

City of Milwaukee Settlement Agreement

Analysis of 2022 Traffic Stops, Field Interviews, No-action Encounters, and Frisks



Prepared by the Crime and Justice Institute

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The photo on this cover depicts “The Mural of Peace,” painted in 1994 by Milwaukee artist Reynaldo Hernandez. The mural is located on the south wall of the Mercantile Lofts building. You can learn more about this mural and Reynaldo Hernandez on the Milwaukee Mural Map website, <http://mkemuralmap.com/reynaldo-hernandez/>. Photo taken by Andrea Tyree of the Crime and Justice Institute during a May 2023 site visit.

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Introduction

This report provides a detailed explanation of the process and findings of the annual data analysis required by the Settlement Agreement among the Parties to *Charles Collins, et al. v. City of Milwaukee, et al.*¹ The full report required by the Settlement Agreement (SA V.A.9)² provides determinations of compliance for each stipulation detailed in the Agreement. A summary of the detailed findings offered in this report is presented in the Compliance chapter of the Crime and Justice Institute's (CJI) Fifth Annual Report.³

The Settlement Agreement (SA V.A.5-8) stipulates that the Consultant (CJI) utilize specific data sources, regression protocols, and hit rate analyses to measure the Milwaukee Police Department's (MPD) compliance with the Fourteenth Amendment of the U.S. Constitution and Title VI of the Civil Rights Act of 1964 in conducting traffic stops, field interviews, no-action encounters, and frisks. The intent of the analysis in this report is to determine the impact of a person's race or ethnicity on the likelihood of a police encounter while controlling for crime and population characteristics of each of the police districts.

The analyses conducted for the current report are the fourth in this series and are based on quarterly police encounter data provided to CJI for the calendar year 2022. These data are also submitted by MPD to the Fire and Police Commission (FPC) for public consumption and Plaintiffs' counsel per the Settlement Agreement. CJI's Fifth Annual Report provides more details about the data elements, completeness, and differences between the data included in each quarterly extraction. Per SA V.A.3 descriptive reports on the samples used for the analysis of individualized, objective, articulable, reasonable suspicion (IOARS) of traffic stops, field interviews, no-action encounters, and frisks were published in October 2022 and April 2023.⁴

Consistent with the requirements of the Settlement Agreement, four main analyses are detailed in this report on 2022 police encounter data:

1. (SA V.A.5) Regression analysis regarding traffic stops, field interviews, no-action encounters, and frisks,
2. (SA V.A.6) Regression analysis regarding individualized, objective, and articulable reasonable suspicion (IOARS),
3. (SA V.A.7a) Hit rate analysis of frisks and contraband discovery, and
4. (SA V.A.7b) Hit rate analysis at the police district level to test for the possibility that traffic stops, field interviews, no-action encounters, or frisks may be higher for all people in majority Black or majority Hispanic/Latino neighborhoods.

As allowed by the Settlement Agreement (SA V.A.8.d) we have augmented the required analysis with additional robustness checks and present them in this report where relevant. Of note, in the Fourth

¹ Order and Settlement Agreement (July 23, 2018). *Charles Collins, et al. v. City of Milwaukee, et al.*, (17-CV-00234-JPS) United States District Court Eastern District of Wisconsin Milwaukee Division.

² Citations to a specific paragraph of the Settlement Agreement follow the text that relies on that paragraph and appears in parentheses containing "SA" followed by the paragraph number.

³ Crime and Justice Institute. (September 2023). *City of Milwaukee Settlement Agreement: Fifth Annual Report*.

⁴ <https://city.milwaukee.gov/fpc/Reports/Crime-and-Justice-Institute-Reports.htm>

Annual Data Report we adjusted the traffic stop regression analysis to use a Census population benchmark rather than drivers' license data, as updated drivers' license data are unavailable.⁵ The drivers' license data used in prior analyses was from 2015 and we deemed that out of date to be used as a benchmark for 2021 data. We reanalyzed traffic stop data for 2019 and 2020 with this adjusted benchmark to ensure consistency in analyses over time. We continue to use the Census population benchmark in the analysis of 2022 data for the current reporting period.

This report begins with a section describing the data sources used in the analysis and how datasets were developed. This includes a detailed description of how the MPD encounter data files are merged by CJI in order to develop a complete picture of data available for each person involved in each police encounter. The second section provides population information about the city of Milwaukee and demographic information about the seven MPD districts. Subsequent sections of this report provide a detailed discussion of findings for each of the four main analyses listed above. A summary and conclusion provided in the final section of this report are also presented in the Fifth Annual Report.

⁵ Crime and Justice Institute. (September 2022). City of Milwaukee Settlement Agreement: Year Four Data Analysis Report. <https://city.milwaukee.gov/fpc/Reports/Crime-and-Justice-Institute-Reports.htm>

Data Sources

Data sources referenced in this report include MPD encounter data, Milwaukee crime data, and the U.S. Census Bureau’s 2021 American Community Survey 5-Year Estimates. Subsections below provide information about these data sources and how they were developed for use in this analysis.

Encounter Data from Milwaukee Police Department

The analysis for this report is based on data extractions provided to the Parties of the Settlement Agreement and CJJ by the MPD for calendar year 2022. Data were provided quarterly, within 45 days from the end of each quarter. Table A-1 summarizes the data delivery date, and encounter totals by type and quarter.

Per paragraphs IV.A.3.a-l the Settlement Agreement requires MPD to provide specific data elements for traffic stops, field interviews, and no-action encounters that indicate the nature of the encounter, details about when and where it occurred, information about the officer(s) involved in the encounter, and written narratives by officers that detail the IOARS for making the stop or carrying out any frisks or searches during the encounter. A full listing of the data elements provided by MPD in the extractions and the completeness of those records are detailed in the Analysis section of the Compliance chapter of the Fifth Annual Report. The following section discusses how the data files provided by MPD are merged to develop the data sets analyzed for this report and data sets developed for the above-referenced semiannual reviews of IOARS published in using these data.

The Merge Process⁶

The extraction comes from four different databases: MPD’s Computer Aided Dispatch (CAD), MPD’s records management system (RMS), the state of Wisconsin’s Traffic and Criminal Software application (TraCS), and MPD’s Administrative Investigations Management (AIM) system. No-action encounters and field interviews are documented in RMS and traffic stops are documented in TraCS. The encounters in RMS and TraCS are associated with the CAD information via the CAD or call number, which is a nine-digit number MPD utilizes as the unique encounter identifier for these data. The data linkages chart in Appendix F offers a graphic representation of the data files provided in the extraction process and how we link the files together for the purposes of our analysis. Appendix G offers a more general look at how the data files connect to each other within each of the databases.

To begin, we merge data files containing the involved officer(s) for each field interview and a data file containing the involved officer(s) for each no-action encounter with the Department roster file based on the badge number of each officer. This associates officer names to badge numbers in RMS data files.⁷

We merge the CAD database files as the first in an iterative process to associate TraCS, RMS, and AIM information to the CAD, or dispatch information for each traffic stop, field interview, and no-action encounter. To merge the CAD files, we begin with officer information. We associate a data file containing CAD call keys to data containing each squad (car) unit that responded to a given call and a

⁶ The merge process describes how CJJ links data files together to create data sets for analysis.

⁷ “INFORM_FIELDINTERVIEWOFFICER” and “INFORM_NOACTIONENCOUNTEROFFICER” are merged with “DEPARTMENT_ROSTER” via “officername_code” in the RMS files and “badge” in the department roster file.

data file containing each officer that responded to a given call.⁸ The squad unit data is merged by the call key number, and the responding officer data is merged on both the call key and the unit key that is specific for the unit or squad involved on the call. To merge district information, we associate the CAD call key data to the reporting district information.⁹ The resulting file represents an observation (row) for each CAD call in the extraction data and the associated date, time, location, CAD-specific call types, and officer involvement (e.g., arresting officer, officer assisting, supervisor or approval officer). We then begin to incorporate the CAD file with the three different encounter types present in the data.

To connect the no-action encounter files to the CAD information, we merge the no-action encounter data files with data containing the involved officer(s) for each no-action encounter and data containing the person information for each individual no-action encounter. Both data files are merged based on the unique identifier given for each no-action encounter event.¹⁰ We merge the no-action encounter file with the no-action encounter file containing person (subject of the encounter) information. This creates a file consisting of all no-action encounters where each row is a unique person involved in the no-action encounter. We then merge the CAD encounters file with the person-level no-action encounter file using the CAD number.¹¹ The no-action encounter data in the file entitled “CAD_NOACTIONENCOUNTER_DISPOSITIONS” include a code for the disposition or result of the call, and we use the provided CAD disposition file as a descriptor for the disposition codes.¹² This merge process results in a merged file for no-action encounters that represents an observation for each person involved in a no-action encounter and the associated CAD information.

To relate the field interview files to the CAD information, we merge the field interview data files with data containing the involved officer(s) for each field interview and data containing the person information for each individual involved in a field interview.¹³ These are both merged using the unique field interview identifier. Similar to the merged no-action encounter file, we create a field interview file representing an observation for each person by merging the field interview file with the field interview file containing the person information. We then merge the aforementioned CAD encounter file with the merged field interview file using the CAD number.¹⁴

⁸ “CAD_PCARSCALLUNITASGN” provides individual officer information, “CAD_PCARSCALLUNIT” is the file for each squad, and “CAD_PCARSCALL_Joined” is the file containing the main CAD information. These files are associated with each other using the “callkey” field.

⁹ “CAD_PCARSCALL_Joined” has a field called “rep_dist” that associates with “area” in “Reporting_districts.”

¹⁰ The “noactionencounter_id” is the unique no-action encounter identifier in “INFORM_NOACTIONENCOUNTEROFFICER” and “INFORM_NOACTIONENCOUNTERPERSON” that links to “id” in “INFORM_NOACTIONENCOUNTER_JOINED.”

¹¹ “INFORM_NOACTIONENCOUNTER_JOINED” indicates the CAD number is “cadnumber” and this is matched with “call_no” in “CAD_PCARSCALL_Joined.”

¹² MPD provides a PDF file that lists the descriptions for each CAD disposition code. For example, “C21” is the CAD disposition code for “no-action encounter.”

¹³ The “fieldinterview_id” field is the unique field interview identifier in “INFORM_FIELDINTERVIEWOFFICER” and “INFORM_FIELDINTERVIEWPERSON” files that link to “id” in “INFORM_FIELDINTERVIEW_JOINED.”

¹⁴ “INFORM_FIELDINTERVIEW_JOINED” indicates the CAD number is “cadnumber” and this is matched with “call_no” in “CAD_PCARSCALL_Joined.”

The State of Wisconsin requires all law enforcement agencies document traffic stops using the TraCS database. TraCS includes a contact summary form which consists of information about the nature of the encounter and demographic information about the subject involved. We merge data containing encounter-level information for a given traffic stop with data containing information for each individual involved in a traffic stop using the database-generated primary key of a given traffic stop.¹⁵

We merge the contact summary narrative file with the contact summary file containing involved individuals.¹⁶ This creates a file consisting of all contact summaries where each row is a unique person. We then merge the person-level contact summary information (i.e., consent to search, a search or frisk basis, contraband discovery) with the data file containing each individual involved in a traffic stop by a database-generated individual key.¹⁷ We also merge information from a data file containing details of any vehicle search that may have occurred (“TRACS_CONTACTSUMMARY_UNIT”), and we use the TraCS location file to associate the contact summary with the geographic information available for the encounter.¹⁸ To associate any warnings that were issued for the stop, we use the database-generated primary key (“prdkey”) to merge warning data with warning violation data, which includes the outcome of the stop.¹⁹

The structure and association of the TraCS files require each of the different forms (contact summary, electronic citation, warning, and non-traffic citation) to relate back to the TraCS header file before creating datasets that represent all the associated information present for a person involved in a given police encounter. Invalid CAD numbers in citation and warning forms present the greatest challenge to this process in that the only way to associate citations or warnings to contact summaries or field interviews is to rely upon valid CAD numbers that match across the different forms. For example, if an officer makes a traffic stop and decides to issue a citation for speeding, documentation for the traffic stop would be present in the CAD files and there would be a row in the TraCS header file for the contact summary for the person involved in the traffic stop and another row for the speeding citation. Additional rows represent any warnings the officer may issue or additional contact summaries for passengers that may need to be documented. Associating all of this information in order to represent one traffic stop requires the officer to record the correct CAD number on each form that matches the dispatched CAD number for that particular traffic stop.

¹⁵ The keys are indicated in the data linkages charts presented in Appendix F, and are called “collkey” in “TRACS_INDIVIDUALS” and “TRACS_LOCATION” and “prdkey” in “TRACS_CONTACTSUMMARY_JOINED,” “TRACS_CONTACTSUMMARY_INDIVIDUAL,” and “TRACS_CONTACTSUMMARY_UNIT.”

¹⁶ “TRACS_CONTACTSUMMARY_JOINED” merges with “TRACS_CONTACTSUMMARY_INDIVIDUAL” using “prdkey.”

¹⁷ “TRACS_INDIVIDUALS” is a file for the demographic information (race, date of birth, and sex) for each person listed on a form in TraCS (contact summary, citation, or warning). This file is merged with contact summaries by associating “collkey” in “TRACS_INDIVIDUALS” with “prdkey” in “TRACS_CONTACTSUMMARY_INDIVIDUAL.”

¹⁸ “TRACS_LOCATION” is associated with “TRACS_CONTACTSUMMARY_JOINED” via “collkey” and “locationcolkey” in the two files, respectively.

¹⁹ “TRACS_WARNING_JOINED” and “TRACS_WARNING_VIOLATION” are associated with encounter data through the “TRACS_PRD_HEADER” file using “prdkey” and the link.

The TraCS data file structure is such that each form (contact summary, electronic citations (ELCI)²⁰, non-traffic citations (NTC), or warning) is represented as an observation in the “TRACS_PRD_HEADER” file, which contains the badge information for the involved officer, a contact descriptive narrative, and any case numbers generated from the TraCS form. In order to associate each type of form with the location and individual information that exists for the form, we merge “TRACS_INDIVIDUALS” and “TRACS_LOCATION” with each of the TraCS forms prior to merging the forms into “TRACS_PRD_HEADER” using a process similar to the associations for contact summaries described above.

We merge the TraCS header file with a data file containing imported citations that are matched to a person-level identifier, the Master Name Index (MNI), in TraCS using the case number.²¹ We then merge all of the ELCI files together to create a single file with all of the ELCI data, where each observation is a unique person per ELCI. We complete this process for NTCs, warnings, and contact summaries. We then merge the TraCS header data file with each of the TraCS form files (contact summary, ELCI, warning, and NTC) using the primary key “prdkey”. This creates a file in which each observation represents a form from TraCS and the available location, officer, and person information associated with that form. We then associate the TraCS form file to CAD based on the CAD number represented in the merged CAD encounter file.²²

Finally, we append the files containing no-action encounters, field interviews, and traffic stops. This creates a file representing all encounters in a given quarter where each observation represents a unique person involved in the encounter. MPD provides a file from their Administrative Investigations Management system (AIM), a database in which supervisors and command staff record and track, among other administrative information, uses of force that occur during encounters in that time period. The AIM file is merged with the final file using the CAD number as the unique encounter identifier.²³ We also merge the CAD segments which represent additional narrative for traffic stops.²⁴

Data Cleaning and Data Loss

There are a number of fields present in the encounter data files that represent manually entered information, denoted in the data dictionaries provided by MPD with the data extractions. As it is used as the primary encounter identifier for these data, the CAD number is an important field that brings together all associated information about a given police encounter across multiple databases. While the CAD number in the CAD database files is automatically generated when dispatch is notified about an

²⁰ MPD also refers to electronic citations (ELCI) as “uniform traffic citations,” or UTC.

²¹ Merging the MNI number provided in “INFORM_ELCI” to “TRACS_PRD_HEADER” is the only means by which to associate a specific person (based on their MNI) with a traffic encounter. MNI is an identification number associated with each person that has information in MPD’s databases. A person may have more than one MNI associated with their name if they have aliases in the databases.

²² The CAD number in TraCS forms files in the extraction data is represented as “documentpolicenumber” and associates to “call_no” in the “CAD_PCARSCALL_joined” file.

²³ “cad_call_number” in “AIM_USE_OF_FORCE” is associated with “documentpolicenumber” in TraCS form files and “call_no” in “CAD_PCARSCALL_Joined.”

²⁴ “call_no” in “CAD_REGULAR_STOPREASON_CALLSEGMENTS” and “CAD_EMBEDDED_STOPREASON_CALLSEGMENTS” is associated with the call number in the primary CAD file.

encounter, the CAD number field represented in RMS (“cadnumber”) and TraCS files (“documentpolicenumber”) must be manually entered by officers when documenting field interviews or no-action encounters in RMS or contact summaries in TraCS.

Relying on manual entry for any coded field poses a risk of data loss if the field is intended to be associated with other data within or between databases. For example, the CAD number generated by dispatch may be 505050505, but the officers enter “50-505-0505” into TraCS or RMS when filling out forms associated with the call. To prevent data loss, we clean the CAD number field for TraCS and RMS data to remove obvious data errors such as dashes or spaces. Matching CAD information to TraCS or RMS information is essential for gaining a complete understanding of the data elements present or missing from documentation of each encounter.²⁵

The ability to combine information about a given police encounter hinges on the accuracy of the encounter identifier (the CAD number) across data files derived from multiple databases. Table A-2 represents CAD and AIM data we are unable to merge with other encounter information and thus are not incorporated into the merged encounter files for analysis. These data may represent additional encounters but without the documentation provided in the TraCS and RMS databases, we are unable to appropriately categorize them by encounter type.

Table A-1 provides estimated encounter totals by quarter and type of encounter, including a column for encounters categorized as “Citation or Warning Only.” These totals represent the number of citations or warnings we are unable to categorize as traffic stops or field interviews because they do not match to contact summaries or field interview forms in those databases. MPD indicates that there are several possible reasons why citations may not match to other encounter data. The form may have been generated by mistake and thus not capable of being matched to other forms that would also not exist. The officer may have mistyped the CAD number on the citation, warning, contact summary, or field interview form and thus a match could not occur across forms.

Population and Sample Characteristics

The encounter data provided by MPD for 2022 includes an estimated 31,081 traffic stops, 1,212 field interviews, and 49 no-action encounter events documented by officers.²⁶ Of these encounter events, 225 encounters involved frisks. Frisks are defined as “forcible frisks” which excludes frisks that are conducted for conveyance in a squad car (e.g., transporting a person from one place to another) or as searches incident to arrest (i.e., a cursory check before placing a person in a squad car after an arrest decision has been made). In TraCS officers can select “patdown” in the “individual search basis” field and in RMS officers can select “yes” in the “pat down description” field. If officers select “arrest” as an additional search basis in TraCS or note an arrest in RMS, we further explore the officer-written narratives to understand whether the frisk was actually a search incident to arrest that occurred after

²⁵ We clean other coded fields as needed or necessary. For example, the variable “address_district_code” in “INFORM_FIELDINTERVIEW_JOINED” represents manually-entered district information. Officers usually use numerical representations of the districts but sometimes enter “DISTRICT 4” or “D1” in the field and these are recoded to their corresponding numerical representations.

²⁶ A random person per event was selected to represent each encounter event to prevent estimates from being biased by multiple-person stops.

the arrest determination was made. We also explore encounter information when officers indicated a search occurred to identify whether officers conducted a search or frisk. We search for the keywords “pat down,” “patdown,” and “frisk,” in the search basis and narrative field to denote any instances where a frisk occurred rather than or in addition to a search. The frisk totals represented in Table A-4 (and other tables referencing frisks) are frisks that occur as a part of the police encounter, excluding procedural frisks that are conducted as a requirement prior to conveyance or after an arrest determination has been made.

Table A-3 summarizes the data by encounter type and district. An additional category of encounter called “Citation or Warning Only” is included in the table and represents citations or warnings that do not have corresponding contact summaries in TraCS or field interview information in RMS. The information available for these encounters does not allow us to categorize them as traffic stops or field interviews so they are not represented in the traffic stop or field interview stop rate analyses.

As shown in Table A-3, the fewest number of police encounters occurred in District 1 (768 encounters or 2.3% of encounters for 2022) and the most encounters occurred in District 2 (6,300 encounters or 18.9% of encounters for 2022). District 2 was the leader in number of traffic stops (5,798) and field interviews (259), with District 3 documenting the highest number of no-action encounters for the year (12).

Missing Demographic Data

We discuss missing data by each data element in the Compliance chapter of the Fifth Annual Report to assess MPD’s compliance with the 14 percent missing data threshold as stipulated by SA V.1.d.i-iii. Table A-4 summarizes missing demographic information by quarter and type of encounter to offer information about how missing race, ethnicity, age, and gender information influences the analysis of the data at the encounter level. Six percent of traffic stops lack information on race/ethnicity, gender, age, or location data. Missing demographic and location data for field interviews varies from nine to twelve percent missing throughout the year. Encounters involving frisks are missing the least amount of information, with two to six percent missing demographic or location information. No-action encounters appear to lack the most demographic or location information with 16 percent missing for the year. Most of the missing demographic information for no-action encounters involves cases where officers mark “unknown” in the race, ethnicity, or gender fields when documenting no-action encounters. Given these encounters generally lack information gathering from identification documents and are by nature limited inquiries between officers and the public, missing information is likely and expected.

A comparison of the type of encounters with and without missing demographic data does not indicate a patterned exclusion of demographic information by encounter type. A patterned exclusion would suggest that the estimates developed in this analysis would be significantly different if we were able to include the stops with missing demographic data. We determined that the estimates are not biased by this exclusion by comparing proportions of encounters by district, call type, and other non-missing information that would help inform whether the encounters with missing demographics over-represent any particular demographic profile.

U.S. Census American Community Survey

We used the U.S. Census Bureau's 2021 American Community Survey 5-Year Estimates to represent population data for this analysis.²⁷ The data include population demographic characteristics by age, race, ethnicity, and sex at the Census tract level. To calculate these population demographics within each Milwaukee Police Department district, we followed the same protocol used in the drivers' license data to apportion population for Census tracts that fall within more than one district.

The following race and ethnicity classifications were constructed from the Census data:

- Individuals considered "white" are those who self-report as "white" and "not Hispanic or Latino."
- Individuals considered "Black" are those who self-report as "Black or African American."
- Individuals considered "Hispanic/Latino" are those who self-report as "Hispanic or Latino" but do not report their race as "Black or African American."
- Individuals considered "other" are those who self-report as "Asian," "Native Hawaiian or other Pacific Islander," "American Indian or Alaskan Native," "Two or more races," and "Other Race."
-

We constructed a categorical age variable from the Census data to be able to identify younger adults. Recent Census publications discuss the young adult population as individuals between 18 and 34 years old.²⁸ We use two categories to look at age composition: "young" indicating an adult under 35, and "older" indicating an adult 35 or older. Age is typically used as both a variable of interest and a control variable in explorations of police encounters as lifestyle characteristics of young adults make them more likely to encounter police. We also constructed an estimated driving population for each district and race or ethnic category by constraining population totals to individuals between the ages of 16 and 80 years old.

We use Census information to construct an unemployment rate for each police district by using estimates present within the Census data regarding unemployment and labor rate participation.

Milwaukee Crime Data

The MPD provided Part I and Part II crime data for 2021 by district and suspect race (if known). Crime data from the previous year is used in the regression estimates because past crime may influence current crime rates or police behavior in responding to crime. The analyses for the current report require inclusion of three crime variables: total crime rate, violent crime rate, and property crime rate. Violent crime categories in the data provided by MPD include Part I violent crimes (homicide, rape, robbery, and aggravated assault) and Part II crimes against persons (e.g., negligent manslaughter, simple assault). Property crime categories include Part I property crimes (burglary, theft, motor vehicle theft, and arson) and Part II crimes against property (e.g., destruction, damage, and vandalism). The total crime category adds violent and property crime together, as well as Part II crimes against society (e.g.,

²⁷ U.S. Census Bureau, 2021, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301.

²⁸ Vespa, J., & U.S. Census Bureau. (2017). *The changing economics and demographics of young adulthood: 1975-2016* (Ser. Current population reports. p20, population characteristics, 579). U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.

drug violations, weapons law violations, disorderly conduct).²⁹ District-level crime rates were developed by dividing the total, violent, or property crime totals by the resident population totals generated from the U.S. Census Bureau's 2021 American Community Survey 5-year estimates for each district.

²⁹ Part I violent crime includes: homicide, rape, robbery, aggravated assault, human trafficking (commercial sex acts), and human trafficking (involuntary servitude). Part I property crime includes: burglary, motor vehicle theft, theft, and arson. Part II crimes against persons includes: negligent manslaughter, forcible fondling, simple assault, intimidation, incest, and statutory rape. Part II crimes against property includes: extortion/blackmail, counterfeiting/forgery, false pretenses/swindle/confidence game, credit card/ATM fraud, impersonation, welfare fraud, wire fraud, embezzlement, stolen property, destruction/damage/vandalism, bribery, bad checks, and trespassing. The total crime category additionally includes Part II crimes against society: drug/narcotic violations, drug equipment violations, pornography/obscene material, prostitution, assisting or promoting prostitution, purchasing prostitution, weapons law violations, disorderly conduct, DUI, non-violent family offenses, and all other offenses.

The City of Milwaukee Population Demographics

The City of Milwaukee is the largest city in Wisconsin, with an estimated population of 578,198 residents.³⁰ According to the U.S. Census Bureau's 2021 American Community Survey 5-Year Estimates, females made up nearly 52 percent of the Milwaukee population, with the percentage of males slightly lower at 48 percent. Around thirty percent of Milwaukee residents were between the ages of 18 and 34.³¹ The estimated median household income for residents of Milwaukee in 2021 dollars was \$45,318, with 24 percent of Milwaukee residents' incomes below the poverty level. The average unemployment rate across police districts was 6.34 percent.³²

When we look at each police district, we see a different story of the City. District 1, containing the University of Wisconsin-Milwaukee, the Lake Park, Lower and Upper East Side, Historic Third Ward, and the downtown business district, had an unemployment rate of four percent according to the 2021 data.³³ District 2, which includes Walker's Point, Historic Mitchell Street, and Clarke Square, had an unemployment rate of six percent. Districts 3, 4, 5, and 7, comprising neighborhoods such as Avenues West, Miller Valley, Dretzka Park, Woodlands, Riverwest, Harambee, Sherman Park, and Enderis Park, had unemployment rates between seven and nine percent. District 6, home to Jackson Park, Bay View, and Mitchell International Airport, had an unemployment rate of four percent.³⁴

Based on the American Community Survey 5-year population estimates (2021), Black residents accounted for 39 percent of the population of Milwaukee, white residents comprised 33 percent, Hispanic/Latino residents constituted 20 percent, and residents of other races made up eight percent.³⁵ However, when we look across police districts, similar to the unemployment rate, we see a very different picture. Figure A-5 illustrates the racial composition by police district in Milwaukee. Districts 1 and 6 have the highest proportion of white residents (74 and 58 percent, respectively). District 2 has the highest proportion of Hispanic/Latino residents (72 percent). Districts 3, 4, 5, and 7 have the highest proportion of Black residents (45, 67, 70, and 69 percent, respectively). Districts 2 and 3 have the narrowest differences in proportions of white and Black residents than any other district.

³⁰ U.S. Census Bureau, 2021, American Community Survey 5-Year Estimates, Table S0101.

³¹ U.S. Census Bureau, 2021, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301, DP05

³² U.S. Census Bureau, 2021, American Community Survey 5-Year Estimates, Table DP03

³³ U.S. Census Bureau, 2021, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301

³⁴ Milwaukee Police Department, 2009 Annual Report 5,

https://city.milwaukee.gov/ImageLibrary/Groups/mpdAuthors/Documents/2009_Annual_Report.pdf; U.S. Census Bureau, 2021, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301

³⁵ U.S. Census Bureau, 2021, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301

Stop Rate Analysis (SA V.A.5)

The stop rates for this analysis are provided by race, ethnicity, and police district to offer information about how stop rates may differ by residential population. According to the U.S. Census data used in this analysis, Districts 1 and 6 include residential populations that are primarily white, District 2 has a primarily Hispanic/Latino residential population, and Districts 4, 5, and 7 are majority Black residential populations. District 3 represents a mixed racial and ethnic population, with 45 percent Black residents, 33 percent white residents, nine percent Hispanic/Latino residents, and 13 percent of residents of other races or ethnicities.

For ease of interpretation, the stop rates are presented per 1000 residents of typical driving age (16 – 80 years old) for traffic stops and per 1,000 residents for field interviews, no-action encounters, and frisks.

The traffic stop rate calculation uses residents between 16 and 80 years old as a base population to which the number of traffic stops are compared. While not all residents of typical driving age within a geographic area drive a personal vehicle and thus are not “at risk” for a traffic stop, it is the most accessible base population that can be used for this analysis at this time.

Tables B-1 through B-4 provide the traffic stop, field interview, no-action encounter, and frisk rates by district and race or ethnicity. Comparing the traffic stop rates across districts, we find that District 2, with a residential population that is 72% Hispanic/Latino, has the highest stop rates overall (107 per 1,000 residents), with District 1 at the lowest stop rate of 15 per 1,000 residents (Table B-1). District 5 has the highest field interview rate at 3.2 per 1,000 residents, with a residential population that is 70 percent Black, with District 6 at the lowest field interview rate of 1.1 per 1,000 residents (Table B-2). Table B-3 shows the no-action encounter rate is 0.1 per 1,000 residents in Districts 2, 3, 5, and 7 and lowest in Districts 1, 4, and 6 (0 per 1,000 residents). The frisk rates in Table B-4 show that Districts 2 and 5 have higher frisks per 1,000 residents than the average for the City overall (0.6 per 1,000 and 0.9 per 1,000, respectively, compared to 0.4 frisks per 1,000 residents for the City overall).

Table B-5 shows the ratio of each stop rate for Black, Hispanic/Latino, and other races as compared to white stop rates and provides a comparison across all districts in Milwaukee. In 2022, the traffic stop rate for Black residents of typical driving age (16 to 80 years old) was 3.1 times higher than for white residents and the traffic stop rate for Hispanic/Latino drivers was 1.6 times higher than for white drivers. The field interview rate for Black residents was 6.1 times higher than for white residents. No-action encounter rates, while rare overall, were 3.6 times higher for Black residents than for white residents. The differences in frisk rates were the most racially and ethnically disparate – the frisk rate for Black subjects was over eight times higher than the frisk rate for white subjects.

While descriptive of possible racial or ethnic disparities in police encounters within the City of Milwaukee, these rates do not account for factors beyond race or ethnic population in the districts that could influence differences in stop rates. The stop rate regression analysis accounts for other individual (age and gender) and district-level (crime and sociodemographic variables) characteristics that are known to influence the likelihood of a police encounter.

Stop Rate Regression Methodology

Regression analysis is specified in the Settlement Agreement to determine whether the racial and ethnic disparities in police encounters described above could be explained by other non-racial or non-ethnic factors present within the districts. The stop rate regression analyses were conducted using a linear probability model with robust standard errors clustered by district. Ten different regression specifications are prescribed by the Settlement Agreement to estimate the influence of race or ethnic identity on the likelihood of a police encounter, relative to the likelihood that white residents will encounter police:³⁶

1. Estimate of the average difference in stop rates for Black, Hispanic/Latino and other race categories relative to white stop rates, without any further controls.
2. Estimate introduces a variable to control for the encounter subject's gender.
3. Estimate introduces a variable to control for the encounter subject's age, specified as younger than 35 or 35 or older.
4. Estimate introduces district-level racial composition variables measuring the percent Black, percent Hispanic/Latino, and percent other race categories of the district.
5. Estimate introduces district-level age variable measuring the proportion of the district that is younger than 35 years old.
6. Estimate introduces a district-level gender variable measuring the proportion of the district that is male.
7. Estimate introduces district-level unemployment rate to control for the relationship between the share of the district population that is unemployed and the likelihood that it influences the initiation of police encounters.
8. Estimate introduces district-level total crime rate to control for the relationship between the level of total crime in the district and the likelihood that it influences the initiation of police encounters.
9. Estimate introduces district-level violent crime rate to control for the relationship between the level of violent crime in the district and the likelihood that it influences the initiation of police encounters.
10. Estimate introduces district-level property crime rate to control for the relationship between the level of property crime in the district and the likelihood that it influences the initiation of police encounters.

The regression specifications required by the Settlement Agreement necessitate constructing stop rates for each combination of race or ethnicity, age, gender, and district (n=112). The data for analyzing no-action encounter rates does not involve the age dimension since that information is not collected during no-action encounters (n=56). To account for potential changes over time, we also calculated stop rates to reflect time (quarter) in the traffic stop analysis, producing a total sample of 448 age-race-gender-district-quarters for analysis.

³⁶ SA V.A.5.a and SA V.A.5.b are specified in one model below as the data do not allow for investigation of race by ethnicity. Regression specifications 8, 9, and 10 that include total, violent, and property crime rates are omitted from the regression tables because these variables are significantly correlated with the unemployment rate and necessarily drop out of the model.

The data for these models develop stop rates for each demographic combination within each district. For example, the traffic stop rate for young Black males in District 3 during quarter 1 is 19 per 1,000 Black residents of typical driving age in District 3. The traffic stop rate for young white males in District 3 during quarter 1 is 3 per 1,000 white residents of typical driving age in District 3. Rates are constructed in this fashion for the remaining combinations of demographics (n=16) for each district (n=7) per quarter (n=4). This strategy allows each demographic profile of stops to be compared to the same racial or ethnic base population. This rate construction means that the model coefficients will be robust to additions of district-level control variables as this information is incorporated into the rates themselves. To correctly specify the regressions required by the Settlement Agreement, we use a modeling strategy with robust standard errors that are clustered by police district to obtain a robust variance estimate that adjusts for within-cluster correlation.

For traffic stops, the outcome of interest in this analysis is the stop rate per 1,000 potential drivers of a given race or ethnicity (r), in a given district (d) and quarter (t). Variables were then added to the model as specified by the Settlement Agreement: indicator for young (one for individuals under 35 years old and zero for 35 or older), indicator for male (coded one for males and zero for females), and district level racial composition, unemployment, and crime rates.

$$\text{Traffic Stop Rate}_{ragdt} = \frac{\text{Total Traffic Stops}_{ragdt}}{\text{Total Drivers}_{rdt}} * 1000$$

Analysis of field interviews, no-action encounters, and frisks follow the same protocols. For field interviews, the outcome of interest in this analysis is the stop rate per 1,000 residents of a given race or ethnicity (r), age group (a) and gender (g) in a given district (d). Given the lower field interview totals in the encounter data, estimates were not calculated by quarter and rather pooled for the full year.

The outcome of interest for no-action encounters is the stop rate per 1,000 residents of a given race or ethnicity (r), and gender (g) in a given district (d). Age is not a required field for officers to document for no-action encounters and thus is omitted in the analysis. Given the lower no-action encounter totals in the encounter data, estimates were not calculated by quarter and rather pooled for the full year.

For frisks, the outcome of interest is explored two ways. The Settlement Agreement specifies to estimate frisk rates by district in the same fashion as the other stop rates. The outcome of interest in this analysis is the frisk rate per 1,000 residents of a given race or ethnicity (r), age group (a) and gender (g) in a given district (d). Given the lower frisk totals in the encounter data, estimates were not calculated by quarter and were pooled for the full year.

Frisks were also investigated using a logistic regression model at the individual level where the outcome of interest (whether a frisk occurred during an encounter) is coded as one (1) if a frisk occurred during an encounter and zero (0) if documentation for the encounter did not indicate a frisk occurred. Estimates are reported using odds ratios and predicted probabilities to develop a specific understanding of the estimated differences by race and ethnicity of a frisk occurring during an encounter with police. In statistical analysis, odds ratios represent the odds of an event occurring in one group, in this case a frisk, to the odds of it occurring in another group. Predicted probabilities represent an estimate of the likelihood of something occurring for a specific group while taking into consideration the factors that may additionally influence the likelihood of that event occurring. In the current analysis, predicted

probabilities represent the estimated likelihood of a frisk occurring during a police encounter for a racial or ethnic group while taking into consideration other known factors that may also be influencing the likelihood of a frisk occurring. In this statistical context, prediction refers to the likelihood of a frisk based on the data for 2022 and does not refer to future predictions of police encounters. Three regression specifications are used for the individual-level frisk analysis:

1. An estimate of the log odds and predicted probability of a frisk occurring for Black or Hispanic/Latino drivers or residents within a district, without any further controls.
2. The second specification introduces independent variables for gender and age to control for the possibility that these attributes contribute to a person's odds of being frisked during a police encounter.
3. The third specification adds fixed effects for time of day, quarter of the year, and district the stop occurred. The time of day is specified into four time intervals (9:00 am to 2:59 pm, 3:00 pm to 8:59 pm, 9:00 pm to 2:59 am, and 3:00 am to 8:59 am). Quarters of the year follow the calendar year with the first quarter January through March, second quarter as April through June, third quarter as July through September, and fourth quarter as October through December.

We also estimated district by race interactions to identify whether the probability of a frisk for a given race or ethnic category is higher or lower in certain police districts.

Stop Rate Regression Analysis Findings

The regression analysis for rates of traffic stops, field interviews, no-action encounters, and frisks are presented in Appendix B, Tables B-6 through B-13. Tables B-6 and B-7 present the summary of variables in the traffic stop regression analysis and the results for the regression specifications detailed above. While controlling for all known predictors (Model 7), the results indicate that on average over the four quarters of 2022, the MPD stop rate was higher for Black drivers than white drivers by 10.12 per 1000 residents of typical driving age. The difference in traffic stop rates for Black residents and white residents is statistically significant at the 90 percent confidence level. The stop rate was lower for Hispanic/Latino drivers than white drivers by 0.03 stops per 1,000 residents, however this difference is not statistically significant. The traffic stop rate for residents of races and ethnicities other than Black or Hispanic/Latino were lower than white residents by 1.35 stops per 1,000 residents. This difference is statistically significant at the 95 percent confidence level.

By order of magnitude, we are able to compare the predicted traffic stop rate for white drivers using Model 1 to understand the relative difference in traffic stop rates by race. The estimated average traffic stop rate for white drivers is 2.888 per 1000 potential drivers. This indicates that the estimated traffic stop rate for Black drivers is 4.5 times higher than the traffic stop rate for white drivers, or a rate that is 350 percent higher. The estimated traffic stop rate for potential drivers of races and ethnicities other

than Black or Hispanic/Latino is 47 percent lower than for potential drivers that identify as white. The traffic stop rate for Hispanic/Latino residents is not statistically different from white drivers.³⁷

Tables B-8 and B-9 present the summary of variables in the field interview regression analysis and the results for the regression specifications. While controlling for all known predictors (Model 7), the results indicate that in 2022 the MPD field interview rate was higher for Black residents than white residents by 1.798 stops per 1,000 residents. This difference was statistically significant at the 95 percent confidence level. Given the estimated average field interview rate for white residents, the field interview rate for Black residents is 10.1 times higher than the field interview rate for white residents. The field interview rate for Hispanic/Latino residents and residents of other races and ethnicities were not statistically different from the white field interview rate.

Tables B-10 and B-11 offer the summary of variables in the no-action encounter regression analysis and the results for the various regression specifications. As discussed previously and shown in Table A-1, MPD documented few no-action encounters throughout the year. These low totals make it difficult to detect subtle variability in rates across district and race or ethnicity demographic profiles but can provide information when differences are pronounced. While controlling for known predictors (Model 6), the results indicate that in 2022 the MPD no-action encounter rate was higher for Black residents than white residents by 0.06 stops per 1,000 residents. This difference was statistically significant at the 90 percent confidence level. Given the estimated average no-action encounter rate for white residents, the no-action encounter rate for Black residents is 4.1 times higher than the no-action encounter rate for white residents.

Frisks were explored in two ways to determine whether and to what extent race or ethnicity of a resident or stop subject plays a role in the likelihood that a frisk will occur. The Settlement Agreement specifies analysis of frisks as a rate by district, similar to the estimates generated for traffic stops, field interviews, and no-action encounters. We also explored the relationship between race or ethnicity and frisks at the individual level to determine odds or predicted probability that a frisk will occur during an encounter with police. Thus, the first analysis is focused on estimating frisks among the general population and the second analysis is focused on estimating possible disparities in frisks after the decision to initiate a police encounter has already been made.

Tables B-12 and B-13 provide the summary of variables in the frisk rate regression analysis and the results for the district-level regression specifications. While controlling for all known predictors (Model 7), the results indicate that in 2022 the MPD frisk rate was higher for Black residents than white residents by 1.548 frisks per 1,000 residents. This difference is statistically significant at the 99 percent confidence level. Given the estimated average frisk rate for white residents, the frisk rate for Black residents is 8.04 times higher than the frisk rate for white residents. The frisk rates for Hispanic/Latino residents and other races (residents identified as Native American or Alaskan Native, Asian, or Native Hawaiian or other Pacific Islander) were not statistically different from the frisk rate for white residents.

³⁷ The stop rate for Black drivers equals the white stop rate of 2.888 stops per 1,000 potential drivers + 10.12 stops per 1,000 potential drivers = 13.008 stops per thousand potential drivers or $13.008/2.888 = 4.5$. The percent difference is calculated by measuring the difference between the stop rates for Black and white drivers divided by the stop rate for white drivers, multiplied by 100.

An exploration of frisk rates at the individual encounter level shows a similar pattern. Table B-14 shows frisk rates by race and type of stop. About 16 percent of field interviews result in a frisk, with frisks occurring more often for Black and Hispanic/Latino subjects than white subjects (17 percent, 13 percent, and 12 percent, respectively). Table B-15 provides the individual-level regression analysis of frisks. When controlling for time of day, time of year, and district, the odds of a Black subject being frisked during an encounter are 2.6 times that of a white subject. This result is statistically significant at the 99 percent confidence level.

To further examine how a stop subject's race and ethnicity influence the probability that the MPD officers will conduct a frisk, we also estimate a set of regressions in which a stop subject's race or ethnicity is allowed to have different effects in each district. An indicator variable for each combination of subject race or ethnicity and district allows us to understand district-specific differences in frisks by race and ethnicity. Table B-16 summarizes the predicted probabilities from the regression model estimating frisks for each race or ethnicity in each district.

Recall that District 6 is a majority-white residential population. According to Table B-16, the predicted probability for a Black subject to be frisked during a police encounter in District 6 is 0.28 percent. The predicted probability of a Hispanic/Latino stop subject getting frisked in District 6 is 0.16 percent and the predicted probability of a white stop subject getting frisked in that district is 0.23 percent. This indicates that during police encounters in District 6 for the year 2022, the predicted probability that a Black subject will get frisked is higher than for Hispanic/Latino or white stop subjects. The largest difference is found in District 1 where the predicted probability that Black subjects are frisked during an encounter with police is 2.72 percent and the predicted probability for white subjects to be frisked when encountered by police is 1.32 percent.

Table B-17 provides a compilation of the stop rate regression findings for 2019-2022. The quantities provided in the tables represent the magnitude difference in stops or frisks of each race or ethnic group as compared to white individuals. For example, in 2022, Black individuals were 10.1 times more likely than white individuals to be stopped for a field interview. To be comprehensive, Table B-17 includes traffic stop findings using both the licensed driver benchmark and the Census population benchmark for 2019, 2020, and 2021. It is important to note that there are magnitude and significance differences in traffic stop estimates depending upon whether the licensed driver or Census benchmark is used. This is likely due to the licensed driver benchmark undercounting (i.e., unlicensed drivers also drive) and the Census benchmark overcounting (i.e., not all residents of driving age actually drive) estimates of individuals on the roadways. Both benchmarks have limitations to estimating individuals at risk for a traffic stop; however, the Census benchmark is currently the only one available using the methodology required by the Settlement Agreement.

The findings presented in Table B-17 indicate that over the four years, Black residents in Milwaukee are consistently more likely than white residents to be stopped for a traffic stop, field interview, and subjected to a police encounter that involves a frisk. Further, among individuals stopped by police, Black stop subjects are consistently more likely than white stop subjects to be frisked during the encounter.

Our current analysis finds that Hispanic/Latino residents of Milwaukee are not consistently more likely than white residents to be involved in a field interview over the four years. The traffic stop analysis

findings for Hispanic/Latino residents are sensitive to the benchmark used to generate the estimates. Using licensed driver data we found a disparity present in 2019 and 2020 but did not detect a disparity when using Census information to estimate driving population for those years and in 2021 and 2022. However, similar to Black subjects, during encounters with police Hispanic/Latino stop subjects have been consistently more likely to be frisked than white stop subjects from 2019 through 2021. We found no disparity in frisks of Hispanic/Latino stop subjects as compared to white stop subjects in 2022. Our current analysis also finds that residents of races or ethnicities other than Black or Hispanic/Latino are significantly less likely than white residents to be involved in a traffic stop over the four years.

The main findings of the Milwaukee stop rate regression analysis are summarized below. For 2022, after ruling out other demographic and district-level predictors of police encounters – including age, race/ethnicity, gender, employment, and crime rates - we find:

- The traffic stop rate for Black residents of typical driving age is 4.5 times higher than for white drivers, a statistically significant difference. The traffic stop rate for Hispanic/Latino residents of typical driving age is not statistically different from the traffic stop rate for white residents of typical driving age. The traffic stop rate for residents of other races was 47 percent lower than for white residents, a statistically significant difference.
- The field interview rate for Black residents is 10.1 times higher than for white residents. This result is statistically significant. Field interview rates for residents that are Hispanic/Latino or of other races did not significantly differ from field interview rates of white residents.
- The no-action encounter rate for Black residents is 4.1 times higher than for white residents. This result is statistically significant. No-action encounter rates for residents that are Hispanic/Latino or of other races did not significantly differ from no-action encounter rates of white residents.
- The frisk rate for Black residents is 8.04 times higher than for white residents. Frisk rates for Hispanic/Latino residents and residents of other races did not significantly differ from frisk rates of white residents.
- The predicted probability of a frisk occurring after a police encounter has been initiated is 2.6 times higher for Black stop subjects than it is for white stop subjects. This result is statistically significant at the 99% confidence level. There is not a significant difference in Hispanic/Latino stop subjects experiencing a frisk as compared to white stop subjects.
- From 2019 to 2022, Black residents of Milwaukee are consistently more likely than white residents to encounter police during a traffic stop, field interview, and are consistently more likely than white residents and white stop subjects to be frisked during a police encounter. Hispanic/Latino stop subjects were also more likely than white stop subjects to be frisked during an encounter with police from 2019 through 2021, but not in 2022.

IOARS Analysis (SA V.A.6)

The regression analysis of individualized, objective, and articulable reasonable suspicion (IOARS) is based on sample data used for the two semiannual reviews of IOARS published in October 2022 and April 2023, which include an analysis of traffic stops, field interviews, no-action encounters, and frisks that took place during the 2022 calendar year. The semiannual reviews are conducted for fulfillment of SA V.A.3.a-e to measure MPD's compliance with the Fourth Amendment in conducting traffic stops, field interviews, no-action encounters, and frisks. Officers must provide "objective, individualized, and articulable facts that, within the totality of the circumstances, lead a police member to reasonably believe that criminal activity has been, is being, or is about to be committed by a specific person or people."³⁸ Additionally, for frisks to be warranted during a stop, "the police member must be able to articulate specific facts, circumstances and conclusions that support objective and individualized reasonable suspicion that the person is armed and dangerous."³⁹ The semiannual reviews for 2022 encounters offer details regarding the sampling strategy and IOARS decision rules that were used in the reviews.⁴⁰

Table C-1 includes summary statistics for IOARS documentation to justify a stop by race or ethnicity and quarter of the year. Overall, MPD met the IOARS documentation standard for most encounters, ranging from 88 percent meeting the standard in quarters 1 and 4 of 2022 and 90 percent meeting the standard in quarters 2 and 3. The majority of individuals in the sample are identified as Black, making it difficult to make comparisons to other race or ethnic categories as the proportions meeting the IOARS standard have larger fluctuations when the sample is smaller. Nonetheless, the IOARS standard was met 89 to 92 percent of the time for Black stop subjects. For Hispanic/Latino stop subjects, the percentage of stops meeting the IOARS standard was lowest in quarter 4 (82 percent) and highest in quarter 2 (95 percent).

Table C-2 provides summary statistics for IOARS documentation to justify frisks by race or ethnicity and quarter of the year. This table represents 223 frisks in the sample, broken out by quarter and race or ethnicity of the frisk subject. Documenting IOARS to justify performing a frisk during an encounter continues to fall short of the 85 percent threshold denoted in the Settlement Agreement as the acceptable minimum proportion of stops that fail to properly document IOARS (SA V.1.d.i-vii). For all race or ethnic categories, the IOARS standard was met 60 percent to 77 percent of the time throughout 2022. While MPD has improved with establishing IOARS in 2022 as compared to 2019 through 2021, the Department continues to fall below the acceptable threshold. Given that the majority of frisks occur with Black stop subjects (185 of the 223 frisks in the sample occurred with Black individuals), it is difficult to make comparisons to other race or ethnic categories. For example, one of the three frisks that occurred with white subjects in quarter 4 met the IOARS standard. While a larger percentage of frisks

³⁸ For further discussions of how IOARS determinations were made, see our previous Semiannual Analyses of Traffic Stops, Field Interviews, No-action Encounters, and Frisks at <https://city.milwaukee.gov/fpc/Reports/Crime-and-Justice-Institute-Reports.htm>

³⁹ Milwaukee Police Department Standard Operating Procedure 085 "Citizen Contacts, Field Interviews, Search and Seizure." Effective January 25, 2019.

⁴⁰ <https://city.milwaukee.gov/fpc/Reports/Crime-and-Justice-Institute-Reports.htm>

with Black subjects met the IOARS standard for that quarter (60 percent), it still means that 18 of those 45 frisks lacked proper documentation to justify the frisk.

Tables C-3 and C-4 describe the stop totals and IOARS thresholds for the stop sample and the frisk sample by district. In meeting the IOARS documentation standard for stops, District 2 had the lowest percentage of stops meeting the IOARS standard (85 percent) and District 1 had the highest percentage (100 percent). For frisks, District 7 had the lowest proportion of frisk documentation meeting the IOARS standard (52 percent) and District 6 had the highest percentage of frisks meeting IOARS (82 percent).

IOARS Regression Analysis

The regression specifications provided in SA V.A.3 were used to assess whether subject race or ethnicity is significantly related to the likelihood that documentation for the stop or frisk meets the IOARS standard. Logistic regression with robust standard errors clustered by district was used as a modeling strategy, where the dependent variable is coded one (1) if the encounter documentation met the IOARS standard and zero (0) if the IOARS standard was not met. This modeling strategy predicts whether there are significant differences by race or ethnicity in the likelihood that officers meet the IOARS standard, controlling for subject demographics (age and gender) and the specified district-level social and demographic variables. Tables C-5 and C-6 display summary statistics and regression estimation with odds ratios for the IOARS stop analysis. Tables C-7 and C-8 include the summary statistics and regression estimation with odds ratios for the IOARS frisk analysis. Table C-9 provides the predicted probabilities and average marginal effects for both IOARS analyses. For race and ethnicity, the reference category is a white subject, with the odds ratio for Black interpreted as the odds of an encounter achieving the IOARS standard when it involves a Black subject relative to IOARS documentation for white subjects, holding all other variables constant. Predicted probabilities present the estimated probability that encounters with each race or ethnic category will meet the IOARS documentation standard during a police stop or frisk, and the average marginal effects show the magnitude of the difference between IOARS documentation for Black or Hispanic/Latino subjects as compared to white subjects.

Table C-6 lists the odds ratios for whether there are significant differences in IOARS documentation to justify initiating a police encounter for each variable specified in the model. Table C-9 reports the predicted probability of achieving the IOARS standard for the stop, controlling for district and other subject demographic effects. The odds ratios (Table C-6) indicate significant differences in IOARS documentation by race and ethnicity. In terms of predicted probabilities, the model (Table C-9) estimates that the IOARS standard is met in 86.2 percent of stops involving white subjects, as compared to an estimated 91.3 percent for Black subjects and 91.6 percent for Hispanic/Latino subjects.

Table C-8 lists the odds ratios for whether there are significant differences in IOARS documentation to justify a frisk encounter for each variable specified in the models. Table C-9 provides the predicted probabilities of achieving the IOARS standard for frisks, controlling for subject and district-level explanatory variables. The odds ratios (Table C-8) for the variables of interest, an indicator for a Black subject and an indicator for a Hispanic/Latino subject, are higher than one, indicating the estimated odds for IOARS documentations for frisks are higher for Black subjects and Hispanic/Latino subjects relative to white subjects. These odds are statistically significant. The predicted probability of a frisk meeting the IOARS standard for interactions with Black subjects is 70.2 percent, with Hispanic/Latino subjects is 75.6 percent, compared to 38 percent with white frisk subjects (Table C-9).

The relative imbalance of frisks by race and ethnic category likely interferes with the estimation of whether race or ethnicity influences the documentation of IOARS. As indicated in Table C-2, approximately 83 percent of frisks in the sample were conducted with Black subjects, while the rate generated for white subjects is based on documentation for 19 frisks and the rate for Hispanic/Latino subjects is based on 18 frisks. The model estimation procedure factors in this imbalance when attempting to estimate whether the differences in documentation of IOARS between race or ethnic groups is statistically significant.

The main findings of the IOARS regression analysis are summarized below. For 2022, after ruling out other demographic and district-level explanatory variables, we find:

- IOARS documentation to justify stops of subjects of any race or ethnic category ranges from 88 percent in quarters 1 and 4 of 2022 to a high of 90 percent in quarters 2 and 3.
- IOARS documentation to justify frisks of subjects of any race or ethnic category is higher than in previous years but still deficient throughout 2022, with 60 percent of records meeting the IOARS standard in quarter 4 to a high of 77 percent meeting the standard in quarter 2.
- The probability of proper IOARS documentation is statistically different by race or ethnicity.
- The probability of proper IOARS documentation for frisks involving Black subjects or frisks involving Hispanic/Latino subjects is higher relative to white subjects. The difference is statistically significant.

Frisk and Contraband Hit Rate Analysis (SA V.A.7.a)

The Settlement Agreement (SA V.A.7a) requires a hit rate analysis to determine the possible effects of race and ethnicity in encounters with police. As summarized in Table D-1, 225 frisks were documented in 2022 during traffic stops, field interviews, and no-action encounters. Of those frisks, 45 (20 percent) resulted in the discovery of contraband. Drug contraband was discovered during 11 frisks and 21 frisks recovered weapons, with discovery rates of 4.9 percent and 9.3 percent, respectively. As previously discussed, the majority of the 225 documented frisks in 2022 occurred with Black stop subjects (187), followed by white stop subjects (19), Hispanic/Latino stop subjects (18), and very few frisks of stop subjects of other races or ethnicities (1). As it would be inappropriate to interpret or compare contraband hit rates based on such a comparatively low total for other races and ethnicities, we concentrate here on hit rates for Black, Hispanic/Latino, and white stop subjects. We present information for contraband hit rates among frisks of stop subjects of other races or ethnicities in Table D-1 but caution interpretation of the rates in comparison to other race or ethnic categories.

It is important to note that searches are not discussed in this analysis as the focus of the Settlement Agreement specifies frisks. Searches are different from frisks in that searches involve looking into hidden places in vehicles or on a subject's person for contraband or evidence of a crime with the intent of charging the individual with an offense. Frisks are a pat down of the outer garments of a subject and are to be conducted only when officers have IOARS that the subject is armed and dangerous. If during a frisk of a subject's outer clothing an officer feels an object that is identifiable as contraband, the officer is authorized to seize the object. This can lead to discovery of drugs or other non-weapon contraband even as the expressed purpose of a frisk is to retrieve and secure weapons.

Table D-1 also provides a summary of contraband hit rates by race. The weapons contraband hit rates are 3.8 and 11.4 percentage points higher for Black and Hispanic/Latino frisk subjects, respectively, than for white frisk subjects. This preliminarily suggests that officers are finding more weapons per frisk with Black and Hispanic/Latino stop subjects than when frisking white stop subjects. Regression analysis is used to explore this hypothesis by accounting for other explanations for why officers may frisk a given stop subject.

Contraband Hit Rate Regression Analysis

We conduct multivariate logistic regression analyses to determine whether the discovery of contraband in a frisk during a police encounter differs by race or ethnicity after controlling for other demographic factors, as well as the time and district in which the encounter occurred.⁴¹ The models provide odds ratios indicating the odds of contraband discovery relative to the reference category, which in this analysis represents white frisk subjects. We also present predicted probabilities of contraband discovery along with the average marginal effects in order to describe differences in contraband discovery by race or ethnicity in terms of percentage points. The dependent variable is an indicator variable equal to one if contraband is discovered and zero otherwise. We estimate three regression models:

⁴¹ Contraband includes weapons, drugs, and other items such as drug paraphernalia, stolen goods, or tools used to commit a crime. We analyze contraband as all contraband types and more specifically weapons or drug discoveries.

1. Model 1 controls only for the frisk subject's race or ethnicity, Black or Hispanic/Latino. Other race categories are excluded from the analysis due to the low frisk totals represented by people of races or ethnicities other than Black, Hispanic/Latino, or white.
2. Model 2 adds controls for the frisk subject's age and gender. Age is specified as an indicator for whether the subject is younger than 35 years old and gender is specified as an indicator for whether the frisk subject is male.
3. Model 3 adds controls for the time of day the stop occurred, district, and quarter. Time of day is split into four quarters of the day: 9:00am to 2:59pm, 3:00pm to 8:59pm, 9:00pm to 2:59am, and 3:00am to 8:59am.

Table D-2 provides the full regression results for each model by reporting odds ratios and confidence intervals for each coefficient in the model. Full regression results are presented in Table D-3 and associated predicted probabilities and average marginal effects are presented in Table D-4. After controlling for other frisk subject characteristics, time of day, time of year, and district, the probability of discovering contraband during a frisk is higher for Black stop subjects than for white stop subjects by 16.8 percentage points, and this difference is statistically significant at the 99 percent confidence level. Additionally, frisks of Hispanic/Latino stop subjects are predicted to yield higher contraband discovery rates than frisks with white stop subjects (22.7 percent), and this result is statistically significant at the 99 percent confidence level.

Since the expressed purpose of conducting a frisk is related to weapon possession, we conducted additional analyses focused on understanding whether the weapon discovery rate varies by race or ethnicity and whether the drug discovery rate varies by race or ethnicity. We used Model 3 specifications for these analyses and find that frisks involving Black stop subjects are 9 percentage points more likely to yield weapons than for frisks involving white stop subjects; however, this result is not statistically significant. Weapon discovery is 14.7 percentage points higher for Hispanic/Latino frisk subjects than white frisk subjects; this difference is also not statistically significant. While drug discovery rates were higher for both Black and Hispanic/Latino stop subjects than white subjects (14.8 percent and 10.6%, respectively), these differences were not statistically significant.

The main findings of the frisk and contraband hit rate analysis are summarized below. For 2022, after ruling out other demographic and district-level explanatory variables, we find:

- The probability of discovering contraband during a frisk is significantly higher for Black and Hispanic/Latino frisk subjects than for white frisk subjects.
- Weapon discovery rates during frisks are higher for both Black subjects and Hispanic/Latino subjects than for white subjects, a difference of 9 percentage points and 14.7 percentage points, respectively; however, these differences are not statistically significant.
- Drug discovery rates are higher for both Black subjects and Hispanic/Latino subjects than for white subjects, a difference of 14.8 percentage points and 10.6 percentage points, respectively; however, these differences are not statistically significant.

District-Level Encounters by Crime Hit Rate Analysis (SA V.A.7.b)

We conduct a hit rate analysis at the police district level to explore whether police encounters are more likely to occur in majority Black or majority Hispanic/Latino police districts. The Settlement Agreement (SA V.A.7b) requires this analysis to develop encounter rates per reported crime to determine whether the ratios are related to district racial or ethnic demographics. If districts with majority shares of Black or Hispanic/Latino populations have higher stop or frisk rates but lower relative crime rates than districts with majority white populations, then there is a stronger likelihood that race or ethnicity is a determining factor in officers' initiation of traffic stops, field interviews, no-action encounters, or frisks.

As indicated in Figure A-5, Districts 4, 5, and 7 encompass majority-Black neighborhoods, District 2 is a majority-Hispanic/Latino neighborhood, and Districts 1 and 6 are majority-white neighborhoods. District 3 appears to be the most diverse district, with 45 percent Black residents, 33 percent white residents, 13 percent other race categories and 9 percent Hispanic/Latino residents.

Table E-1 provides the ratios of the traffic stop rate (per 1,000 residents aged 16-80), field interview rate (per 1,000 residents), no-action encounter rate (per 1,000 residents), and frisk rate (per 1,000 residents) to crime rates in each district. For ease of description, Table E-2 summarizes a comparison of majority Black districts (Districts 4, 5, and 7) to majority white districts (Districts 1 and 6) and a comparison of the majority Hispanic/Latino district (District 2) to majority white districts.

The ratios of traffic stop, field interview, and no-action encounter rates relative to crime rates in majority-Black districts are lower than the ratios of traffic stop, field interview, and no-action encounter rates relative to crime rates in one majority-white district (District 6) and higher than or equal to⁴² the ratios of those same encounters to crime rates in the other majority-white district (District 1). However, the ratio of frisk rates to crime rates in majority-Black districts is 52 percent higher than the ratio of frisk rates to crime rates in white districts. The ratios of field interview, no-action encounter, and frisk rates to crime rates in the majority-Hispanic/Latino district are higher than or equal to⁴³ the ratios of these same encounters to crime rates in majority white districts. The ratio of the traffic stop rate relative to crime rate in the majority Hispanic/Latino district is higher than the ratio of the traffic stop rate relative to crime rate in District 1, and lower than that ratio in District 6. The ratio of frisk rates to crime rates in the majority Hispanic/Latino district is 176% higher than the ratio of frisk rates to crime rates in white districts.⁴⁴

Overall, these results suggest that, when accounting for relative crime rates, frisks are conducted more often in Black and Hispanic/Latino neighborhoods than in white neighborhoods.

⁴² The ratio of the no-action encounter rate relative to crime rate in District 4 is equal to the ratio of the no-action encounter rate relative to crime rate in District 1.

⁴³ The ratio of the no-action encounter rate relative to crime rate in District 2 is equal to the ratio of the no-action encounter rate relative to crime rate in District 6.

⁴⁴ District 3 is 45% Black residents, 33% white residents, 9% Hispanic/Latino residents, and 13% residents of other races and thus has no clear majority racial or ethnic group. The ratios of encounters to crime rates for District 3 compared to white districts are: -48% (traffic stops), 6% (field interviews), 14% (no-action encounters), and 43% (frisks).

Discussion of Findings

The Settlement Agreement (SA V.A.5-8) stipulates specific data sources, regression protocols, and hit rate analyses required to measure the Milwaukee Police Department's compliance with the Fourteenth Amendment of the U.S. Constitution and Title VI of the Civil Rights Act of 1964 in conducting traffic stops, field interviews, no-action encounters, and frisks. The intent of the analysis in this report is to determine the impact of a person's race or ethnicity on the likelihood of a police encounter while controlling for crime and population characteristics of each of the police districts. Four analyses were conducted to measure compliance: stop rate analysis, IOARS rate analysis, hit rate analysis of frisks and contraband, and hit rate analysis of districts by crime rates.

Limitations

The analyses offered in this report provide an exploration of police encounters in 2022 and encompasses a fourth year of analyses focused on understanding racial or ethnic disparities in police encounters with the Milwaukee Police Department.

One limitation to this analysis of note is related to our ability to accurately represent traffic stops, field interviews, and no-action encounters given the data that are provided to us. There are encounters provided in the CAD files that do not have corresponding documentation in files from TraCS, RMS, or AIM (see "CAD Numbers" in A-1 and "Number of Stops" in A-4). Table A-3 also provides an accounting of citations or warnings that lack corresponding TraCS or RMS information to provide a full accounting of the nature of those encounters. Thus, neither unmatched CAD numbers nor the citation/warning only encounters are represented in the stop rate analyses as they are based on the encounter type categories. Moreover, our compliance assessment in the Fifth Annual Report for SA IV.A.1 indicates that not all police encounters are documented, including police encounters where frisks occur. As the estimates provided in our analysis rely on documented police encounters, our findings are limited to estimating racial and ethnic disparities in documented police encounters and do not account for patterns that may exist in undocumented encounters with police.

Despite this limitation, we believe the analyses presented in this report inform an understanding of racial disparities present in police encounters during implementation of policy and procedural changes to respond to the requirements of the Settlement Agreement. While informative as an ongoing assessment of racial and ethnic disparities present in the police encounters that MPD initiates, this type of analysis continues to fall short in discovering the reasons for these disparities. That is, the findings represented in this report do not help the Defendants identify whether the disparities are driven by Departmental directives that are internally generated or resulting from public pressure to act (e.g., focused traffic patrols for reckless driving or speeding), or if disparities are driven by individual officer behavior motivated by racial or ethnic bias. A more focused and frequent assessment of police encounters would be more informative for real-time adjustments to operations, personnel, or communication with the community in high-disparity areas. For field interviews specifically, accounting for smaller geographic areas and variability in crime participation and victimization would be an informative next step to understanding inequities by race and ethnicity in these types of encounters with police.

Summary of Findings

The stop rate analysis indicates, after controlling for known predictors, that Black residents are subjected to traffic stops, field interviews, no-action encounters, and frisks at significantly higher rates than white residents. Black residents of typical driving age are 4.5 times more likely to get stopped than white residents of typical driving age. Black residents are 10.1 times more likely to be subjected to a field interview and 4.1 times more likely to be a subject of a no-action encounter than white residents of Milwaukee. All of these results are statistically significant.

In addition to being more likely to be stopped by police, Black individuals are also significantly more likely to experience a police stop that involves a frisk. We analyze the racial and ethnic disparity in two ways. First, we estimate the likelihood that a person in Milwaukee will be subjected to a stop that involves a frisk, by race and ethnicity. This provides information about whether there is a racial or ethnic disparity in more invasive police encounters, controlling for other known factors, among members of the public in Milwaukee. We find that Black residents are eight times more likely than white residents to be subjected to a frisk-based police encounter. Second, we estimate whether there is a racial or ethnic disparity in the likelihood of a frisk among the individuals stopped by police. This provides information about whether there is a racial or ethnic disparity in the likelihood of a frisk after the officer has already decided to make a stop. This more focused analysis of frisks indicates that during a police encounter, Black subjects are 2.6 times more likely to be frisked than white subjects. These results are also statistically significant.

Controlling for demographic and district-level population characteristics, Hispanic/Latino residents were not significantly more likely to be stopped by police in a traffic stop, field interview, no-action encounter, or more likely to experience a police stop that involves a frisk.

The traffic stop rate for Black residents of typical driving age is 4.5 times higher than for white drivers, a statistically significant difference. The traffic stop rate for Hispanic/Latino residents of typical driving age is not statistically different from the traffic stop rate for white residents of typical driving age. The traffic stop rate for residents of other races was 47 percent lower than for white residents, a statistically significant difference.

The probability of proper IOARS documentation for stops and for frisks involving Black subjects or stops and frisks involving Hispanic/Latino subjects is higher relative to white subjects. The difference is statistically significant.

Hit rates for contraband discovery were 20 percent overall, with the probability of discovering contraband during a frisk significantly higher for Black and Hispanic/Latino frisk subjects than for white frisk subjects. Exploration of contraband hit rates by race or ethnicity specifically for weapons does not show a statistically significant difference by race or ethnicity.

An analysis of the ratio of frisk rates to crime rates by district shows that when accounting for relative crime rates, officers conduct frisks more often in Black and Hispanic/Latino neighborhoods than in white neighborhoods.

Overall, we find racial and ethnic disparities in traffic stops, field interviews, no-action encounters, and frisks conducted by MPD, with robust disparities in police encounters with Black residents compared to

white residents of Milwaukee. IOARS documentation standards have continued to improve in 2022, with documentation of IOARS for frisks notably higher than for previous years but continuing to be deficient specifically with white stop subjects as compared to Black or Hispanic/Latino stop subjects.

These results represent a fourth year of analysis of police encounters in Milwaukee. Stop rate disparities and disparity in the likelihood of a frisk, controlling for known predictors, have been found for all four years when comparing the experiences of Black and white individuals encountered by police. Current findings from police encounters in 2022 indicate no disparities in whether and how police interact with Hispanic/Latino residents and white residents of Milwaukee. These results indicate that the changes to policy, training, and procedures being implemented by the Milwaukee Police Department in response to the Settlement Agreement have not yet resulted in significant improvements in racial and ethnic disparities in police encounters with members of the public.

Contributors

Katie Zafft coordinates CJI's data analysis efforts for the Milwaukee Settlement Agreement work. She has over 10 years of experience working on justice system policy evaluation and implementation of reform efforts at the local, state, and federal level. Katie primarily manages CJI's policing and reentry-focused efforts to advance positive changes in support of fair and equitable practices that directly impact the safety of all communities. Prior to coming to CJI, Katie's work for The Pew Charitable Trusts' public safety performance project involved evaluating state criminal justice policy reforms to inform the national conversation about sentencing, corrections, and enhancing public safety. Katie is committed to advancing better justice systems by developing strong foundations for data-driven decision-making because it leads to better policing and more equitable practices. She holds a Ph.D. in Criminology and Criminal Justice from the University of Maryland, a Master's Degree in Criminology from the University of Minnesota-Duluth, and a Bachelor of Arts in Psychology from St. Catherine's University in St. Paul, Minnesota.

Erica Bower joined CJI in June 2023, prior to which she worked in academic roles in sociology, criminology, and criminal justice. In the academic setting, Erica conducted research related to school discipline issues and racial disparities in the adult justice system; instructed courses related to youth justice, corrections, and social inequality; and helped undergraduates find opportunities to learn from professionals in the field. Erica is part of CJI's youth justice and policing teams and works on several projects analyzing data to improve these systems. Erica most recently led a collaborative effort to implement and evaluate community-based trainings in mental health and adverse childhood experiences (ACEs) in rural Tennessee; previously, she worked on bail reform evaluation in Norfolk, Virginia. Her work has been published in peer-reviewed journals including *American Journal of Criminal Justice* and *The Social Science Journal*. Erica is committed to advancing the field by using data-driven solutions to address critical issues in adult and youth justice systems. Erica holds a Ph.D. in Criminology and Criminal Justice from Old Dominion University.

CJI would also like to acknowledge the contributions of former staff member **Joanna Abaroa-Ellison**. Joanna's contributions to the CJI team included data analysis for several compliance assessments, supporting the technical assistance provided to the FPC, and maintaining organization of the information gathered to assess compliance and generate reports.

Appendix A: Population and Encounter Tables & Figures

A-1: Persons Involved in Encounters by Quarter and Type

Quarter	Data Extraction Delivery Date	CAD Numbers	TraCS – Traffic Stops	TraCS – Citation or Warning Only	RMS - Field Interviews	RMS - No-Action Encounters
Quarter 1 Jan. - March	May 13, 2022	10,659	10,481	347	448	19
Quarter 2 April - June	August 15, 2022	7,147	6,849	302	528	14
Quarter 3 July – Sept.	November 15, 2022	8,218	7,961	287	468	10
Quarter 4 Oct. – Dec.	February 15, 2023	7,261	7,057	284	340	11
Total		33,285	32,348	1,220	1,784	54

Notes:

¹MPD performs manual redaction of the public’s personally-identifiable information for each data extraction. Personally-identifiable information includes name, home address, driver’s license or state ID number, personal phone number, and social security number.

²CAD number totals represent the total number of unique CAD numbers provided with encounter dates that fall within the specified quarter. The total number of encounters from TraCS or RMS do not equal total number of CAD numbers because not all CAD numbers had corresponding TraCS or RMS data provided in the extraction and the totals for TraCS and RMS represent people within encounters rather than encounter events.

³Revised Inform_ELCI files for quarters 1 and 2 were delivered September 2, 2022 to exclude citations for vehicle crashes, boat stops, and voided citations.

⁴Revised Inform_FieldInterview_Joined, Inform_FieldInterviewPerson, and Inform_NoActionEncounter_Joined files for quarter 4 were delivered March 2, 2023 to correct a file structural error preventing file portability to data analysis software programs.

⁵Revised Inform_FieldInterviewPerson files for quarters 3 and 4 were delivered May 17, 2023 to include “Force_Type_Description.”

Source:

Milwaukee Police Department Stop Data, 2022

A-2: Data Loss by Quarter and Encounter Type

Quarter	CAD only	AIM only
Quarter 1	163	6
Quarter 2	156	6
Quarter 3	162	37
Quarter 4	152	4
Total	633	53

Notes:

¹Encounters identified as “CAD only” include observations in the data that are present in the CAD file but do not have corresponding information in files from TraCS, RMS, or AIM.

²Encounters identified as “AIM only” include observations in the data that are present in the AIM file but do not have corresponding information in files from CAD, TraCS, or RMS.

Source:

Milwaukee Police Department Stop Data, 2022

A-3: Encounters by Type and District

District	Traffic Stops	Field Interviews	No-Action Encounters	Citation or Warning Only	Totals	Percent by District
1	667	65	2	34	768	2.3%
2	5,798	259	9	234	6,300	18.9%
3	3,437	210	12	122	3,781	11.3%
4	4,108	153	5	136	4,402	13.2%
5	4,085	216	6	141	4,448	13.3%
6	5,787	134	5	159	6,085	18.2%
7	5,424	174	9	172	5,779	17.3%
NULL	0	0	1	0	1	0.0%
Missing	1,775	1	0	51	1,827	5.5%
Total	31,081	1,212	49	1,049	33,391	100.0%

Notes:

¹The “Citation or Warning Only” category refers to encounters found in the data extractions that have a citation or warning document but do not have corresponding contact summaries or field interview data from TraCS or RMS which are necessary to accurately categorize them as traffic stops or field interviews. These encounters are not represented in the stop rate analyses but are incorporated into the IOARS analyses as they are in the Semiannual reviews.

²According to the extraction data dictionaries, “NULL” refers to locations of encounters that fall outside of district boundaries or special circumstance stops. We include them here for reference but do not include them in the district-level analyses.

³Missing refers to encounters with missing address or latitude/longitude data. Encounters with missing or null location information were not included in the district-level analyses.

Source:

Milwaukee Police Department Stop Data, 2022

A-4: Share of Encounters with Missing Demographic Information

Quarter	Number of Stops				Share of Stops Missing Demographic and/or Location Data			
	Traffic Stops	Field Interviews	No-Action Encounters	Frisks	Traffic Stops	Field Interviews	No-Action Encounters	Frisks
Q1	10,091	312	17	56	5%	12%	12%	2%
Q2	6,564	340	12	66	5%	9%	17%	3%
Q3	7,624	329	10	50	8%	9%	30%	2%
Q4	6,802	231	10	53	6%	11%	10%	6%
Total	31,081	1,212	49	225	6%	10%	16%	3%

Notes:

¹Each observation in the data represents a single encounter with police.

²For traffic stops, field interviews, and frisks, an observation is considered to be missing demographic information if subject race/ethnicity, age, or gender is not present in TraCS or RMS data.

³For no-action encounters, an observation is considered to be missing demographic information if subject race/ethnicity or gender is not present in TraCS or RMS data. Age is not required to be documented by officers during no-action encounters.

⁴Encounters are considered to be missing demographic information if officers choose “unknown” for race or gender when documenting field interviews or no-action encounters in RMS.

⁵Frisks are a subset of traffic stops or field interviews.

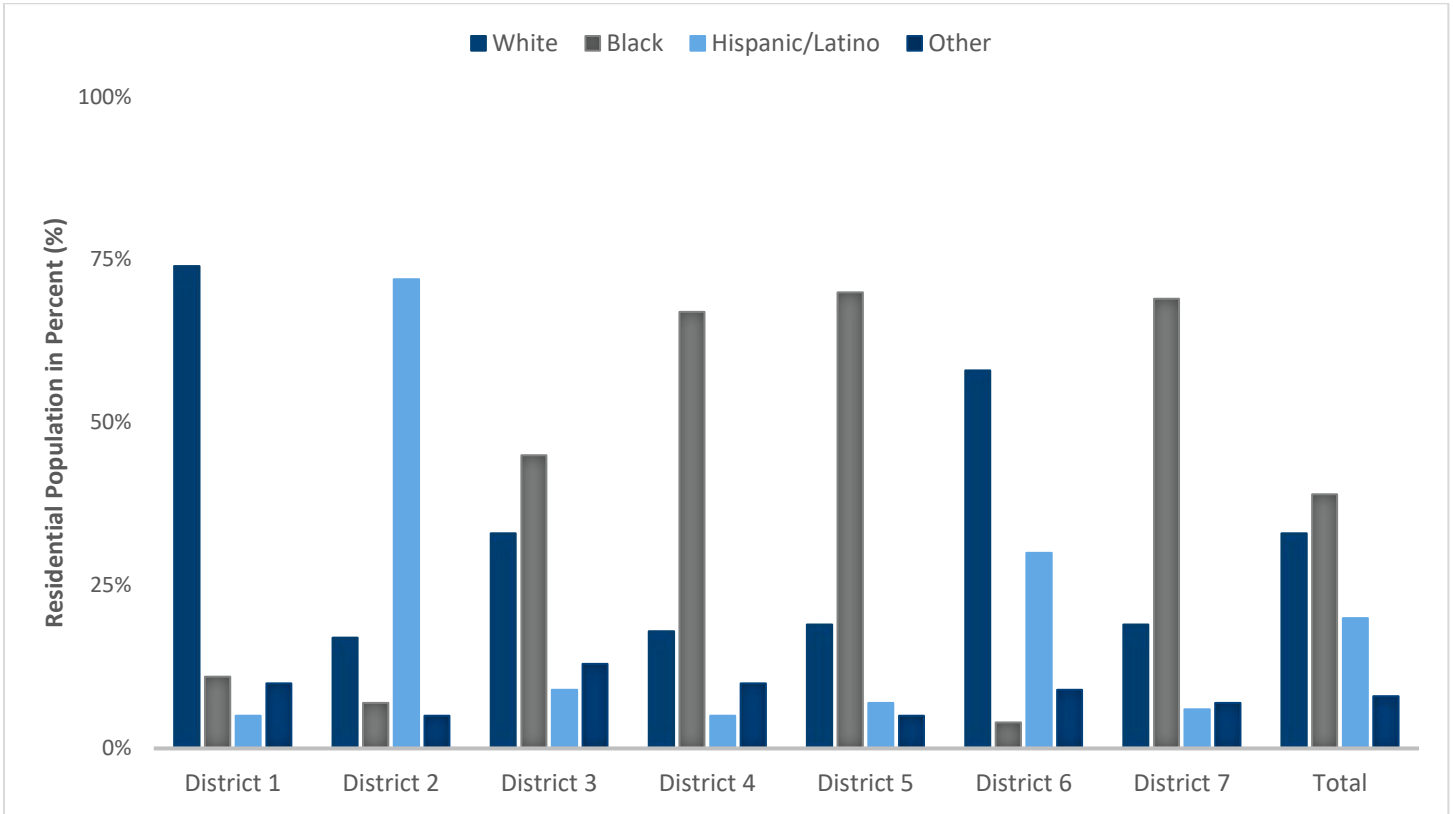
⁶Location data is considered missing if data for the encounter do not indicate the police district in which it occurred.

⁷Of the 1,049 citations or warnings that lack corresponding TraCS or RMS information, 10% are missing demographic or location information. We do not include them here as the focus for the annual analysis is the categorized encounters.

Source:

Milwaukee Police Department Stop Data, quarters 1-4, 2022

A-5: Population Race and Ethnic Composition by District



Source:
U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Appendix B: Stop Rate Analysis Tables

B-1: Traffic Stops per 1000 Residents of Typical Driving Age by Race, Ethnicity, and District

District	1	2	3	4	5	6	7	All
Traffic Stops per 1000 Residents	15	107	61	62	95	68	74	69
Traffic Stops per 1000 Black Residents	59	597	104	77	117	406	97	114
Traffic Stops per 1000 Hispanic/Latino Residents	29	58	40	39	44	79	31	60
Traffic Stops per 1000 White Residents	9	127	28	42	51	42	26	37
Traffic Stops per 1000 Residents of Other Races	5	69	9	13	20	41	14	22
Percentage of Black Residents of Typical Driving Age	11%	7%	45%	67%	70%	4%	69%	38%
Percentage of Hispanic/Latino Residents of Typical Driving Age	5%	72%	9%	5%	7%	29%	6%	19%
Percentage of White Residents of Typical Driving Age	74%	17%	33%	18%	19%	57%	19%	34%
Percentage of Residents of Other Races of Typical Driving Age	10%	5%	13%	10%	5%	9%	7%	8%

Notes:

¹The traffic stop rate for Black residents of typical driving age in each district is calculated as the total number of traffic stops of Black drivers in that district, multiplied by 1000, and divided by the number of Black residents between 16 and 80 years old in that district. The traffic stop rates for white, Hispanic/Latino, and individuals of other races are calculated the same way.

²Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and “other” race.

³Totals exclude 1,775 traffic stops that lack location information and 72 traffic stops with missing race or ethnicity information.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-2: Field Interviews per 1,000 Residents by Race, Ethnicity, and District

District	1	2	3	4	5	6	7	All
Field Interviews per 1000 Residents	1.2	3.1	2.5	1.5	3.2	1.1	1.6	1.9
Field Interviews per 1000 Black Residents	8.2	23.6	5.3	2.1	4.7	12.2	2.1	3.9
Field Interviews per 1000 Hispanic/Latino Residents	1.1	1.3	0.6	0.6	0.5	0.9	0.0	1.0
Field Interviews per 1000 White Residents	0.3	3.0	0.5	0.4	0.5	0.6	0.5	0.6
Field Interviews per 1000 Residents of Other Races	0.4	1.0	0.4	0.1	0.0	0.3	0.1	0.3
Percentage of Black Residents	11%	7%	45%	67%	70%	4%	69%	39%
Percentage of Hispanic/Latino Residents	5%	72%	9%	5%	7%	29%	6%	20%
Percentage of White Residents	74%	17%	33%	18%	19%	57%	19%	33%
Percentage of Residents of Other Races	10%	5%	13%	10%	5%	9%	7%	8%

Notes:

¹The field interview rate for Black residents in each district is calculated as the total number of field interviews of Black residents in that district, multiplied by 1,000, and divided by the number of Black residents in that district. The field interview rates for white, Hispanic/Latino, and residents of other races are calculated the same way.

²Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and "other" race.

³Totals exclude one field interview that lacked location information and 75 field interviews with missing race or ethnicity information.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-3: No-Action Encounters per 1,000 Residents by Race, Ethnicity, and District

District	1	2	3	4	5	6	7	All
No-Action Encounters per 1000 Residents	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1
No-Action Encounters per 1000 Black Residents	0.2	0.6	0.2	0.0	0.1	0.0	0.1	0.1
No-Action Encounters per 1000 Hispanic/Latino Residents	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1
No-Action Encounters per 1000 White Residents	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0
No-Action Encounters per 1000 Residents of Other Races	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Percentage of Black Residents	11%	7%	45%	67%	70%	4%	69%	39%
Percentage of Hispanic/Latino Residents	5%	72%	9%	5%	7%	29%	6%	20%
Percentage of White Residents	74%	17%	33%	18%	19%	57%	19%	33%
Percentage of Residents of Other Races	10%	5%	13%	10%	5%	9%	7%	8%

Notes:

¹The no-action encounter rate for Black residents in each district is calculated as the total number of no-action encounters of Black residents in that district, multiplied by 1,000, and divided by the number of Black residents in that district. The no-action encounter rates for white, Hispanic/Latino, and residents of other races are calculated the same way.

²Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and “other” race.

³Totals exclude one no-action encounter with a NULL location and eight no-action encounters with missing race or ethnicity information.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-4: Frisk Rates per 1,000 Residents by Race, Ethnicity, and District

District	1	2	3	4	5	6	7	All
Frisks per 1,000 Residents	0.3	0.6	0.4	0.3	0.9	0.1	0.3	0.4
Frisks per 1,000 Black Residents	2.1	4.8	1.0	0.4	1.3	0.9	0.5	0.8
Frisks per 1,000 Hispanic/Latino Residents	0.0	0.2	0.0	0.0	0.3	0.1	0.0	0.2
Frisks per 1,000 White Residents	0.1	0.6	0.1	0.0	0.1	0.1	0.0	0.1
Frisks per 1,000 Residents of Other Races	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Percentage of Black Residents	11%	7%	45%	67%	70%	4%	69%	39%
Percentage of Hispanic/Latino Residents	5%	72%	9%	5%	7%	29%	6%	20%
Percentage of White Residents	74%	17%	33%	18%	19%	57%	19%	33%
Percentage of Residents of Other Races	10%	5%	13%	10%	5%	9%	7%	8%

Notes:

¹The frisk rate for Black residents in each district is calculated as the total number of frisks of Black residents in that district, multiplied by 1,000, and divided by the number of Black residents in that district. The frisk rates for white, Hispanic/Latino, and residents of other races are calculated the same way.

²Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and “other” race.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-5: Ratio of Stop Rates for Black and Hispanic/Latino Drivers or Residents to Stop Rates for White Drivers or Residents

	Traffic Stops	Field Interviews	No-Action Encounters	Frisks
Ratio of Stop Rate for Black Residents to Stop Rate for White Residents	3.1	6.1	3.6	8.2
Ratio of Stop Rate for Hispanic/Latino Drivers/Residents to Stop Rate for White Drivers/Residents	1.6	1.6	1.9	1.5
Ratio of Stop Rate for Drivers/Residents of Other Races to Stop Rate for White Drivers/Residents	0.6	0.5	1.0	0.2

Notes:

¹The ratio of the traffic stop rate for Black residents of driving age to the traffic stop rate for white residents of driving age is calculated as the number of traffic stops per 1000 Black residents (16-80 years old) divided by the number of traffic stops per 1000 white residents (16-80 years old). The same calculation is performed for the other encounter types and other race or ethnic categories.

²The ratio of the field interview rate for Black residents to the field interview rate for white residents is calculated as the number of field interviews per 1,000 Black residents (of all ages) divided by the number field interviews per 1,000 white residents (of all ages). The same calculation is performed for no-action encounters and frisks for Hispanic/Latinos and residents of other races.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-6: Summary of Variables in Traffic Stop Rate Analysis

	Mean	Standard Deviation	Minimum	Maximum	Observations
Traffic Stop Rate	5.07	9.02	0.00	79.74	448
Black	0.25	0.43	0.00	1.00	448
Hispanic/Latino	0.25	0.43	0.00	1.00	448
Other Race	0.25	0.43	0.00	1.00	448
Male	0.50	0.50	0.00	1.00	448
Young	0.50	0.50	0.00	1.00	448
Black Share of District	0.39	0.28	0.04	0.70	448
Hispanic/Latino Share of District	0.19	0.23	0.05	0.72	448
Other Race Share of District	0.08	0.03	0.05	0.13	448
White Share of District	0.34	0.21	0.17	0.74	448
Young Share of District	0.31	0.12	0.23	0.58	448
Male Share of District	0.49	0.03	0.46	0.53	448
Unemployment Rate in District	6.34	1.68	3.50	8.33	448
Lagged Total Crime Rate in District	0.12	0.04	0.04	0.18	448
Lagged Violent Crime Rate in District	0.04	0.02	0.01	0.06	448
Lagged Property Crime Rate in District	0.06	0.02	0.03	0.12	448

Notes:

¹The unit of observation in the traffic stop rate analysis is MPD district x race or ethnicity x age x gender x quarter.

²The dataset contains one observation for each race or ethnicity (Black, Hispanic/Latino, other race, and white) of each gender found in the dataset (Male, Female) and each age group (younger or older than 35) in each MPD district in each quarter of 2021. By construction, the race or ethnicity indicator variables have a mean of one quarter and the gender and age variables have a mean of one-half.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Milwaukee Part I and Part II Crime Data, 2021

B-7: Traffic Stop Rate Estimation Results

Dependent Variable: Traffic Stops per 1000 Residents of Driving Age	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Black	10.12* (4.206)	10.12* (4.211)	10.12* (4.216)	10.12* (4.230)	10.12* (4.235)	10.12* (4.240)	10.12* (4.245)
Hispanic/Latino	-0.0343 (0.790)	-0.0343 (0.791)	-0.0343 (0.791)	-0.0343 (0.794)	-0.0343 (0.795)	-0.0343 (0.796)	-0.0343 (0.797)
Other Race	-1.346** (0.464)	-1.346** (0.465)	-1.346** (0.465)	-1.346** (0.467)	-1.346** (0.467)	-1.346** (0.468)	-1.346** (0.468)
Male		2.801** (1.122)	2.801** (1.124)	2.801** (1.127)	2.801** (1.129)	2.801** (1.130)	2.801** (1.131)
Young			2.610** (1.058)	2.610** (1.061)	2.610** (1.063)	2.610** (1.064)	2.610** (1.065)
Black Share of District				-0.580 (2.696)	-5.209*** (0.309)	-5.292*** (1.090)	-20.87*** (0)
Hispanic/Latino Share of District				16.04*** (2.959)	10.54*** (0.658)	10.56*** (0.610)	1.758*** (0)
Other Share of District				-8.368 (9.548)	-12.89* (6.616)	-13.29 (10.08)	-25.55*** (0)
Young Share of District					-11.84*** (0.594)	-11.65*** (2.738)	-17.14*** (0)
Male Share of District						-1.555 (23.46)	-19.95*** (5.53e-11)
District Unemployment Rate							1.631*** (0)
Constant	2.888** (0.902)	1.487** (0.411)	0.182 (0.416)	-1.962 (2.419)	4.933** (1.982)	5.693 (11.91)	14.78*** (1.964)
Observations	448	448	448	448	448	448	448
R-squared	0.263	0.287	0.308	0.495	0.506	0.506	0.507

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹Observations in the data are at the level of race or ethnicity, age, gender, district, and quarter of the year.

²The dependent variable is the total number of traffic stops per 1000 residents of typical driving age (16-80 years old) by race or ethnicity, age, gender, district, and quarter of the year.

³Each variable's coefficient measures its relationship with the stop rate per 1000 residents of driving age.

⁴Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and "other" race.

⁵Regression Models 8-10 are identical to Model 7 estimates and are omitted due to multicollinearity with the unemployment rate (total and property crime) and percent young (property crime). Model 7 suffers from similar misspecification due to significant correlation between the Black Share of District and Unemployment Rate.

⁶"Male Share of District" is based on the residential population and varies by district.

⁷Standard errors are robust and clustered by MPD district.

⁸In Model 1, the constant provides an estimate of the white traffic stop rate.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-8: Summary of Variables in Field Interview Rate Analysis

	Mean	Standard Deviation	Minimum	Maximum	Observations
Field Interview Rate	0.61	1.71	0.00	13.67	112
Black	0.25	0.43	0.00	1.00	112
Hispanic/Latino	0.25	0.43	0.00	1.00	112
Other Race	0.25	0.43	0.00	1.00	112
Male	0.50	0.50	0.00	1.00	112
Young	0.50	0.50	0.00	1.00	112
Black Share of District	0.39	0.29	0.04	0.70	112
Hispanic/Latino Share of District	0.19	0.23	0.05	0.72	112
Other Race Share of District	0.08	0.03	0.05	0.13	112
White Share of District	0.34	0.21	0.17	0.74	112
Young Share of District	0.31	0.12	0.23	0.58	112
Male Share of District	0.49	0.03	0.46	0.53	112
Unemployment Rate in District	6.34	1.68	3.50	8.33	112
Lagged Total Crime Rate in District	0.12	0.04	0.04	0.18	112
Lagged Violent Crime Rate in District	0.04	0.02	0.01	0.06	112
Lagged Property Crime Rate in District	0.06	0.02	0.03	0.12	112

Notes:

¹The unit of observation in the field interview rate analysis is MPD district x race or ethnicity x age x gender.

²The dataset contains one observation for each race or ethnicity (Black, Hispanic/Latino, other race, and white) of each gender (Male, Female) and each age group (younger or older than 35) in each MPD district in 2022. By construction, the race or ethnicity indicator variables have a mean of one quarter and the gender and age variables have a mean of one-half.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Milwaukee Part I and Part II Crime Data, 2021

B-9: Field Interview Rate Estimation Results

Dependent Variable: Field Interviews per 1,000 Residents	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Black	1.798** (0.637)	1.798** (0.640)	1.798** (0.643)	1.798** (0.653)	1.798** (0.656)	1.798** (0.659)	1.798** (0.662)
Hispanic/Latino	-0.0345 (0.0688)	-0.0345 (0.0691)	-0.0345 (0.0694)	-0.0345 (0.0704)	-0.0345 (0.0708)	-0.0345 (0.0711)	-0.0345 (0.0715)
Other Race	-0.0909* (0.0453)	-0.0909* (0.0455)	-0.0909* (0.0458)	-0.0909* (0.0464)	-0.0909* (0.0466)	-0.0909 (0.0469)	-0.0909 (0.0471)
Male		0.873** (0.330)	0.873** (0.331)	0.873** (0.336)	0.873** (0.338)	0.873** (0.339)	0.873** (0.341)
Young			0.499** (0.166)	0.499** (0.169)	0.499** (0.170)	0.499** (0.170)	0.499** (0.171)
Black Share of District				-0.477* (0.245)	-0.0288 (0.0277)	0.0871 (0.126)	-1.645*** (0)
Hispanic/Latino Share of District				1.807*** (0.266)	2.339*** (0.0701)	2.313*** (0.0703)	1.334*** (0)
Other Share of District				-1.437 (1.243)	-0.999 (0.710)	-0.445 (1.162)	-1.808*** (0)
Young Share of District					1.146*** (0.0605)	0.876** (0.316)	0.266*** (0)
Male Share of District						2.166 (2.704)	0.119*** (0)
District Unemployment Rate							0.181*** (0)
Constant	0.197* (0.0910)	-0.240** (0.0920)	-0.490** (0.171)	-0.530 (0.467)	-1.198** (0.380)	-2.256 (1.333)	-1.246** (0.399)
Observations	112	112	112	112	112	112	112
R-squared	0.220	0.285	0.307	0.403	0.406	0.406	0.406

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹Observations in the data are at the level of race or ethnicity, age, gender, and district.

²The dependent variable is the total number of field interviews per 1000 residents by race or ethnicity, age, gender, and district.

³Each variable's coefficient measures its relationship with the stop rate per 1,000 residents.

⁴Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and "other" race.

⁵Regression Models 8-10 are identical to Model 7 estimates and are omitted due to multicollinearity with the unemployment rate (total and property crime) and percent young (property crime). Model 7 suffers from similar misspecification due to significant correlation between the Black Share of District and Unemployment Rate.

⁶"Male Share of District" is based on the residential population and varies by district.

⁷Standard errors are robust and clustered by MPD district.

⁸In Model 1, the constant provides an estimate of the white field interview stop rate.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Milwaukee Part I and Part II Crime Data, 2021

B-10: Summary of Variables in No-Action Encounter Rate Analysis

	Mean	Standard Deviation	Minimum	Maximum	Observations
No-Action Encounter Rate	0.04	0.09	0.00	0.55	56
Black	0.25	0.44	0.00	1.00	56
Hispanic/Latino	0.25	0.44	0.00	1.00	56
Other Race	0.25	0.44	0.00	1.00	56
Male	0.50	0.50	0.00	1.00	56
Black Share of District	0.39	0.29	0.04	0.70	56
Hispanic/Latino Share of District	0.19	0.23	0.05	0.72	56
Other Race Share of District	0.08	0.03	0.05	0.13	56
White Share of District	0.34	0.21	0.17	0.74	56
Young Share of District	0.31	0.12	0.23	0.58	56
Male Share of District	0.49	0.03	0.46	0.53	56
Unemployment Rate in District	6.34	1.69	3.50	8.33	56
Lagged Total Crime Rate in District	0.12	0.04	0.04	0.18	56
Lagged Violent Crime Rate in District	0.04	0.02	0.01	0.06	56
Lagged Property Crime Rate in District	0.06	0.02	0.03	0.12	56

Notes:

¹The unit of observation in the no-action encounter rate analysis is MPD district x race or ethnicity x gender.

²The dataset contains one observation for each race or ethnicity (Black, Hispanic/Latino, other race, and white) of each gender (Male, Female) in each MPD district in 2022. By construction, the race or ethnicity indicator variables have a mean of one quarter and the gender variable has a mean of one-half.

³Age is not included in this analysis because age is not documented for no-action encounters.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-11: No-Action Encounter Rate Estimation Results

Dependent Variable: No-action Encounters per 1,000 Residents	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Black	0.0648* (0.0269)	0.0648* (0.0272)	0.0648* (0.0280)	0.0648* (0.0283)	0.0648* (0.0286)	0.0648* (0.0289)
Hispanic/Latino	-0.000651 (0.0139)	-0.000651 (0.0140)	-0.000651 (0.0145)	-0.000651 (0.0146)	-0.000651 (0.0148)	-0.000651 (0.0149)
Other Race	-0.00651 (0.0155)	-0.00651 (0.0156)	-0.00651 (0.0161)	-0.00651 (0.0163)	-0.00651 (0.0165)	-0.00651 (0.0167)
Male		0.0595** (0.0180)	0.0595** (0.0185)	0.0595** (0.0187)	0.0595** (0.0189)	0.0595** (0.0191)
Black Share of District			0.0192 (0.0329)	0.0735*** (0.0185)	-0.0248** (0.0101)	-0.158*** (0)
Hispanic/Latino Share of District			0.141*** (0.0341)	0.206*** (0.0218)	0.228*** (0.00564)	0.152*** (0)
Other Share of District			0.428 (0.300)	0.481* (0.222)	0.0112 (0.0932)	-0.0936*** (0)
Young Share of District				0.139*** (0.0213)	0.368*** (0.0253)	0.321*** (0)
Male Share of District					-1.837*** (0.217)	-1.994*** (0)
District Unemployment Rate						0.0139*** (0)
Constant	0.0212* (0.0104)	-0.00856 (0.00593)	-0.0785 (0.0491)	-0.159*** (0.0402)	0.738*** (0.104)	0.816*** (0.0142)
Observations	56	56	56	56	56	56
R-squared	0.120	0.244	0.333	0.350	0.357	0.358

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹Observations in the data are at the level of race or ethnicity, gender, and district.

²The dependent variable is the total number of no-action encounters per 1,000 residents by race or ethnicity, gender, and district.

³Each variable's coefficient measures its relationship with the stop rate per 1,000 residents.

⁴Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and "other" race.

⁵Regression Models 7-9 are identical to Model 6 estimates and are omitted due to multicollinearity with the unemployment rate (total and property crime) and percent young (property crime). Model 6 suffers from similar misspecification due to significant correlation between the Black Share of District and Unemployment Rate.

⁶"Male Share of District" is based on the residential population and varies by district.

⁷Standard errors are robust and clustered by MPD district.

⁸In Model 1, the constant provides an estimate of the white no action-encounter rate.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-12: Summary of Variables in Frisk Rate Analysis

	Mean	Standard Deviation	Minimum	Maximum	Observations
Frisk Rate	0.52	1.44	0.00	10.42	112
Black	0.25	0.43	0.00	1.00	112
Hispanic/Latino	0.25	0.43	0.00	1.00	112
Other Race	0.25	0.43	0.00	1.00	112
Male	0.50	0.50	0.00	1.00	112
Young	0.50	0.50	0.00	1.00	112
Black Share of District	0.39	0.29	0.04	0.70	112
Hispanic/Latino Share of District	0.19	0.23	0.05	0.72	112
Other Race Share of District	0.08	0.03	0.05	0.13	112
White Share of District	0.34	0.21	0.17	0.74	112
Young Share of District	0.31	0.12	0.23	0.58	112
Male Share of District	0.49	0.03	0.46	0.53	112
Unemployment Rate in District	6.34	1.68	3.50	8.33	112
Lagged Total Crime Rate in District	0.12	0.04	0.04	0.18	112
Lagged Violent Crime Rate in District	0.04	0.02	0.01	0.06	112
Lagged Property Crime Rate in District	0.06	0.02	0.03	0.12	112

Notes:

¹The unit of observation in the frisk rate analysis is MPD district x race or ethnicity x age x gender.

²The dataset contains one observation for each race or ethnicity (Black, Hispanic/Latino, other race, and white) of each gender (Male, Female) and each age group (younger or older than 35) in each MPD district in 2021. By construction, the race or ethnicity indicator variables have a mean of one quarter and the gender and age variables have a mean of one half.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-13: Frisk Rate Estimation Results

Dependent Variable: Frisks per 1,000 Residents	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Black	1.548*** (0.370)	1.548*** (0.372)	1.548*** (0.374)	1.548*** (0.379)	1.548*** (0.381)	1.548*** (0.383)	1.548*** (0.385)
Hispanic/Latino	-0.115 (0.152)	-0.115 (0.153)	-0.115 (0.153)	-0.115 (0.156)	-0.115 (0.156)	-0.115 (0.157)	-0.115 (0.158)
Other Race	-0.214 (0.133)	-0.214 (0.134)	-0.214 (0.134)	-0.214 (0.136)	-0.214 (0.137)	-0.214 (0.138)	-0.214 (0.138)
Male		0.775** (0.217)	0.775** (0.218)	0.775** (0.221)	0.775** (0.222)	0.775** (0.223)	0.775** (0.224)
Young			0.524*** (0.139)	0.524*** (0.141)	0.524** (0.142)	0.524** (0.142)	0.524** (0.143)
Black Share of District				-0.577 (0.631)	0.567*** (0.0538)	0.841** (0.244)	-2.517*** (0)
Hispanic/Latino Share of District				-1.097 (0.685)	0.262 (0.136)	0.201 (0.136)	-1.697*** (0)
Other Share of District				-5.251 (2.859)	-4.131** (1.376)	-2.821 (2.254)	-5.463*** (0)
Young Share of District					2.928*** (0.116)	2.291*** (0.612)	1.108*** (0)
Male Share of District						5.123 (5.243)	1.157*** (0)
District Unemployment Rate							0.352*** (0)
Constant	0.220 (0.133)	-0.167* (0.0860)	-0.429** (0.116)	0.440 (0.442)	-1.265*** (0.216)	-3.769 (2.562)	-1.810*** (0.221)
Observations	112	112	112	112	112	112	112
R-squared	0.253	0.326	0.359	0.370	0.396	0.396	0.399

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

- ¹Observations in the data are at the level of race or ethnicity, gender, age, and district.
- ²The dependent variable is the total number of frisks per 1,000 residents by race or ethnicity, gender, age, and district.
- ³Each variable’s coefficient measures its relationship with the stop rate per 1,000 residents.
- ⁴Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, and “other” race.
- ⁵Regression Models 8-10 are identical to Model 7 estimates and are omitted due to multicollinearity with the unemployment rate (total and property crime) and percent young (property crime). Model 7 suffers from similar misspecification due to significant correlation between the Black Share of District and Unemployment Rate.
- ⁶“Male Share of District” is based on the residential population and varies by district.
- ⁷Standard errors are robust and clustered by MPD district.
- ⁸In Model 1, the constant provides an estimate of the white frisk rate.

Sources:

Milwaukee Police Department Stop Data, 2022
 U.S. Census American Community Survey 5-Year Estimates, 2017-2021

B-14: Frisks per Encounter Type by Race/Ethnicity

Race/Ethnicity	Encounters	Frisks	Frisks per Encounter	Frisks per Traffic Stop	Frisks per Field Interview
Black	20,106	187	0.9%	0.2%	16.7%
Hispanic/Latino	5,398	18	0.3%	0.1%	12.9%
Other Race	875	1	0.1%	0.0%	5.6%
White	5,808	19	0.3%	0.1%	11.7%
Total	32,187	225	0.7%	0.2%	15.6%

Notes:

¹The frisk rates presented in this table excludes 155 encounters categorized as a traffic stop, field interview, or no-action encounter where race and ethnicity information were missing.

²There were zero frisks documented in the excluded encounters.

³This table excludes 1,049 citation or warning records that could not be paired with encounter information from TraCS or RMS data. These records could represent additional encounters but lack necessary contextual information about the encounter.

⁴There were zero frisks documented during no-action encounters.

Source:

Milwaukee Police Department Stop Data, 2022

B-15: Individual-Level Frisk Regression Analysis Estimation Results

Dependent Variable: Indicator Variable Equal to 1 if Frisk Occurred	Model 1 Odds Ratio	Model 2 Odds Ratio	Model 3 Odds Ratio
Black	2.782*** (1.526 – 5.070)	2.990*** (1.696 – 5.271)	2.557*** (1.477 – 4.427)
Hispanic/Latino	1.011 (0.614 – 1.666)	1.098 (0.699 – 1.725)	1.115 (0.795 – 1.563)
Male		3.227*** (2.216 – 4.699)	2.946*** (1.986 – 4.372)
Young		1.492** (1.074 – 2.073)	1.418** (1.050 – 1.914)
Time of Day Fixed Effects			X
Quarter Fixed Effects			X
District Fixed Effects			X
Constant	0.0034*** (0.002 – 0.007)	0.0010*** (0.0005 – 0.0020)	0.0014*** (0.001 – 0.002)
Observations	30,534	30,449	30,449

Robust confidence intervals in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹Each observation represents an encounter with police.

Source:

Milwaukee Police Department Stop Data, 2022

B-16: Predicted Probabilities of Frisks by Race and District

Race/Ethnicity	District	Predicted Probability	95% Confidence Interval	
Black	District 1	2.72%	0.026	0.029
Hispanic/Latino	District 1	-	-	-
White	District 1	1.32%	0.012	0.014
Black	District 2	0.88%	0.008	0.009
Hispanic/Latino	District 2	0.53%	0.005	0.005
White	District 2	0.56%	0.005	0.006
Black	District 3	1.03%	0.010	0.011
Hispanic/Latino	District 3	-	-	-
White	District 3	0.22%	0.002	0.002
Black	District 4	0.79%	0.008	0.008
Hispanic/Latino	District 4	-	-	-
White	District 4	-	-	-
Black	District 5	1.22%	0.012	0.012
Hispanic/Latino	District 5	0.85%	0.008	0.009
White	District 5	0.25%	0.002	0.003
Black	District 6	0.28%	0.003	0.003
Hispanic/Latino	District 6	0.16%	0.002	0.002
White	District 6	0.23%	0.002	0.002
Black	District 7	0.69%	0.007	0.007
Hispanic/Latino	District 7	-	-	-
White	District 7	-	-	-

Notes:

¹Predicted probabilities are estimated from a full district by race interaction model that controls for age, gender, time of day, and quarter.

²The predicted probabilities estimate the rate of frisks per police encounter for a given race or ethnicity in a given district.

³There were no documented frisks with Hispanic/Latino subjects in Districts 1, 3, 4, and 7 or with white subjects in Districts 4 and 7.

Source:

Milwaukee Police Department Stop Data, 2022

B-17: Police Stop Disparities, 2019 - 2022

Race/Ethnicity Compared to White Residents/Stop Subjects	2019	2020	2021	2022
Traffic Stop Disparities				
Black (Licensed Driver Benchmark)	8.4***	9.5***	N/A	N/A
Black (Census Population Benchmark)	3.81**	4.44**	4.8*	4.5*
Hispanic/Latino (Licensed Driver Benchmark)	2.4***	2.9***	N/A	N/A
Hispanic/Latino (Census Population Benchmark)	not sig	not sig	not sig	not sig
Other Race (Licensed Driver Benchmark)	not sig	not sig	N/A	N/A
Other Race (Census Population Benchmark)	0.55**	0.58**	0.60**	0.53**
Field Interview Disparities				
Black	5.16**	5.71**	9.3**	10.1**
Hispanic/Latino	not sig	not sig	not sig	not sig
Other Race	not sig	not sig	not sig	not sig
No-Action Encounter Disparities				
Black	not sig	8.36*	7.5**	4.1*
Hispanic/Latino	not sig	2.13*	not sig	not sig
Other Race	not sig	not sig	2.35***	not sig
Frisk Disparities (Among Residents)				
Black	7.85**	9.97**	17.96*	8.04***
Hispanic/Latino	not sig	not sig	not sig	not sig
Other Race	-4.98**	-12.31**	-23.31*	not sig
Frisk Disparities (Among Stop Subjects)				
Black	2.0***	2.3***	3.1***	2.6***
Hispanic/Latino	1.3*	1.6***	2.4***	not sig
Other Race	N/A	N/A	N/A	N/A

Statistical Significance Thresholds *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹Quantities represent the magnitude of the disparity with respect to stop rates for white residents or frisks among stop subjects.

²Frisk disparities among stop subjects were not calculated for individuals of races or ethnicities other than Black or Hispanic/Latino due to extremely low numbers of frisks among individuals of the following race and ethnic categories: Native American or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander.

Source:

CJI Annual Data Analysis Reports: <https://www.cjinstitute.org/city-of-milwaukee-settlement-agreement/>

Appendix C: IOARS Analysis Tables

C-1: IOARS for Sampled Encounters by Race/Ethnicity and Quarter

Race/ Ethnicity	Q1 Stops	Q1 IOARS	Q2 Stops	Q2 IOARS	Q3 Stops	Q3 IOARS	Q4 Stops	Q4 IOARS
Black	202	89%	146	92%	171	92%	164	90%
Hispanic/ Latino	21	90%	37	95%	41	88%	17	82%
Other Race	1	100%	3	67%	6	100%	5	100%
White	32	91%	37	84%	33	88%	29	86%
Missing Race Information	3	0%	5	40%	3	0%	2	0%
Total	259	88%	228	90%	254	90%	217	88%

Notes:

¹Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, and Native Hawaiian or other Pacific Islander.

²IOARS determinations as made in CJJ's semiannual reviews.

Source:

Milwaukee Police Department Stop Data, 2022

C-2: IOARS for Sampled Frisks by Race/Ethnicity and Quarter

Race/ Ethnicity	Q1 Frisks	Q1 IOARS	Q2 Frisks	Q2 IOARS	Q3 Frisks	Q3 IOARS	Q4 Frisks	Q4 IOARS
Black	45	69%	53	75%	42	67%	45	60%
Hispanic/ Latino	2	50%	4	100%	7	86%	5	80%
Other Race	1	100%	0	N/A	0	N/A	0	N/A
White	8	25%	7	71%	1	100%	3	33%
Total	56	63%	64	77%	50	70%	53	60%

Notes:

¹Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, and Native Hawaiian or other Pacific Islander.

²IOARS determinations as made in CJI's semiannual reviews.

Source:

Milwaukee Police Department Stop Data, 2022

C-3: IOARS for Sampled Encounters by District and Quarter

	Q1 Stops	Q1 IOARS	Q2 Stops	Q2 IOARS	Q3 Stops	Q3 IOARS	Q4 Stops	Q4 IOARS	2022 Stops	2022 IOARS
District 1	12	100%	10	100%	5	100%	7	100%	34	100%
District 2	39	85%	50	82%	62	87%	39	85%	190	85%
District 3	46	87%	32	97%	31	90%	30	83%	139	89%
District 4	43	91%	23	87%	26	96%	26	92%	118	92%
District 5	40	93%	37	95%	51	84%	33	91%	161	90%
District 6	25	88%	36	94%	34	94%	28	86%	123	91%
District 7	43	84%	38	84%	36	92%	47	89%	164	87%
Missing District	11	82%	2	100%	9	89%	7	86%	29	86%
Total	259	88%	228	90%	254	90%	217	88%	958	89%

Notes:

¹IOARS determinations as made in CJJ's semiannual reviews.

Source:

Milwaukee Police Department Stop Data, 2022

C-4: IOARS for Sampled Frisks by District and Quarter

District	Q1 Frisks	Q1 IOARS	Q2 Frisks	Q2 IOARS	Q3 Frisks	Q3 IOARS	Q4 Frisks	Q4 IOARS	2022 Frisks	2022 IOARS
1	5	40%	5	100%	1	100%	4	75%	15	73%
2	7	71%	15	80%	12	83%	14	57%	49	71%
3	9	44%	10	70%	10	70%	5	80%	34	65%
4	12	67%	3	67%	3	33%	9	67%	27	63%
5	13	77%	15	73%	17	71%	10	70%	55	73%
6	2	50%	6	83%	1	100%	2	100%	11	82%
7	8	63%	10	70%	6	50%	9	22%	33	52%
Total	56	63%	64	77%	50	70%	53	60%	224	67%

Notes:

¹IOARS determinations as made in CJJ's semiannual reviews.

Source:

Milwaukee Police Department Stop Data, 2022

C-5: Summary of Variables in IOARS Analysis of Sampled Stops

	Mean	Standard Deviation	Minimum	Maximum	Obs.
IOARS Stop Rate	0.91	0.29	0.00	1.00	859
Black	0.75	0.44	0.00	1.00	859
Hispanic/Latino	0.12	0.32	0.00	1.00	859
Male	0.71	0.46	0.00	1.00	859
Young	0.69	0.46	0.00	1.00	859
Black Share of District	0.42	0.29	0.04	0.70	859
Hispanic/Latino Share of District	0.23	0.26	0.05	0.72	859
White Share of District	0.27	0.16	0.17	0.74	859
Male Share of District	0.48	0.02	0.46	0.53	859
Young Share of District	0.28	0.07	0.23	0.58	859
Unemployment Rate in District	6.64	1.54	3.50	8.33	859
Lagged Total Crime Rate in District	0.12	0.04	0.04	0.18	859
Lagged Violent Crime Rate in District	0.04	0.01	0.01	0.06	859
Lagged Property Crime Rate in District	0.06	0.02	0.03	0.12	859

Notes:

¹IOARS determinations as made in CJJ's semiannual reviews.

Sources:

Milwaukee Police Department Stop Data, 2022
 U.S. Census American Community Survey 5-Year Estimates, 2017-2021
 Milwaukee Part 1 and Part 2 Crime data, 2021

C-6: IOARS Stop Regression Estimation Results

Dependent Variable: Indicator Variable Equal to 1 if IOARS	Model 1 Odds Ratio	Model 2 Odds Ratio	Model 3 Odds Ratio	Model 4 Odds Ratio	Model 5 Odds Ratio	Model 6 Odds Ratio
Black	1.570** (1.056 - 2.334)	1.496** (1.020 - 2.194)	1.728** (1.133 - 2.637)	1.726*** (1.174 - 2.537)	1.682*** (1.144 - 2.473)	1.707*** (1.147 - 2.539)
Hispanic/ Latino	1.310 (0.849 - 2.020)	1.243 (0.791 - 1.953)	1.445* (0.973 - 2.147)	1.745*** (1.215 - 2.508)	1.782*** (1.232 - 2.577)	1.791*** (1.245 - 2.577)
Male		1.534* (0.968 - 2.430)	1.689*** (1.245 - 2.291)	1.728*** (1.232 - 2.424)	1.706*** (1.217 - 2.391)	1.688*** (1.194 - 2.385)
Young			0.519** (0.275 - 0.979)	0.523** (0.276 - 0.993)	0.518** (0.274 - 0.979)	0.516** (0.273 - 0.976)
Black Share of District				0.161** (0.0264 - 0.977)	0.210*** (0.100 - 0.438)	2.192** (1.109 - 4.334)
Hispanic/ Latino Share of District				0.0627*** (0.00981 - 0.401)	0.0712*** (0.0272 - 0.187)	0.0155*** (0.00741 - 0.0324)
Other Race Share of District				0.00268* (3.76e-06 - 1.914)	0.000176** (8.16e-08 - 0.380)	0.814 (0.121 - 5.460)
Young Share of District					52.99** (1.565 - 1,794)	1.328 (0.707 - 2.495)
Male Share of District						8.847e+23*** (2.476e+16 - 3.162e+31)
Constant	6.235*** (3.817 - 10.19)	4.864*** (2.612 - 9.054)	7.191*** (4.855 - 10.65)	46.47*** (9.160 - 235.8)	17.72*** (8.270 - 37.95)	0*** (0 - 1.77e-07)
Observations	902	902	859	859	859	859
McFadden's R ²	0.004	0.009	0.022	0.038	0.042	0.045

Robust confidence intervals in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹IOARS determinations as made in CJI's semiannual reviews.

²Each observation represents a traffic stop, field interview, or no-action encounter with police.

³Regression coefficients represent a change in the log odds of an encounter given a one unit increase in each regressor.

⁴The constant for Model 1 represents the log odds of an encounter meeting the IOARS standard for white subjects.

⁵Standard errors are clustered by MPD district.

⁶Models including district-level socioeconomic controls (unemployment rate, total crime rate, violent crime rate, and property crime rate) fail to converge as a maximum likelihood model due to multicollinearity with other district-level variables. Thus, Models 6 through 9 are not estimated.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Milwaukee Part 1 and Part 2 Crime data, 2021

C-7: Summary of Variables in IOARS Analysis of Sampled Frisks

	Mean	Standard Deviation	Minimum	Maximum	Observations
IOARS Frisk Rate	0.68	0.47	0.00	1.00	215
Black	0.84	0.37	0.00	1.00	215
Hispanic/Latino	0.08	0.28	0.00	1.00	215
Male	0.85	0.36	0.00	1.00	215
Young	0.74	0.44	0.00	1.00	215
Black Share of District	0.45	0.28	0.04	0.70	215
Hispanic/Latino Share of District	0.22	0.27	0.05	0.72	215
White Share of District	0.26	0.16	0.17	0.74	215
Male Share of District	0.48	0.02	0.46	0.53	215
Young Share of District	0.29	0.08	0.23	0.58	215
Unemployment Rate in District	6.93	1.36	3.50	8.33	215
Lagged Total Crime Rate in District	0.14	0.04	0.04	0.18	215
Lagged Violent Crime Rate in District	0.04	0.01	0.01	0.06	215
Lagged Property Crime Rate in District	0.06	0.02	0.03	0.12	215

Notes:

¹IOARS determinations as made in CJI's semiannual reviews.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Milwaukee Part 1 and Part 2 Crime data, 2021

C-8: IOARS Frisk Regression Estimation Results

Dependent Variable: Equal to 1 if IOARS	Model 1 Odds Ratio	Model 2 Odds Ratio	Model 3 Odds Ratio	Model 4 Odds Ratio	Model 5 Odds Ratio	Model 6 Odds Ratio	Model 7 Odds Ratio
Black	2.373*** (1.388 - 4.055)	2.524*** (1.515 - 4.203)	2.397*** (1.432 - 4.012)	3.790*** (1.666 - 8.624)	4.047*** (1.481 - 11.06)	4.086*** (1.496 - 11.16)	4.242*** (1.519 - 11.85)
Hispanic/Latino	5.556*** (1.821 - 16.95)	5.745*** (1.752 - 18.84)	5.322*** (1.627 - 17.41)	5.569*** (1.528 - 20.30)	5.696** (1.466 - 22.13)	5.723** (1.478 - 22.16)	5.697** (1.461 - 22.22)
Male		2.307** (1.051 - 5.063)	2.667** (1.085 - 6.554)	2.550** (1.031 - 6.305)	2.583** (1.036 - 6.436)	2.576** (1.016 - 6.533)	2.307 (0.828 - 6.427)
Young			1.183 (0.533 - 2.624)	1.156 (0.515 - 2.592)	1.149 (0.521 - 2.534)	1.138 (0.484 - 2.676)	1.082 (0.431 - 2.719)
Black Share of District				0.181** (0.0329 - 0.999)	0.0819** (0.0101 - 0.664)	0.126 (0.00262 - 6.019)	2.16e-07*** (1.17e-08 - 4.01e-06)
Hispanic/Latino Share of District				0.367 (0.0779 - 1.728)	0.173* (0.0276 - 1.086)	0.157** (0.0263 - 0.935)	0.000106*** (1.47e-05 - 0.000761)
Other Race Share of District				0.00162 (4.88e-07 - 5.358)	0.000965* (2.56e-07 - 3.638)	0.00691 (3.72e-10 - 128,362)	5.90e-07*** (3.62e-08 - 9.62e-06)
Young Share of District					0.168 (0.00510 - 5.550)	0.0671 (0.000215 - 20.95)	0.000381*** (1.75e-05 - 0.00831)
Male Share of District						2,998 (0 - 3.713e+28)	1.41e-05** (2.86e-10 - 0.697)
District Unemployment Rate							3.729*** (2.677 - 5.195)
Constant	0.900 (0.547 - 1.481)	0.424 (0.137 - 1.306)	0.358 (0.0733 - 1.747)	1.128 (0.0875 - 14.54)	3.095 (0.355 - 27.00)	0.0612 (0 - 9.262e+10)	1,386*** (23.32 - 82,371)
Observations	222	222	215	215	215	215	215
McFadden's R²	0.020	0.036	0.040	0.050	0.051	0.051	0.064

Robust confidence intervals in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹IOARS determinations as made in CJJ's semiannual reviews.

²Each observation represents a traffic stop, field interview, or no-action encounter with police.

³Regression coefficients represent a change in the log odds of a frisk given a one unit increase in each regressor.

⁴The constant for Model 1 represents the log odds of an encounter meeting the IOARS standard for frisks for white subjects.

⁵Standard errors are clustered by MPD district.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

C-9: Predicted Probabilities and Average Marginal Effects of IOARS for Sampled Stops and Sampled Frisks

	IOARS for the Stop		IOARS for the Frisk	
	Predicted Probability	Average Marginal Effect	Predicted Probability	Average Marginal Effect
Black	91.3% 0.004	5.1%***	70.2%	32.2%***
Hispanic/Latino	91.6% 0.010	5.4%***	75.6%	37.6%**
White	86.2% 0.018		38.0%	

*** p<0.01, ** p<0.05, * p<0.1

Notes:

¹Predicted probabilities based on estimates for Model 6 in Table C-6 and Model 7 in Table C-8.

²Average Marginal Effect measures the difference in the Black predicted probability of IOARS as compared to predicted probability for white stop or frisk subjects. Similar calculations were made for the difference between Hispanic/Latino and white stop or frisk subjects.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Appendix D: Hit Rate Analysis Tables

D-1: Frisks and Contraband Discovery by Race

Subject Race/ Ethnicity	Frisks	Contraband			Contraband Discovery Rate per Frisk (Percent)			Difference in Discovery Rate Per Frisk, As Compared to White Subjects (Percent)		
		All	Drug	Weapon	All	Drug	Weapon	All	Drug	Weapon
Black	187	38	11	17	20.3%	5.9%	9.1%	15.1%	5.9%	3.8%
Hispanic/ Latino	18	6	0	3	33.3%	0.0%	16.7%	28.1%	0.0%	11.4%
Other Race	1	0	0	0	0.0%	0.0%	0.0%	-5.3%	0.0%	-5.3%
White	19	1	0	1	5.3%	0.0%	5.3%			
Total	225	45	11	21	20.0%	4.9%	9.3%			

Notes:

¹ Contraband Discovery Rate per Frisk” is the proportion of frisks that result in discovery of contraband.

² Difference in Discovery Rate per Frisk, As Compared to White Subjects” is calculated as the contraband discovery rate per frisk for Black or Hispanic/Latino subjects, minus the contraband discovery rate per frisk for white subjects.

³ Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, and Native Hawaiian or other Pacific Islander.

⁴All contraband includes weapons, drugs, and other items such as drug paraphernalia, stolen goods, and items used or gained during the course of a crime. Weapon contraband includes firearms and non-firearm weapons. Drug contraband includes all illegal drugs and prescription drugs not prescribed to the subject.

Source:

Milwaukee Police Department Stop Data, 2022

D-2: Contraband Regression Results, All Contraband

	Model 1 Odds ratio	Model 2 Odds ratio	Model 3 Odds ratio
Black	5.055 (0.657 – 38.86)	4.660 (0.595 – 36.50)	4.792* (0.987 – 23.25)
Hispanic/Latino	11.45* (0.752 – 174.4)	9.961 (0.589 – 168.5)	6.694 (0.478 – 93.78)
Male		2.433 (0.631 – 9.373)	2.414 (0.335 – 17.40)
Young		1.032 (0.475 – 2.240)	0.955 (0.465 – 1.962)
Time of Day Fixed Effects			X
Quarter Fixed Effects			X
District Fixed Effects			X
Observations	224	217	217

Robust confidence intervals in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹These regressions are based on data from four quarters of 2022.

²Observations in the data are at the level of the individual stop involving a frisk.

³The "other race" category was omitted from this analysis due to the low frisk totals across all districts and time periods.

⁴The dependent variable is an indicator variable equal to one if contraband was found and zero otherwise.

⁵Time-of-day fixed effects are indicator variables for the quarter of the day in which the stop occurred (9:00am-2:59pm, 3:00pm-8:59pm, 9:00pm-2:59am, 3:00am-8:59am).

⁶Standard errors are clustered by MPD district.

⁷Odds Ratios are reported with CI in parentheses beneath.

Source:

Milwaukee Police Department Stop Data, 2022

D-3: Contraband Regression Results, Weapons and Drugs

	Weapons Contraband	Drug Contraband
	Model 3 Odds ratio	Model 3 Odds ratio
Black	2.918 (0.296 – 28.76)	1.618 (0.662 – 3.958)
Hispanic/Latino	4.543 (0.217 – 95.29)	-
Male	4.073 (0.337 – 49.24)	-
Young	0.784 (0.389 – 1.582)	6.634*** (1.782 – 24.71)
Time of Day Fixed Effects	X	X
Quarter Fixed Effects	X	X
District Fixed Effects	X	X
Observations	217	169

Robust confidence intervals in parentheses *** p<0.01, ** p<0.05, * p<0.1

Notes:

¹These regressions are based on data from four quarters of 2022.

²Observations in the data are at the level of the individual stop involving a frisk.

³The "other race" category was omitted from this analysis due to the low frisk totals across all districts and time periods.

⁴The dependent variable in the weapons contraband analysis is an indicator variable equal to one if weapons contraband was found and zero otherwise.

⁵The dependent variable in the drug contraband analysis is an indicator variable equal to one if drug contraband was found and zero otherwise.

⁶Time-of-day fixed effects are indicator variables for the quarter of the day in which the stop occurred (9:00am-2:59pm, 3:00pm-8:59pm, 9:00pm-2:59am, 3:00am-8:59am).

⁷Standard errors are clustered by MPD district.

⁸Odds Ratios are reported with CI in parentheses beneath.

⁹Coefficients for Hispanic/Latino and Male are omitted in the drug contraband model because of collinearity with other variables.

Source:

Milwaukee Police Department Stop Data, 2022

D-4: Predicted Probabilities Contraband Discovery by Type of Contraband and Race/Ethnicity

	All Contraband		Weapons Contraband		Drug Contraband	
	Predicted Probability	Average Marginal Effect	Predicted Probability	Average Marginal Effect	Predicted Probability	Average Marginal Effect
Black	23.2%	16.8%***	15.7%	9.0%	14.8%	14.8%
Hispanic/Latino	29.1%	22.7%***	21.4%	14.7%	10.6%	10.6%
White	6.4%		6.7%		0.0%	

*** p<0.01, ** p<0.05, * p<0.1

Notes:

¹Predicted probabilities based on estimates presented in Model 3 of Table D-2 and Table D-3.

²Average Marginal Effect measures the difference in the Black predicted probability of contraband discovery as compared to predicted probability of contraband discovery for white frisk subjects. Similar calculations were made for the difference between Hispanic/Latino and white frisk subjects.

Source:

Milwaukee Police Department Stop Data, 2022

Appendix E: Hit Rates to Crime Analysis Tables

E-1: Ratio of Stops to Crime Rate, Per 1,000 Residents

District	Crime Rate	Ratio of Traffic Stop Rate to Crime Rate	Ratio of Field Interview Rate to Crime Rate	Ratio of No-Action Encounter Rate to Crime Rate	Ratio of Frisk Rate to Crime Rate
1	144.5647	0.1030	0.0086	0.0003	0.0021
2	104.1659	1.0313	0.0294	0.0010	0.0058
3	144.5664	0.4188	0.0176	0.0008	0.0030
4	119.9306	0.5196	0.0125	0.0003	0.0023
5	184.6538	0.5162	0.0171	0.0004	0.0048
6	44.7382	1.5107	0.0246	0.0010	0.0021
7	131.0894	0.5660	0.0119	0.0006	0.0024

Notes:

¹The ratio of the traffic stop rate to the crime rate is calculated as (traffic stops per 1000 residents 16-80 years old) divided by (crimes per 1000 residents) in each district.

²The ratio of the field interview, no-action encounter, and frisk rates to crime rates are calculated as (encounter type per 1,000 residents) divided by (crimes per 1,000 residents) in each district.

Sources:

Milwaukee Police Department Stop Data, 2022

U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Milwaukee Part 1 and Part 2 Crime data, 2021

E-2: Ratio of Majority Black and Hispanic/Latino Districts to White Districts

Average ratios comparison	Traffic Stop Ratios	Field Interview Ratios	No-Action Encounter Ratios	Frisk Ratios
Majority Black Districts (4,5,7)	0.5339	0.0138	0.0004	0.0032
Majority Hispanic/Latino District (2)	1.0313	0.0294	0.0010	0.0058
Majority White Districts (1,6)	0.8069	0.0166	0.0007	0.0021
Mixed Race/Ethnicity District (3)	0.4188	0.0176	0.0008	0.0030
Comparison of Black Districts to White Districts	-34%	-17%	-43%	52%
Comparison of Hispanic/Latino District to White Districts	28%	77%	43%	176%
Comparison of Mixed Race/Ethnicity District to White Districts	-48%	6%	14%	43%

Notes:

¹Districts are considered “majority” for each race or ethnic category if the proportion of the population exceeds 50% for a given race or ethnic category. District numbers for each comparison are in parentheses.

²District 3 does not represent a clear racial or ethnic majority.

³Traffic stop ratios are calculated as the average ratio of the traffic stop rate to the crime rate for each district grouping. Similar calculations were made for field interviews, no-action encounters, and frisks.

⁴The comparison of Black districts to white districts represents the percent change in the average encounter ratio from white districts to Black districts. Similar calculations were made for the comparison of Hispanic/Latino districts to white districts and for the comparison of the mixed race/ethnicity district to white districts.

Sources:

Milwaukee Police Department Stop Data, 2022

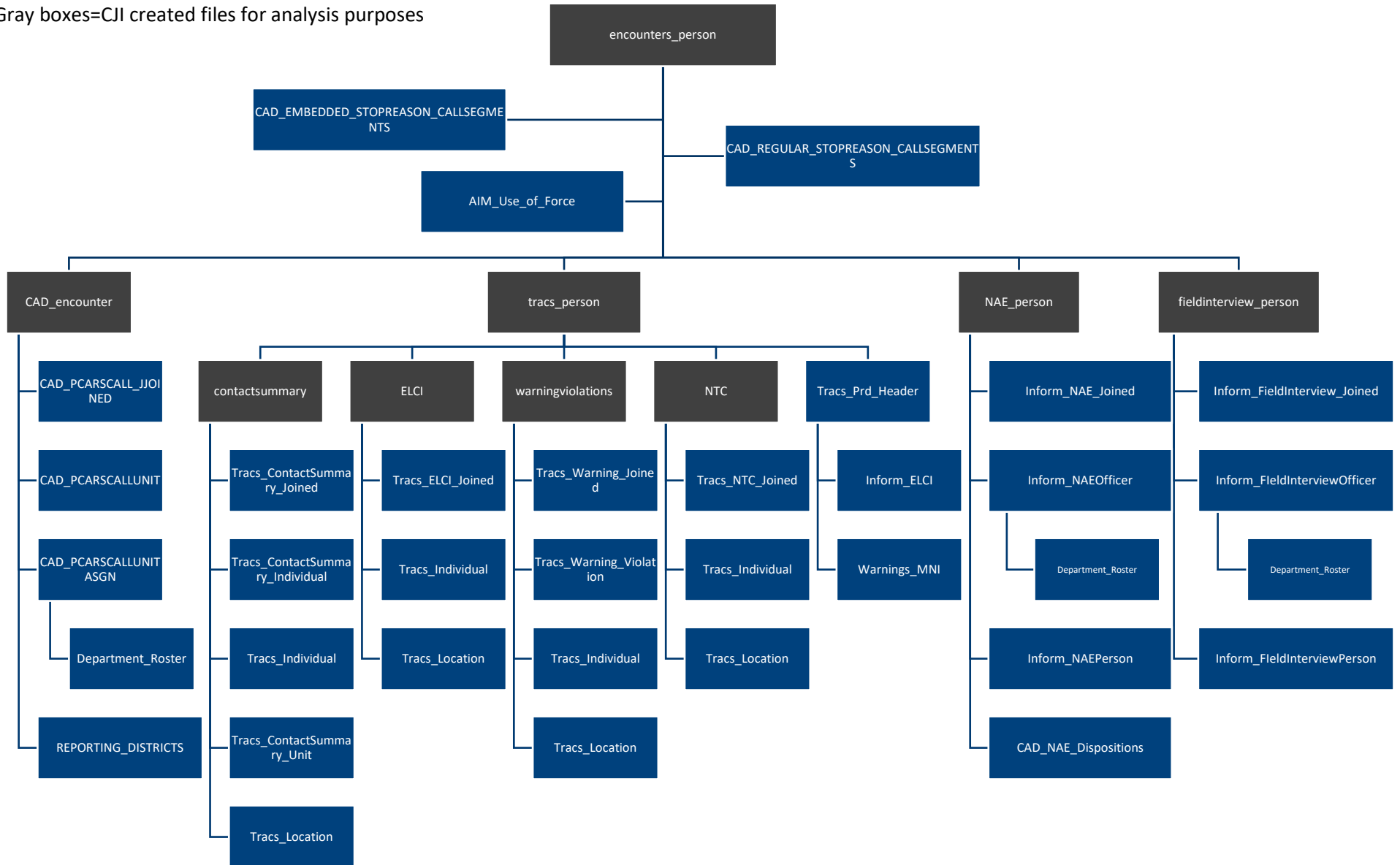
U.S. Census American Community Survey 5-Year Estimates, 2017-2021

Milwaukee Part 1 and Part 2 Crime data, 2021

Appendix F: Data Linkages Chart

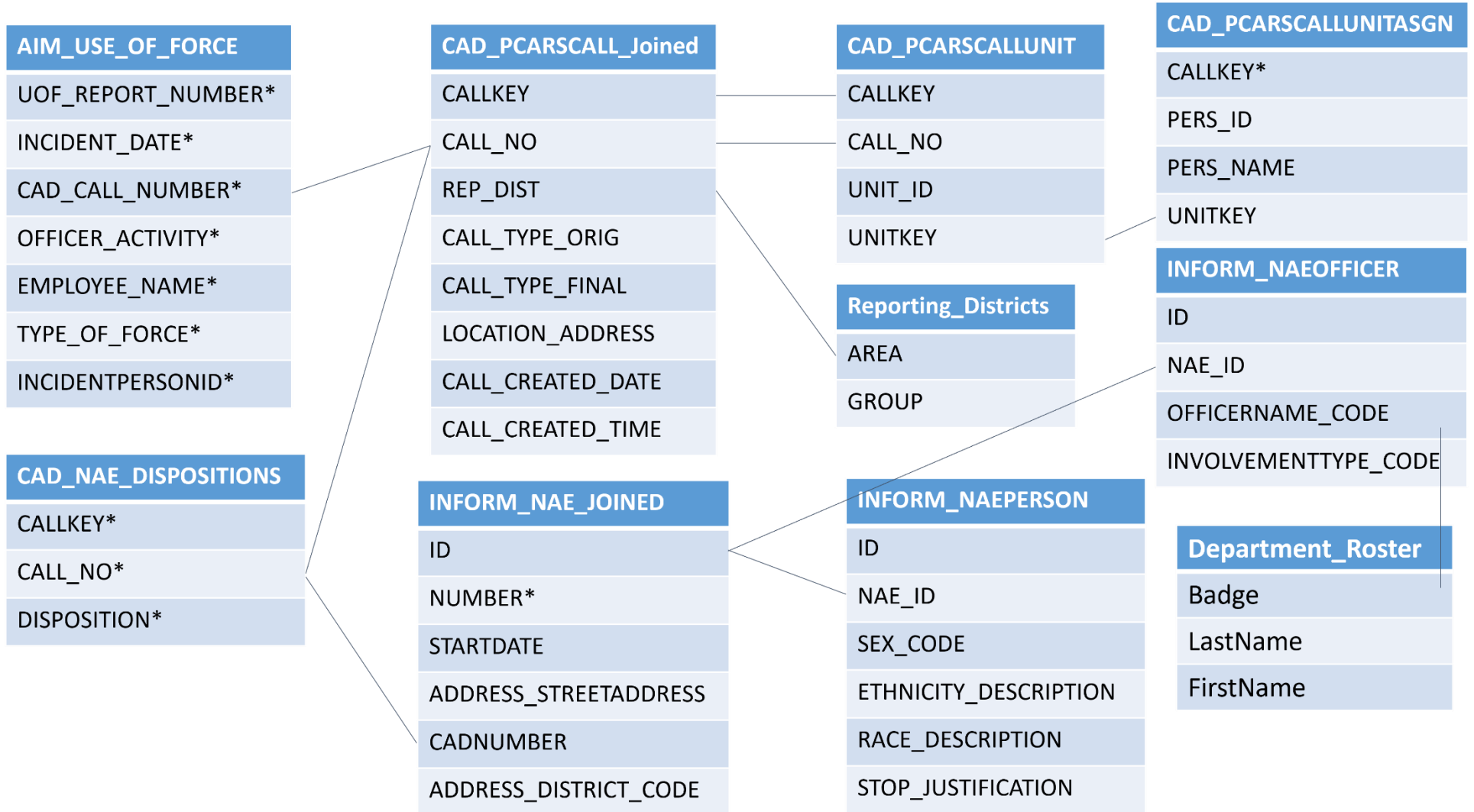
“NAE” in the below charts refers to “no-action encounter”

Gray boxes=CJI created files for analysis purposes

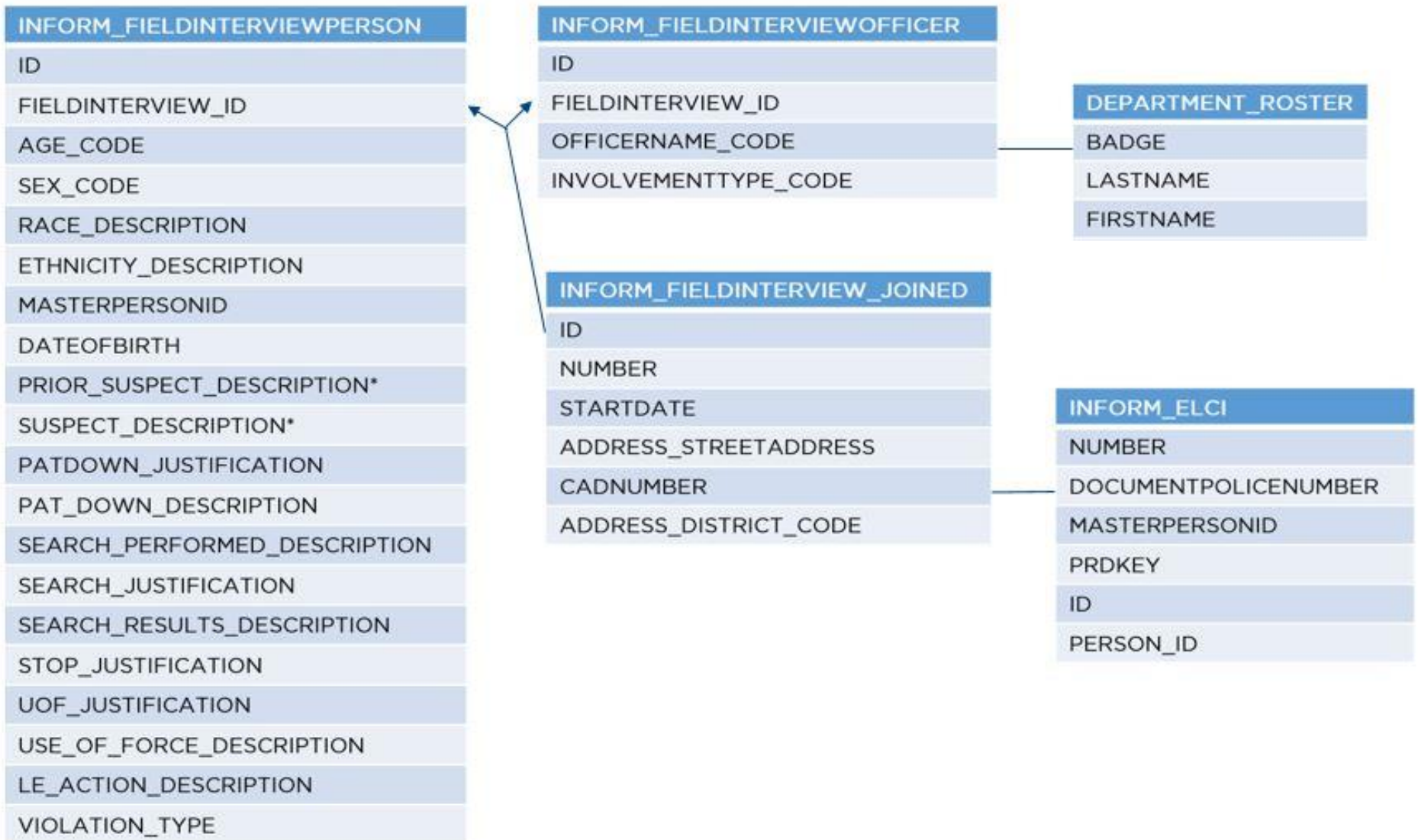


Appendix G: Encounter Data Linkages Charts

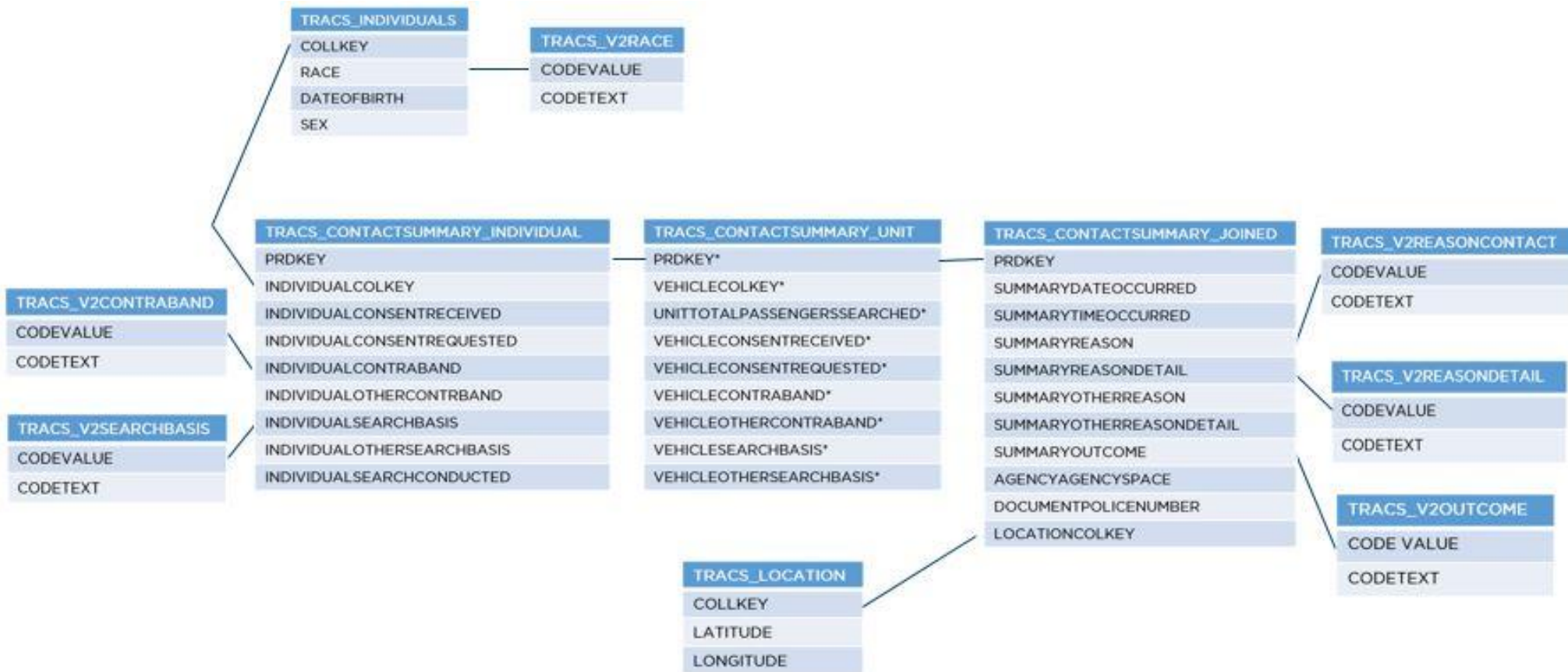
“NAE” in the below charts refers to “no-action encounter”



CALL_NO and CADNUMBER link to CADNUMBER and DOCUMENTPOLICENUMBER below.



CADNUMBER and DOCUMENTPOLICENUMBER link to DOCUMENTPOLICENUMBER below.



COLLKEY in TRACS_INDIVIDUALS links to INDIVIDUALCOLKEY and DEFENDANTCOLKEY below.
 COLLKEY in TRACS_LOCATION links to LOCATIONCOLKEY below.
 PRDKEY links to PRDKEY below.

