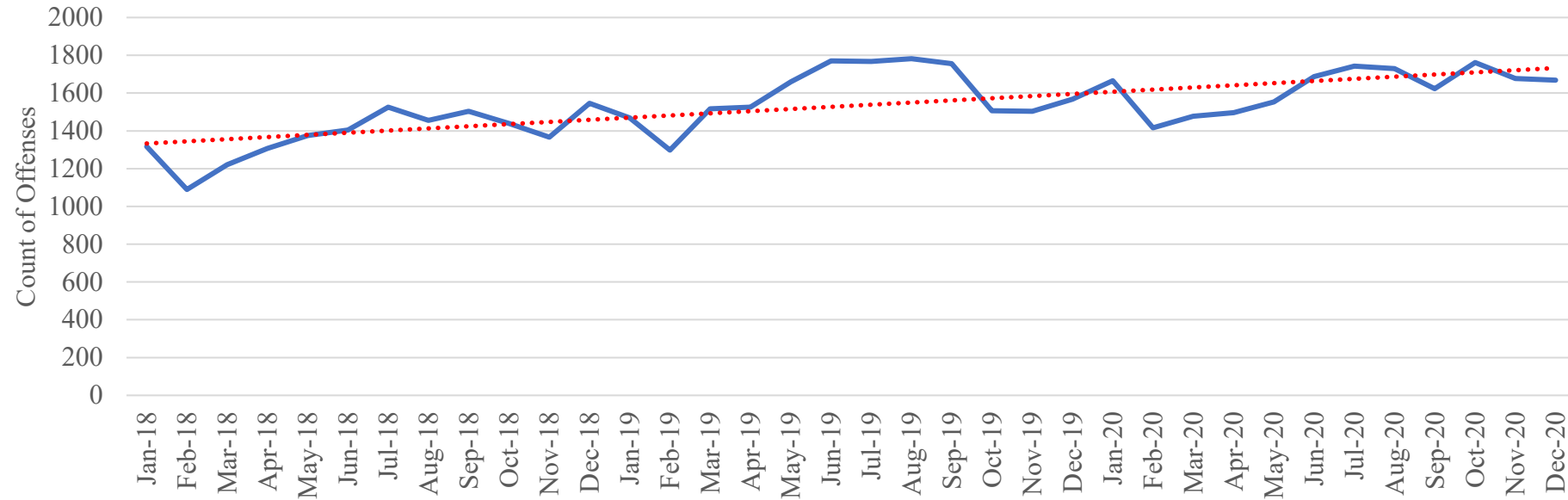
Overview

- May 2021: the Dallas Police Department began executing a three-part strategic plan (i.e., the “Crime Plan”) to reduce violent crime
 - Near-term strategy - hot spots policing: the deployment of police officers to small areas (300’ x 300’ grids) of high violent crime
 - Mid-term strategy – Place Network Investigations (PNI): strategy targets high crime places for extensive police and non-police (e.g. code enforcement, blight abatement) interventions designed to address the underlying conditions that help give rise to violent crime
- This presentation summarizes the methodology and analyses undertaken to independently and empirically evaluate the impact of these strategies on violent crime

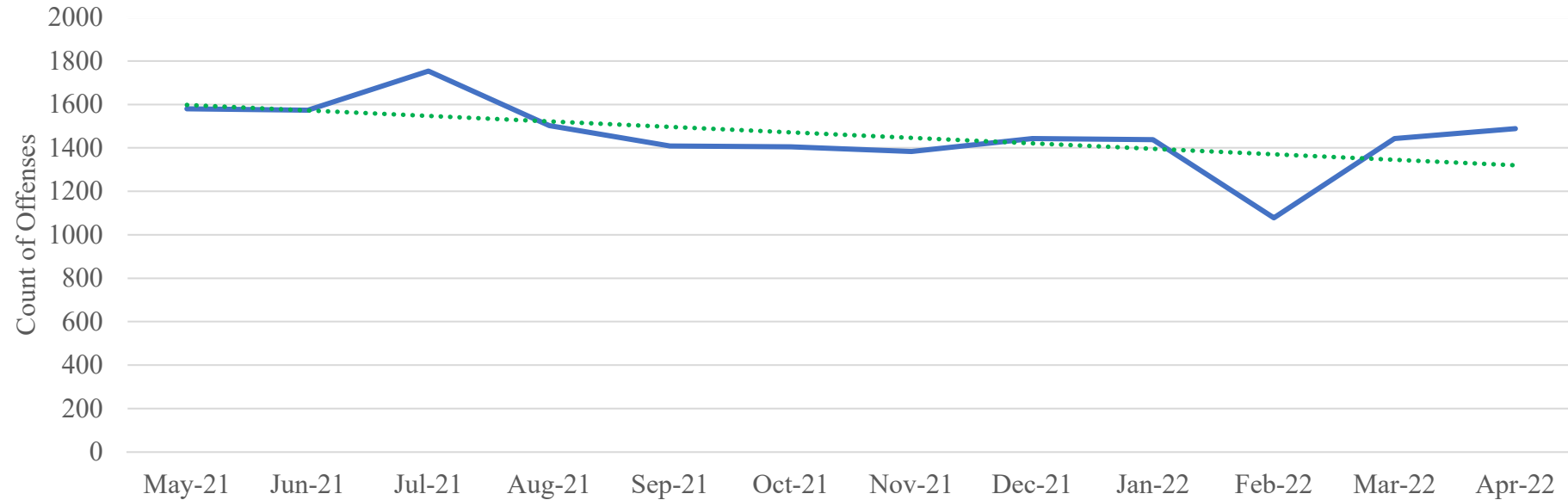
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1. Year to year comparisons
2. Temporal assessment of crime in grids
3. Period 4 treatment evaluation
4. Hot spot fidelity
5. Place Network Investigations (PNI) intervention
6. Conclusion

Part I Violent Crime Offense Count by Month
Jan 2018-Dec 2020

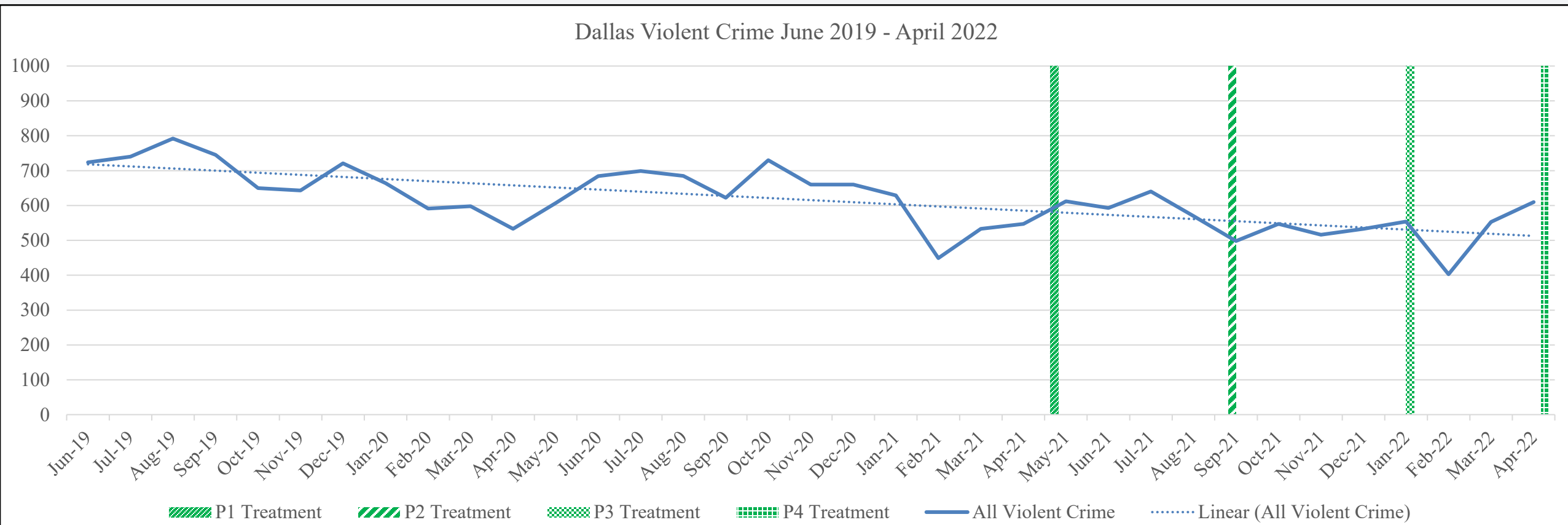


Part I Violent Crime Offense Count by Month
May 2021-Apr 2022



Year to year comparison – Crime Incidents

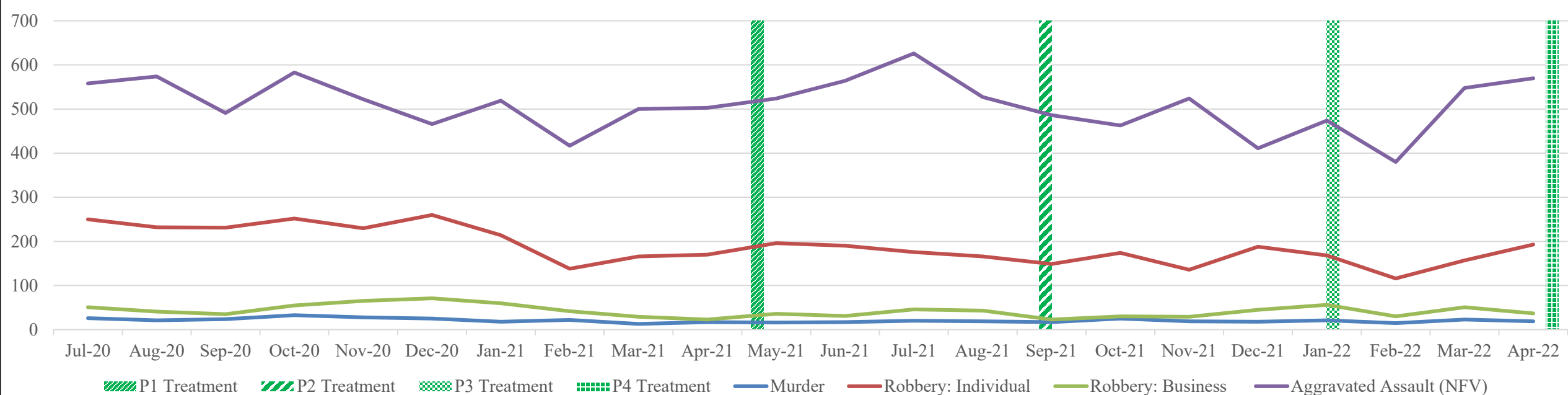
	Totals			Percent Change	
	5/7/19 - 5/6/20 (Comparison Period 1)	5/7/20 - 5/6/21 (Comparison Period 2)	5/7/21 - 5/6/22 (Crime Plan Intervention)	Crime Plan vs. Comparison Period 1	Crime Plan vs. Comparison Period 2
Street Crime Incidents	8,100	7,508	6,646	-17.95%	-11.48%



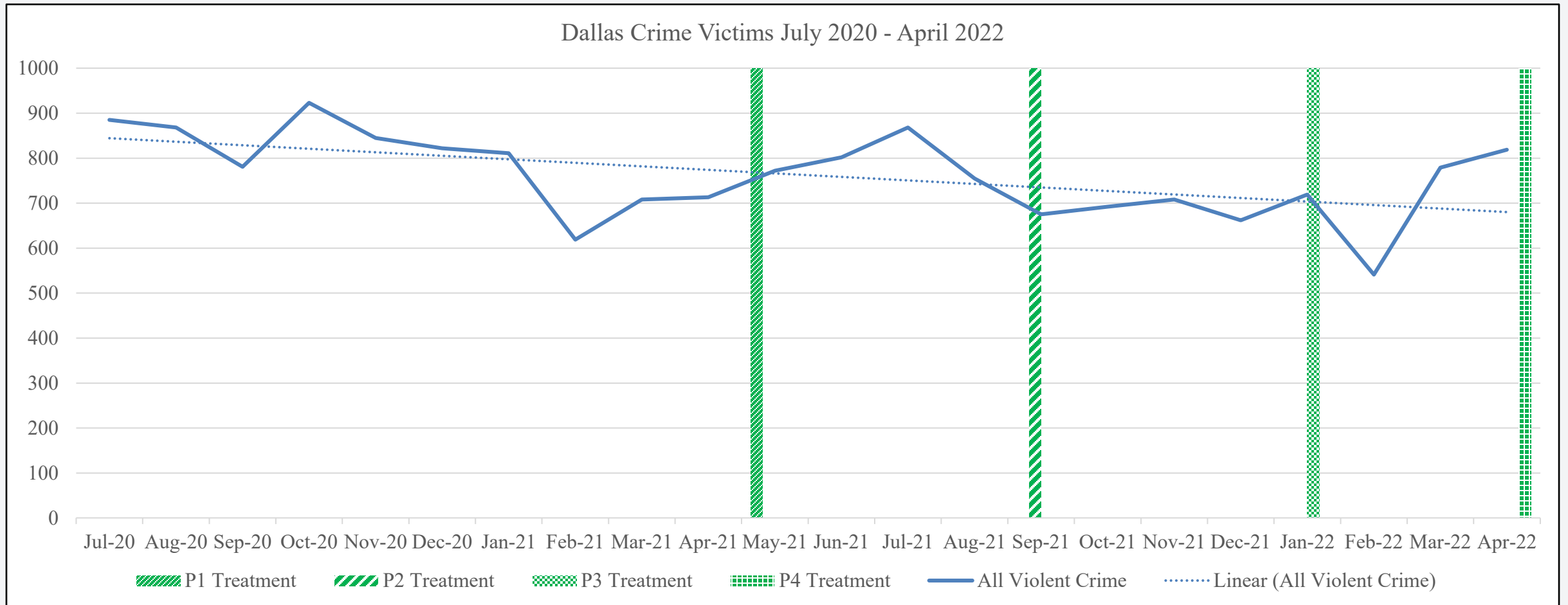
Year to year comparison – Crime sub-types

	Totals		Percent Change
	5/7/20 - 5/6/21 (Comparison Period)	5/7/21 - 5/6/22 (Crime Plan Intervention)	Crime Plan vs. Comparison Period
Murder	261	227	-13.03%
Robbery: Individual	2,566	2,016	-21.43%
Robbery: Business	545	453	-16.88%
Aggravated Assault (NFV)	4,204	4,010	-4.61%

Dallas Crime Victims July 2020 - April 2022 (By Subtype)



Year to year comparison - Victims



Year to year comparison – Summary

- City-wide violent crime:
 - 12% lower in the Crime Plan year compared to the May 2020-May 2021 period
 - 18% lower in the Crime Plan year compared to the May 2019-May 2020 period
 - Compared to the previous year:
 - Murders were 13% lower during the Crime Plan year
 - Robberies were 17-22% lower during the Crime Plan year depending on robbery type
 - Aggravated assaults (non-family violence) were down 5% in the Crime Plan year
- City-wide victims:
 - 8% lower in the Crime Plan year compared to the previous year

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Temporal assessment of crime in grids

- Research Questions:

1. What are the crime patterns in treatment and catchment area grids over time?
 - a. What is the long-term effect on crime once treatment is removed?
 - b. Is there evidence of displacement or diffusion of benefits (see below for discussion of these concepts) in the catchment areas?
 - c. How does treated grid crime relate to city-wide crime levels?
2. Is a change in grid crime linked to the treatment itself rather than to naturally occurring patterns or other non-treatment influences on crime in the grids?

- Analytic approach (Data: July 2020-June 2022):

1. Grids by months/periods
2. Grids vs. city-wide crime
3. Difference-in difference analysis

Crime in grids – Months/Periods

	Pre-Treatment Monthly Average (Jul 2020-Apr 2021)	Treatment Monthly Average (May 2021-Aug 2021)	Post-Treatment Monthly Average (Sep 2021-Jun 2022)
P1 Treatment Grids	28.5	19.3 (-32.5%)	18.1 (-36.5%)
P1 Catchment Grids	54.5	52.3 (-4.1%)	46.9 (-13.9%)
	Pre-Treatment Monthly Average (Jul 2020-Aug 2021)	Treatment Monthly Average (Sep 2021-Dec 2021)	Post-Treatment Monthly Average (Jan 2022-Jun 2022)
P2 Treatment Grids	30.4	18.0 (-40.8%)	18.3 (-39.7%)
P2 Catchment Grids	66.4	56.8 (-14.5%)	60.8 (-8.3%)
	Pre-Treatment Monthly Average (Jul 2020-Dec 2021)	Treatment Monthly Average (Jan 2022-Mar 2022)	Post-Treatment Monthly Average (Apr 2022-Jun 2022)
P3 Treatment Grids	26.1	15.3 (-41.3%)	19.0 (-27.2%)
P3 Catchment Grids	68.6	60.7 (-11.5%)	68.0 (-0.8%)

Crime in grids – Grids vs. city-wide

- Grids were grouped into periods and to assess how much of city-wide crime they accounted for in the pre-treatment period (standardized to 10 months for all groups) compared to the post-treatment periods
- This analysis should not be interpreted to mean that city-wide crime necessarily fell as a result of the treatment applied to selected grids
- It is an assessment of the impact on crime in the grids relative to the broader patterns in the city

	Previous 10 Month Average	Treatment Average	% Change in Contribution
P1 Grid Crime - % of City-Wide	4.8%	3.2%	-33%
P2 Grid Crime - % of City-Wide	5.8%	3.5%	-40%
P3 Grid Crime - % of City-Wide	5.3%	3.0%	-40%
P4 Grid Crime - % of City-Wide	4.9%	2.2%	-55%

Crime in grids – Diff in diff analyses

- It is important to distinguish between an *outcome* effect when crime is reduced in the targeted areas vs. an *impact* effect in which the reduction in crime is a result of the actions taken to affect that change.
 - On average, violent crime fell more than 50% in the treated grids during the treatment periods compared to the three months leading up to treatment.
 - The period hot spots data also have revealed a recurring pattern of large crime spikes in grids targeted for treatment prior to the start of treatment, followed by falling crime levels in the targeted grids even *before* treatment began.
- Limitation of outcome analyses: regression to the mean

Crime in grids – Diff in diff analyses

- Specific questions to address with this analysis:
 1. What was the *overall average treatment effect* in the treated hot spot grids relative to non-treated grids?
 2. Was there evidence of *crime displacement* to grids immediately surrounding the treated grids, again relative to other non-treated grids?
 3. Did *crime reduction benefits persist* after treatment ended?

	Coefficient	Robust Std. Err.	Impact on Crime
Average Treatment Effect	-.107***	.026	-10.7%
Average Catchment Effect	-.004**	.001	-0.04%
Average Post-Treatment: Month 1	-.117	.072	-11.7%
***p≤0.001, **p≤0.01, *p≤0.05			

Crime in grids – Summary

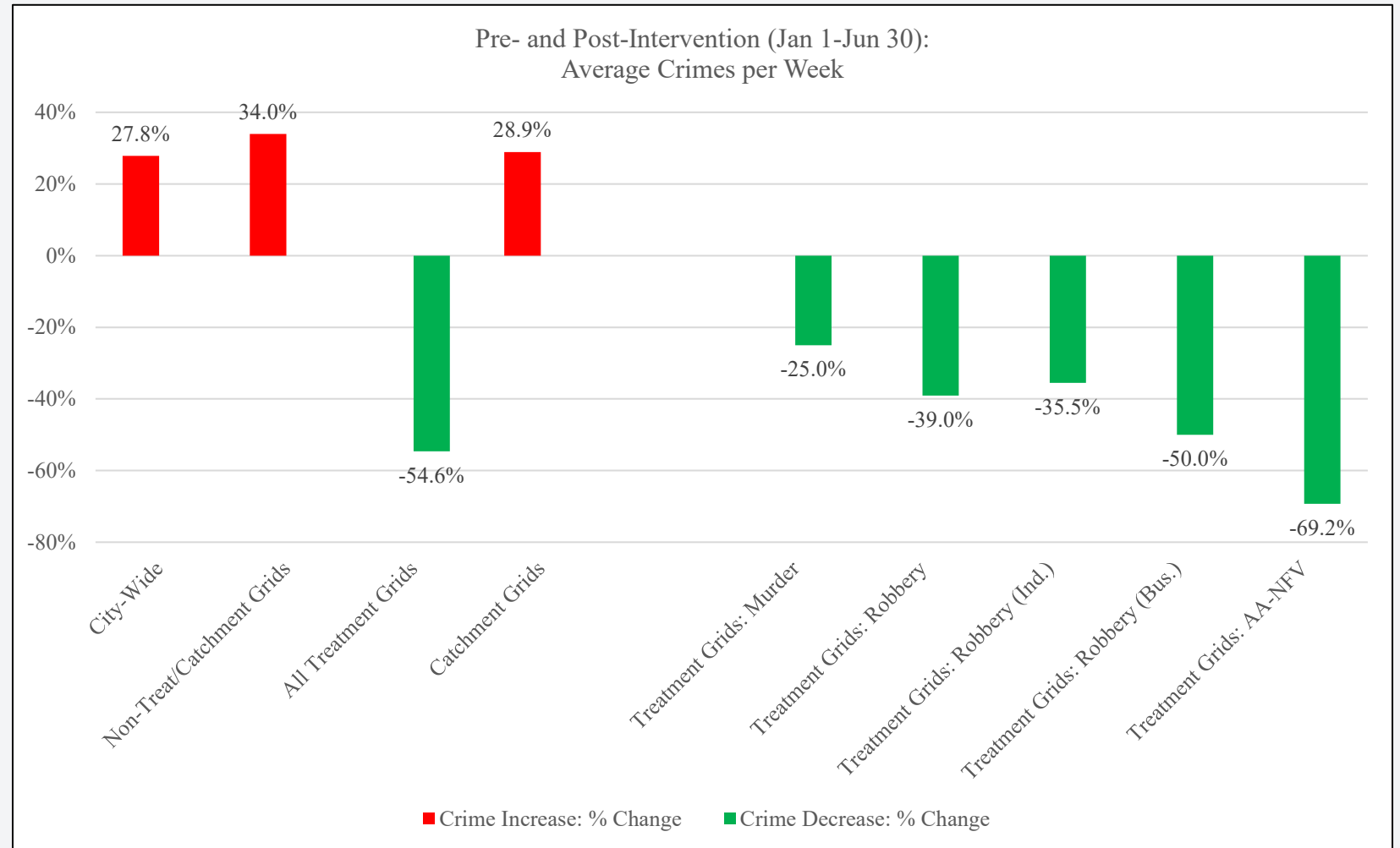
- Months/Periods:
 - In treatment grids, the monthly average of violent crime incidents in treatment grids dropped between 33-41% when compared to the pre-treatment monthly averages
 - Once treatment was discontinued, the treated grids continued to experience noticeable reductions in monthly crime compared to the pre-treatment period (between 27-40%)
- Grids vs. city-wide:
 - In the 10 months prior to treatment, the treatment grids accounted for approximately 5% of city-wide violent crime
 - Once treatment was applied (across four periods), the contribution of violent crime in grids accounted for between 2 and 3% of city-wide crime
 - Thus, by only treating approximately 115 of the roughly 101,000 grids across the city, the percentage of crime city-wide contributed by those grids was reduced by more than 40%.
- Difference in difference analysis:
 - Treatment grids averaged a 10.7% reduction in violent crime incidents
 - Crime fell slightly (0.4% on average) in catchment area grids

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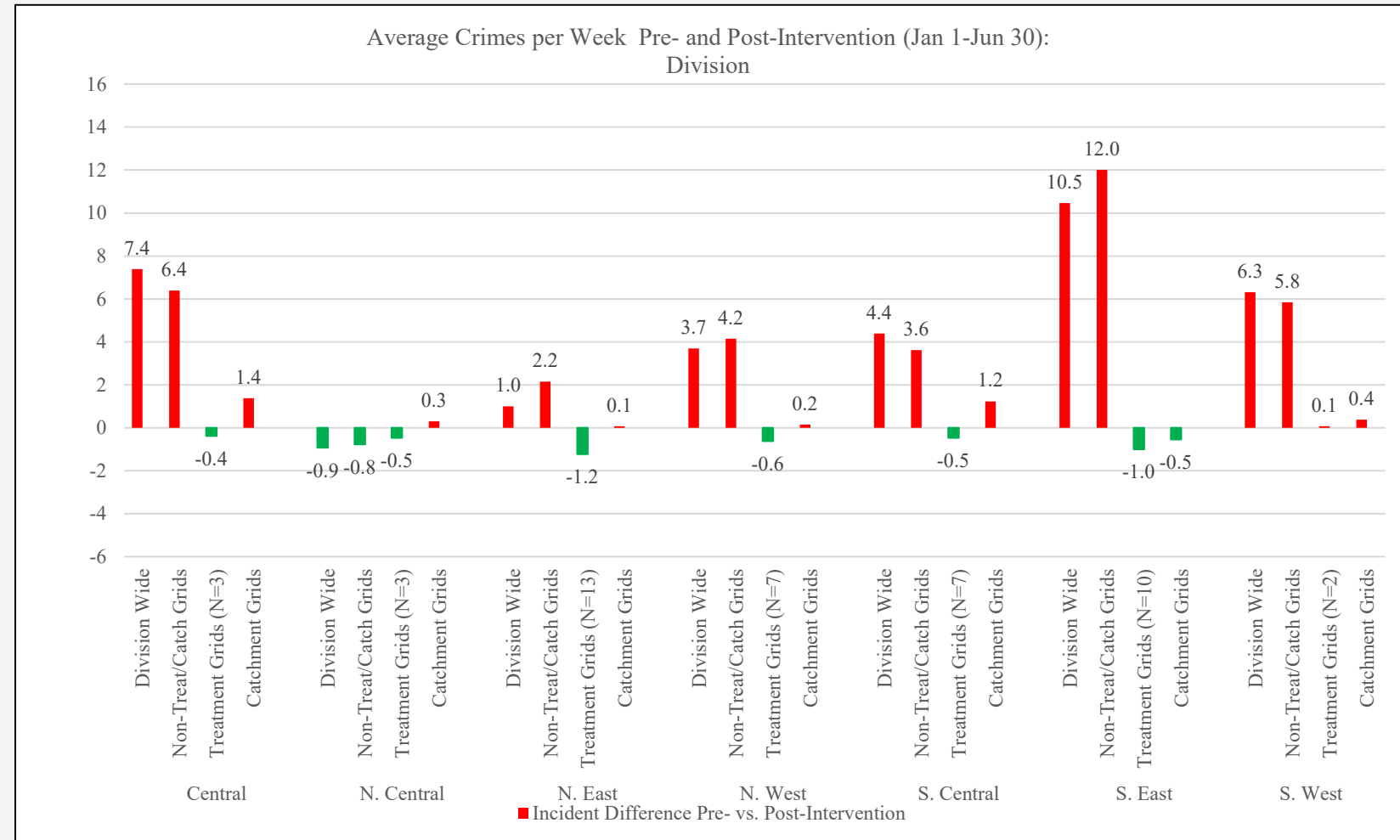
P4 treatment – Violent crime

- Data: Jan 1, 2022-Jun 30, 2022
(Treatment: Apr 1-Jun 30)
- Comparison: 3 months of pre-treatment vs. 3 months of treatment



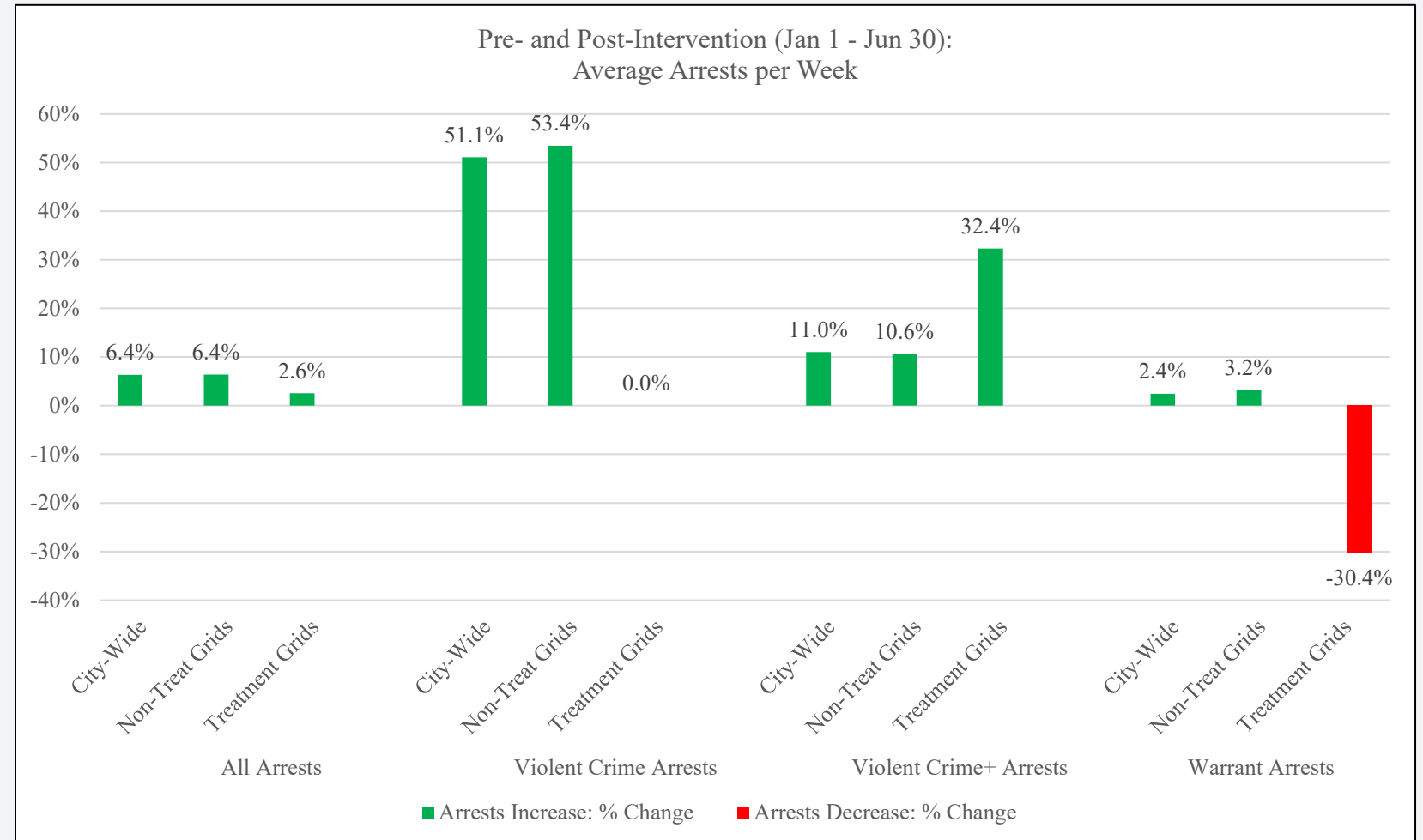
P4 treatment – Violent crime

- Division Crime: Six of the seven divisions experienced a *reduction* (green bars) in average weekly crime incidents in the post-intervention period
- Division Spillover: Six of the seven divisions experienced a slight *increase* in post-intervention average weekly crime incidents; however, five of the six has lower crime than non-treated grids = no displacement.



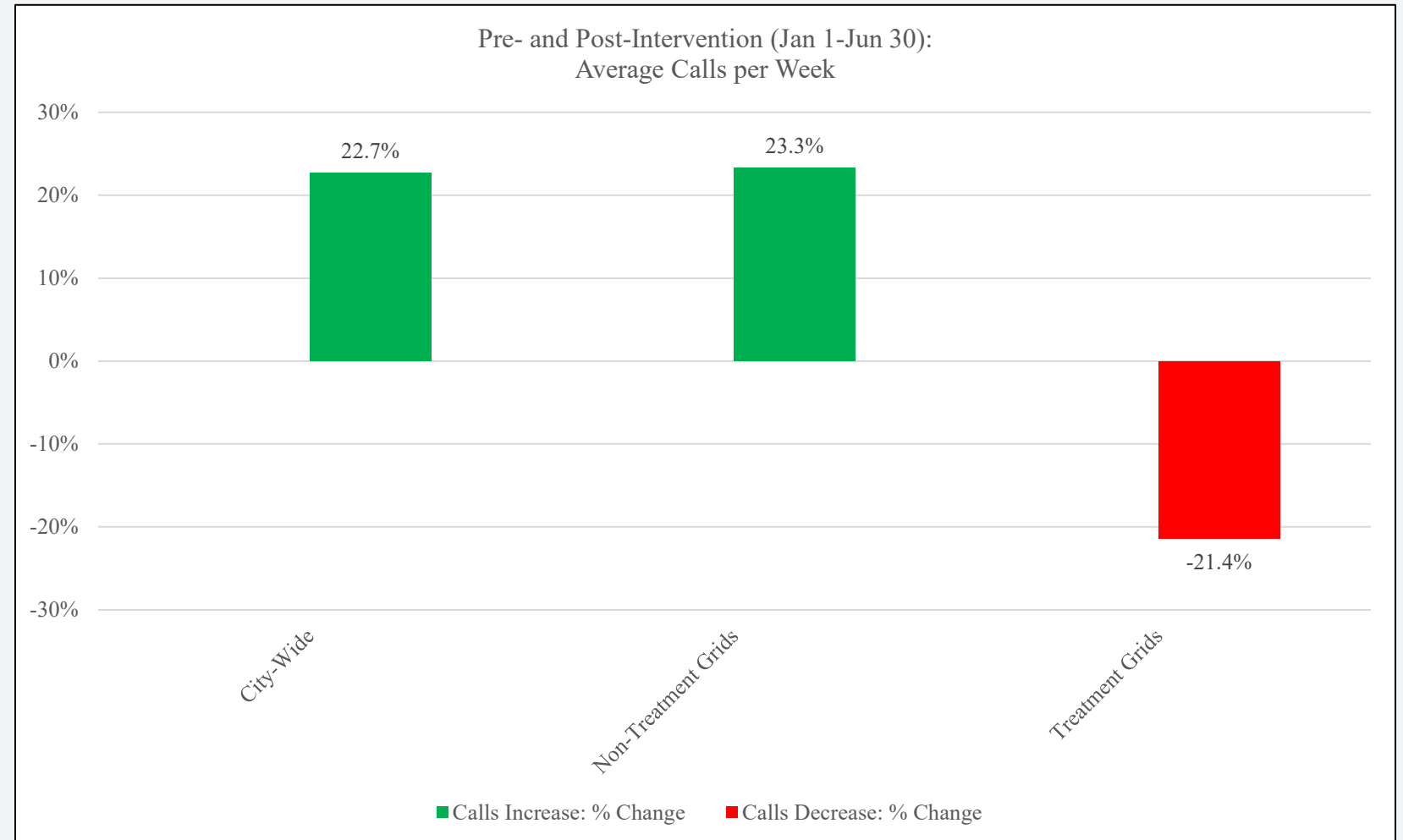
P4 treatment – Arrests

- Arrests increased 6.4% city-wide, but increased only 2.6% in the treatment grids.
- Warrant arrests fell by 30% in treatment grids, which contrasted with an increase in warrant arrests elsewhere (3%)



P4 treatment – Calls for service

- Roughly 23% increase in calls for service city-wide
- A 21% reduction in treatment grids



P4 treatment - Summary

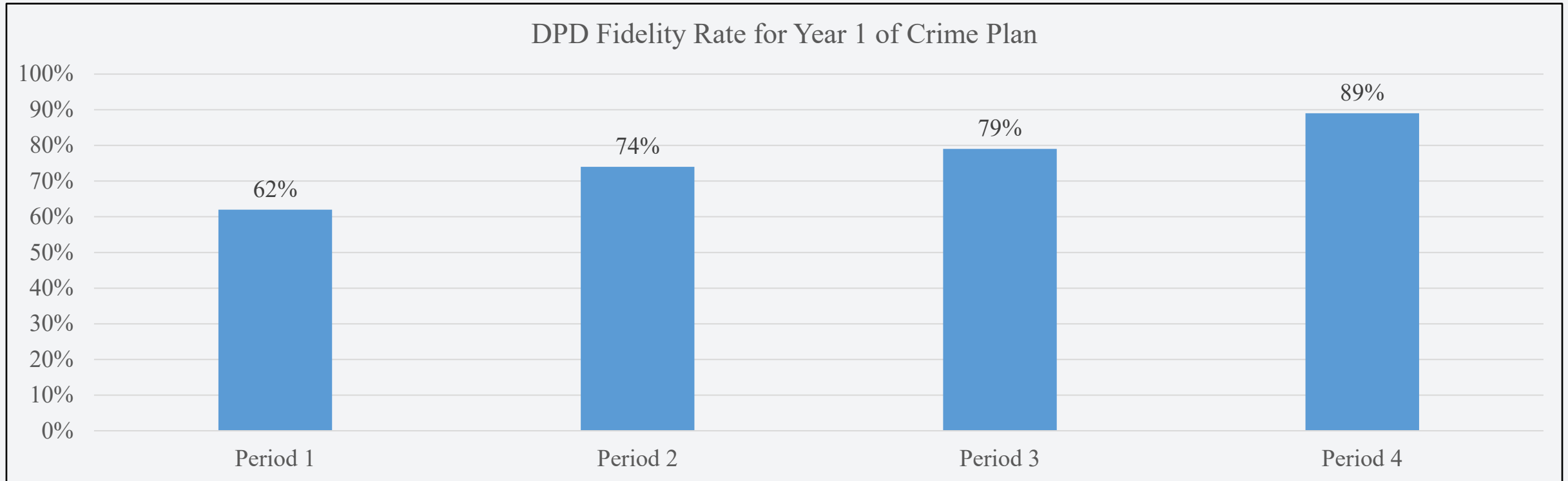
- Data: Jan 1, 2022-Jun 30, 2022 (Treatment: Apr 1-Jun 30)
- Comparison: 3 months of pre-treatment vs. 3 months of treatment
- City-wide: violent crime up 27.8%
- Treatment grids: violent crime down 54.6% (equal effect from the two treatments)
- Catchment grids: violent crime up 28.9% but
- Arrests increased 6.4% city-wide, but increased only 2.6% in the treatment grids.
- Warrant arrests fell by 30% in treatment grids
- Roughly 23% increase in calls for service city-wide
 - A 21% reduction in treatment grids

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DPD Crime Plan Compliance (Fidelity)

- Fidelity: The extent to which the DPD deployed officers to the designated high visibility treatment grids during the appropriate days and times identified in the treatment plans



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PNI – Methodology

- A problem-focused investigation of violence-prone locations
- Multi-agency effort that included OIPSS, Code Enforcement, etc.
- Two locations were selected: Ferguson Rd. & Overton Rd.
- Activity was initiated in February 2022

PNI – Implementation

- Three process categories: Substantial progress, Partial implementation, Little to no progress
 - 15 process measures at the Ferguson Rd. site:
 - Substantial progress: 3
 - Partial implementation: 7
 - Little to no progress: 5
 - 19 process measures at the Overton Rd. site:
 - Substantial progress: 4
 - Partial implementation: 8
 - Little to no progress: 7

PNI – Impact at Ferguson Road

- Metrics:
 - Reported violent offenses and victims of violent crime
 - Homelessness-related calls for service and arrests
 - Drug sales and drug-related violent crimes
 - Gang-related violent crime and documented gang members in the area
- By most measures, violent crime *increased* at this location after the PNI strategy was put in place in February 2022
- Homeless-related calls for service increased from 15 to 19 pre-post implementation, while homeless-related arrests decreased slightly.
- Drug-related sales and arrests *decreased* by two thirds.
 - However, data for homeless-related arrests and drug-related crime are not systematically collected by the DPD in its RMS system and should be interpreted with caution
- No gang related data were available

PNI – Impact at East Overton Road

- Metrics:
 - Family violence offenses and victims
 - Non-family violent crimes and victims
 - Gang-related violent crime and victimization
 - Drug sales and drug-related violent crimes
 - Calls for service related to loitering or suspicious activity
- Crime reductions were seen across all categories of family and non-family violence incidents and victims post-intervention
- Drug-related sales and incidents were unchanged
 - However, data for homeless-related arrests and drug-related crime are not systematically collected by the DPD in its RMS system and should be interpreted with caution
- Gang related data and calls for service for suspicious activity were not captured systematically

PNI – Summary

- Implementation assessment revealed some gaps that need to be addressed
 - Lack of data on some specific metrics
 - Challenges of coordinating a multi-agency effort
 - Lack of experience with this type of strategy.
- A comprehensive outcome evaluation for the two pilot sites is somewhat premature as PNI related activity has only intensified in the past couple of months
- To date, metrics (i.e., crime, victims, arrest, and calls for service) do not reveal a quantitative violent crime reduction impact at the Ferguson Rd. location. A substantial crime reduction effect was documented at the Overton Rd. site pre vs. post-PNI implementation.

Conclusion & Recommendations

- Direct evidence that the hot spots strategy reduced crime in targeted grids during Year 1
 - Inferential evidence that the city-wide reduction in violent crime (-12%) compared to the prior year was primarily driven by the hot spots strategy
- PNI strategy was successful in reducing violent crime at one of the City's historically persistent hot spots (Volara Apartments, 3550 E. Overton Rd)
 - Additional work is needed at the Ferguson Road site, but new DPD personnel and PNI re-organization are having recent impacts not captured in the Year 1 evaluation
- **Recommendations**
 - Randomized experiment to add proactive police activities to selected high visibility grids in Periods 6 and 7
 - Add additional PNI sites; develop and transition 3550 E. Overton to a maintenance strategy
 - Begin Focused Deterrence as soon as practical