

# City of Milwaukee Settlement Agreement Analysis of 2023 Traffic Stops, Field Interviews, No-Action Encounters, and Frisks



The Crime and Justice Institute  
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The photo on this cover depicts “Honor Difference”, painted in 2017 by Katie Mullen and Jordan Pintar. This mural, which was commissioned by 88Nine Radio Milwaukee, can be found on the northern exterior wall of Var Gallery & Studios. You can learn more about this mural on the Milwaukee Mural Map website, [Milwaukee Mural Map](#). Photo taken by 88Nine Radio Milwaukee.

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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.*<sup>1</sup> The full report required by the Settlement Agreement (SA V.A.9)<sup>2</sup> 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) Sixth Annual Report.<sup>3</sup>

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 fifth in this series and are based on quarterly police encounter data provided to CJI for the calendar year 2023. 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 2023 and May 2024.<sup>4</sup>

Consistent with the requirements of the Settlement Agreement, four main analyses are detailed in this report on 2023 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 Annual Data Report we adjusted the traffic stop regression analysis to use a Census population benchmark rather than drivers' license

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<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Crime and Justice Institute. (December 2024). *City of Milwaukee Settlement Agreement: Sixth Annual Report*.

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

data, as updated drivers' license data are unavailable.<sup>5</sup> 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 2023 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 Sixth Annual Report.

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<sup>5</sup> 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 2022 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 CJI by the MPD for calendar year 2023. 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 Sixth 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 Process<sup>6</sup>

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.<sup>7</sup>

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 data file containing each officer that responded to a given call.<sup>8</sup> The squad unit data is merged by the call key number, and the responding officer

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<sup>6</sup> The merge process describes how CJI links data files together to create data sets for analysis.

<sup>7</sup> "INFORM\_FIELDINTERVIEWOFFICER" and "INFORM\_NOACTIONENCOUNTEROFFICER" are merged with "DEPARTMENT\_ROSTER" via "officername\_code" in the RMS files and "badge" in the department roster file.

<sup>8</sup> "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.



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.<sup>9</sup> 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.<sup>10</sup> 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.<sup>11</sup> 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.<sup>12</sup> 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.<sup>13</sup> 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.<sup>14</sup>

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

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<sup>9</sup> “CAD\_PCARSCALL\_Joined” has a field called “rep\_dist” that associates with “area” in “Reporting\_districts.”

<sup>10</sup> The “noactionencounter\_id” is the unique no-action encounter identifier in “INFORM\_NOACTIONENCOUNTEROFFICER” and “INFORM\_NOACTIONENCOUNTERPERSON” that links to “id” in “INFORM\_NOACTIONENCOUNTER\_JOINED.”

<sup>11</sup> “INFORM\_NOACTIONENCOUNTER\_JOINED” indicates the CAD number is “cadnumber” and this is matched with “call\_no” in “CAD\_PCARSCALL\_Joined.”

<sup>12</sup> 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.”

<sup>13</sup> 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.”

<sup>14</sup> “INFORM\_FIELDINTERVIEW\_JOINED” indicates the CAD number is “cadnumber” and this is matched with “call\_no” in “CAD\_PCARSCALL\_Joined.”

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.<sup>15</sup>

We merge the contact summary narrative file with the contact summary file containing involved individuals.<sup>16</sup> 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.<sup>17</sup> 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.<sup>18</sup> 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.<sup>19</sup>

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.

The TraCS data file structure is such that each form (contact summary, electronic citations (ELCI)<sup>20</sup>, 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

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<sup>15</sup> The keys are indicated in the data linkages charts presented in Appendix F, and are called “individualcolkey” in “TRACS\_INDIVIDUAL”, “collkey” in “TRACS\_LOCATION” and “prdkey” in “TRACS\_CONTACTSUMMARY\_JOINED,” “TRACS\_CONTACTSUMMARY\_INDIVIDUAL,” and “TRACS\_CONTACTSUMMARY\_UNIT.”

<sup>16</sup> “TRACS\_CONTACTSUMMARY\_JOINED” merges with “TRACS\_CONTACTSUMMARY\_INDIVIDUAL” using “prdkey.”

<sup>17</sup> “TRACS\_INDIVIDUAL” 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 “individualcolkey” in “TRACS\_INDIVIDUAL” with “prdkey” in “TRACS\_CONTACTSUMMARY\_INDIVIDUAL.”

<sup>18</sup> “TRACS\_LOCATION” is associated with “TRACS\_CONTACTSUMMARY\_JOINED” via “collkey” and “locationcolkey” in the two files, respectively.

<sup>19</sup> “TRACS\_WARNING\_JOINED” and “TRACS\_WARNING\_VIOLATION” are associated with encounter data through the “TRACS\_PRD\_HEADER” file using “prdkey” and the link.

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

exists for the form, we merge “TRACS\_INDIVIDUAL” 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.<sup>21</sup> 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.<sup>22</sup>

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.<sup>23</sup> We also merge the CAD segments which represent additional narrative for traffic stops.<sup>24</sup>

### 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 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

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<sup>21</sup> 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.

<sup>22</sup> 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.

<sup>23</sup> “cad\_call\_number” in “AIM\_USE\_OF\_FORCE” is associated with “documentpolicenumber” in TraCS form files and “call\_no” in “CAD\_PCARSCALL\_Joined.”

<sup>24</sup> “call\_no” in “CAD\_REGULAR\_STOPREASON\_CALLSEGMENTS” and “CAD\_EMBEDDED\_STOPREASON\_CALLSEGMENTS” is associated with the call number in the primary CAD file.

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.<sup>25</sup>

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 2023 includes an estimated 27,381 traffic stops, 1,276 field interviews, and 32 no-action encounter events documented by officers.<sup>26</sup> Of these encounter events, 217 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 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

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<sup>25</sup> 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.

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

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 (745 encounters or 2.5% of encounters for 2023) and the most encounters occurred in District 2 (6,003 encounters or 20.2% of encounters for 2023). District 2 was the leader in number of traffic stops (5,639) and no-action encounters (12), with District 5 documenting the highest number of field interviews for the year (264).

### **Missing Demographic Data**

We discuss missing data by each data element in the Compliance chapter of the Sixth 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. Three percent of traffic stops lack information on race/ethnicity, gender, age, or location data. Missing demographic and location data for field interviews varies from five to seven percent missing throughout the year, while missing information for encounters involving frisks varies from four to seven percent. No-action encounters appear to lack the most demographic or location information with 31 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. Nonetheless, SA IV.A.3.a requires officers to record specific race and ethnic information for every encounter, including no-action encounters.

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 2022 American Community Survey 5-Year Estimates to represent population data for this analysis.<sup>27</sup> 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."

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<sup>27</sup> U.S. Census Bureau, 2022, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301.

- 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.<sup>28</sup> 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 2022 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 and Part II crimes against persons. Property crime categories include Part I property crimes and Part II crimes against property. The total crime category adds violent and property crime together, as well as Part II crimes against society.<sup>29</sup> 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 2022 American Community Survey 5-year estimates for each district.

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<sup>28</sup> 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.

<sup>29</sup> 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 573,299 residents.<sup>30</sup> According to the U.S. Census Bureau's 2022 American Community Survey 5-Year Estimates, females made up 51 percent of the Milwaukee population, with the percentage of males slightly lower at 49 percent. Around thirty-one percent of Milwaukee residents were between the ages of 18 and 34.<sup>31</sup> The estimated median household income for residents of Milwaukee in 2022 dollars was \$49,733, with 24 percent of Milwaukee residents' incomes below the poverty level.<sup>32</sup> The average unemployment rate across police districts was 6.23 percent.<sup>33</sup>

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 five percent according to the 2022 data.<sup>34</sup> District 2, which includes Walker's Point, Historic Mitchell Street, and Clarke Square, also had an unemployment rate of five 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 eight percent. District 6, home to Jackson Park, Bay View, and Mitchell International Airport, had an unemployment rate of three percent.<sup>35</sup>

Based on the American Community Survey 5-year population estimates (2022), Black residents accounted for 38 percent of the population of Milwaukee, white residents comprised 34 percent, Hispanic/Latino residents constituted 19 percent, and residents of other races made up nine percent.<sup>36</sup> 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 56 percent, respectively). District 2 has the highest proportion of Hispanic/Latino residents (71 percent). Districts 3, 4, 5, and 7 have the highest proportion of Black residents (44, 66, 69, and 68 percent, respectively). Districts 2 and 3 have the narrowest differences in proportions of white and Black residents than any other district.

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<sup>30</sup> U.S. Census Bureau, 2022, American Community Survey 5-Year Estimates, Table S0101

<sup>31</sup> U.S. Census Bureau, 2022, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301, DP05

<sup>32</sup> U.S. Census Bureau QuickFacts, Milwaukee City, Wisconsin, Population Estimates, July 1, 2023, <https://www.census.gov/quickfacts/fact/table/milwaukeecitywisconsin>

<sup>33</sup> U.S. Census Bureau, 2022, American Community Survey 5-Year Estimates, Table DP03

<sup>34</sup> U.S. Census Bureau, 2022, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301

<sup>35</sup> Milwaukee Police Department, 2009 Annual Report 5, [https://city.milwaukee.gov/ImageLibrary/Groups/mpdAuthors/Documents/2009\\_Annual\\_Report.pdf](https://city.milwaukee.gov/ImageLibrary/Groups/mpdAuthors/Documents/2009_Annual_Report.pdf); U.S. Census Bureau, 2022, American Community Survey 5-Year Estimates, Tables B02001, B03002, S0101, S2301

<sup>36</sup> U.S. Census Bureau, 2022, 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 44 percent Black residents, 35 percent white residents, nine percent Hispanic/Latino residents, and 11 percent of residents of other races or ethnicities.

For ease of interpretation, the stop rates are presented per 1,000 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 71% Hispanic/Latino, has the highest stop rates overall (101 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 4.4 per 1,000 residents, with a residential population that is 69 percent Black, with Districts 1 and 6 tied for the lowest field interview rate of 0.7 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, and 5, and lowest in Districts 1, 4, 6, and 7 (0 per 1,000 residents). The frisk rates in Table B-4 show that Districts 3, 5, and 7 have higher frisks per 1,000 residents than the average for the City overall (0.5 per 1,000, 0.7 per 1,000, and 0.6 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 2023, the traffic stop rate for Black residents of typical driving age (16 to 80 years old) was 3.2 times higher than for white residents and the traffic stop rate for Hispanic/Latino drivers was 1.8 times higher than for white drivers. The field interview rate for Black residents was 10 times higher than for white residents. No-action encounter rates, while rare overall, were 4.8 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 13 times higher than the frisk rate for white subjects, while frisk rates for Hispanic/Latino residents and residents of other races were 2.6 and 2 times higher than for white residents, respectively. The disparity in the rate of traffic stops, field interviews, no-action encounters, and frisks for Black residents compared to white residents all increased from 2022.

While descriptive of 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:<sup>37</sup>

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.
  - 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.
8. 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.
  - 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.

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 9 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 1 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

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<sup>37</sup> 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.

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.

$$\text{Traffic Stop Rate}_{ragdt} = \frac{\text{Total Traffic Stops}_{ragdt}}{\text{Total Drivers}_{rdt}} * 1,000$$

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 2023 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 2023, the MPD stop rate was higher for Black drivers than white drivers by 8.34 per 1,000 residents of typical driving age. The difference in traffic stop rates for Black residents and white residents is statistically significant at the 95 percent confidence level. The stop rate was higher for Hispanic/Latino drivers than white drivers by 0.19 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 1.48 stops per 1,000 residents. This difference is statistically significant at the 90 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 2.637 per 1,000 potential drivers. This indicates that the estimated traffic stop rate for Black drivers is 4.2 times higher than the traffic stop rate for white drivers, or a rate that is 316 percent higher.<sup>38</sup> The estimated traffic stop rate for potential drivers of races and ethnicities other than Black or Hispanic/Latino is 56 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

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 2023 the MPD field interview rate was higher for Black residents than white residents by 1.702 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 12.1 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

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<sup>38</sup> The stop rate for Black drivers equals the white stop rate of 2.637 stops per 1,000 potential drivers + 8.34 stops per 1,000 potential drivers = 10.977 stops per thousand potential drivers or  $10.977/2.637 = 4.16$  (4.2 when rounded to the nearest tenth). 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.

differences are pronounced. While controlling for known predictors (Model 6), the results indicate that in 2023 there were no significant racial or ethnic disparities in the MPD no-action encounter rate.

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 2023 the MPD frisk rate was higher for Black residents than white residents by 1.629 frisks per 1,000 residents. This difference is statistically significant at the 95 percent confidence level. Given the estimated average frisk rate for white residents, the frisk rate for Black residents is 20.9 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.

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 Hispanic/Latino and Black subjects than white subjects (19 percent, 16 percent, and 9 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 2.5 times that of a white subject. This result is statistically significant at the 90 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 0.43 percent. The predicted probability of a Hispanic/Latino stop subject getting frisked in District 6 is 0.06 percent and the predicted probability of a white stop subject getting frisked in that district is 0.13 percent. This indicates that during police encounters in District 6 for the year 2023, 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 3 where the predicted probability that Black subjects are frisked during an encounter with police is 0.90 percent and the predicted probability for white subjects to be frisked when encountered by police is 0.55 percent.

Table B-17 provides a compilation of the stop rate regression findings for 2019-2023. 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 2023, Black individuals were 12.1 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 encounters in 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 five 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 five 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 from 2021 to 2023. 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 or 2023. 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 five years.

The main findings of the Milwaukee stop rate regression analysis are summarized below. For 2023, 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 4.2 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 56 percent lower than for white residents, a statistically significant difference.
- The field interview rate for Black residents is 12.1 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.
- There are no statistically significant race/ethnicity differences in no-action encounter rates.
- The frisk rate for Black residents is 20.9 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 2.5 times higher for Black stop subjects than it is for white stop subjects. This result is statistically significant at the 90% 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 2023, Black residents of Milwaukee were consistently more likely than white residents to encounter police during a traffic stop, field interview, and were 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 or 2023.

## 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 November 2023 and May 2024, which include an analysis of traffic stops, field interviews, no-action encounters, and frisks that took place during the 2023 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."<sup>39</sup> 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."<sup>40</sup> The semiannual reviews for 2023 encounters offer details regarding the sampling strategy and IOARS decision rules that were used in the reviews.<sup>41</sup>

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 to 94 percent meeting the standard in 2023. 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 91 to 97 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 2 (87 percent) and highest in quarter 3 (96 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 217 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 61 percent to 73 percent of the time throughout 2023. While MPD has improved with establishing IOARS in 2022 and 2023 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 (182 of the 217 frisks in the sample occurred with Black individuals), it is difficult to make comparisons to other race or ethnic categories. For example, two of the five frisks that occurred with white subjects in quarter 3 met the IOARS standard. While a larger percentage of frisks with Black subjects met the IOARS standard for that quarter (79 percent), it still means that 12 of those 57 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 1 had the lowest percentage of stops

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<sup>39</sup> 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>

<sup>40</sup> Milwaukee Police Department Standard Operating Procedure 085 "Citizen Contacts, Field Interviews, Search and Seizure." Effective January 25, 2019.

<sup>41</sup> <https://city.milwaukee.gov/fpc/Reports/Crime-and-Justice-Institute-Reports.htm>

meeting the IOARS standard (70 percent) and Districts 4 and 5 had the highest percentage (96 percent each). For frisks, District 6 had the lowest proportion of frisk documentation meeting the IOARS standard (57 percent) and District 2 had the highest percentage of frisks meeting IOARS (78 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 no 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 94.2 percent of stops involving white subjects, as compared to an estimated 95.6 percent for Black subjects and 94.9 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 Black subjects are higher than one, indicating the estimated odds for IOARS documentations for frisks are higher for Black subjects relative to white subjects. Odds ratios for Hispanic/Latino subjects are less than one, indicating a difference for IOARS documentations for frisks for Hispanic/Latino subjects relative to white subjects. However, these odds are not statistically significant. The predicted probability of a frisk meeting the IOARS standard for interactions with Black subjects is 71.0 percent and with Hispanic/Latino subjects is 54.8 percent, compared to 55.5 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 84 percent of frisks in the sample were conducted with Black subjects, while the rate generated for white subjects is based on documentation for 11 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 2023, 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 to 94 percent.
- IOARS documentation to justify frisks of subjects of any race or ethnic category is higher than in previous years but still deficient throughout 2023, with 61 percent of records meeting the IOARS standard in quarter 4 to a high of 73 percent meeting the standard in quarter 3.
- The probability of proper IOARS documentation is not statistically different by race or ethnicity.
- The probability of proper IOARS documentation for frisks involving Black subjects is higher relative to white subjects, while the probability of proper IOARS documentation for frisks involving Hispanic/Latino subjects is lower relative to white subjects. However, these differences are not 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, 217 frisks were documented in 2023 during traffic stops, field interviews, and no-action encounters. Of those frisks, 53 (24 percent) resulted in the discovery of contraband. Drug contraband was discovered during 17 frisks and 24 frisks recovered weapons, with discovery rates of 7.8 percent and 11.1 percent, respectively. As previously discussed, the majority of the 217 documented frisks in 2023 occurred with Black stop subjects (182), followed by Hispanic/Latino stop subjects (18), white stop subjects (11), and very few frisks of stop subjects of other races or ethnicities (6). 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 12.1 and 5.6 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.<sup>42</sup> 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:

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.

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<sup>42</sup> 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.

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 14.7 percentage points, and higher for Hispanic/Latino stop subjects by 3 percentage points. However, these results are not statistically significant.

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 18.8 percentage points more likely to yield weapons than for frisks involving white stop subjects, while weapon discovery is 21.8 percentage points higher for Hispanic/Latino frisk subjects than white frisk subjects. However, these differences are not statistically significant. Drug discovery rates were higher for Black stop subjects than white subjects (5.1 percent) and lower for Hispanic/Latino stop subjects than white stop subjects (-1.8 percent) and these differences were not statistically significant.

The main findings of the frisk and contraband hit rate analysis are summarized below. For 2023, after ruling out other demographic and district-level explanatory variables, we find:

- The probability of discovering contraband during a frisk is higher for Black and Hispanic/Latino frisk subjects than for white frisk subjects; however, these differences are not statistically significant.
- Weapon discovery rates during frisks are higher for both Black subjects and Hispanic/Latino subjects than for white subjects, a difference of 18.8 percentage points and 21.8 percentage points, respectively; these differences are not statistically significant.
- Drug discovery rates are higher for Black subjects than for white stop subjects and lower for Hispanic/Latino subjects than for white subjects, a difference of 5.1 percentage points and -1.8 percentage points, respectively; 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 44 percent Black residents, 35 percent white residents, 11 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 rates relative to crime rates in all majority-Black districts are higher than the ratio of traffic stop rates relative to crime rates in District 1 and lower than in District 6. Ratios of field interview rates relative to crime rates in two majority-Black districts (Districts 5 and 7) are higher than the ratios of field interview rates relative to crime rates in both majority-white districts; the ratio of those same encounters relative to crime rates in District 4 is lower than the ratio relative to crime rates in District 6. The ratio of no-action encounter rates relative to crime rates in all-majority Black districts are higher than the ratio of no-action encounter rates relative to crime rates in District 6; ratios of no-action encounter rates relative to crime rates in Districts 5 and 7 are also higher than the ratio in District 1. However, ratios of no-action encounters relative to crime rates in District 4 are lower than the ratio in District 1. Average comparisons show the ratio of frisk rates to crime rates in all majority-Black districts is 181 percent higher than the ratio of frisk rates to crime rates in both 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 the ratios of these same encounters to crime rates in both majority white districts. The ratio of the traffic stop rate relative to crime rate in District 2 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. Average comparisons show the ratio of frisk rates to crime rates in District 2 is 163 percent higher than the ratio of frisk rates to crime rates in white districts.<sup>43</sup> Overall, results suggest that, when accounting for relative crime rates, frisks are conducted more often in Black and Hispanic/Latino neighborhoods than in white neighborhoods.

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<sup>43</sup> District 3 is 44% Black residents, 35% white residents, 9% Hispanic/Latino residents, and 11% residents of other races and thus has no clear majority racial or ethnic group. Average comparisons show the ratios of encounters to crime rates for District 3 compared to white districts are: -34% (traffic stops), 126% (field interviews), 400% (no-action encounters), and 181% (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 2023 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 Sixth 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. In addition, more detailed analysis of the context of police encounters by specific officers, units, and reasons for stops provides more information about possible drivers for disparities that could be weighed and considered during command-level discussions of police stops and stop outcomes.

## Summary of Findings

The stop rate analysis indicates, after controlling for known predictors, that Black residents are subjected to traffic stops and field interviews at significantly higher rates than white residents. Black residents of typical driving age are 4.2 times more likely to get stopped than white residents of typical driving age and 12.1 times more likely to be subjected to a field interview than white residents of Milwaukee. These results are statistically significant. However, the stop rate analysis for 2023 indicates that there are no significant racial disparities in no-action encounters.

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 almost 21 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 2.5 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 4.2 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 56 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. However, the difference is not statistically significant.

Hit rates for contraband discovery were 24 percent overall, with the probability of discovering contraband during a frisk higher for Black and Hispanic/Latino frisk subjects than for white frisk subjects but not statistically significant. Exploration of contraband hit rates by race or ethnicity specifically for weapons and drugs 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, using the methodology required by the Settlement Agreement, we find racial and ethnic disparities in traffic stops, field interviews, 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 2023 with the exception of documentation of IOARS for frisks with Hispanic/Latino stop subjects. Documentation of IOARS for frisks in 2023 was notably higher than for previous years for white stop subjects.

These results represent a fifth year of analysis of police encounters in Milwaukee. Stop rate disparities for traffic stops, field interviews, and disparity in the likelihood of a frisk, controlling for known predictors, have been found for all five years when comparing the experiences of Black and white individuals encountered by police. Current findings from police encounters in 2023 indicate no racial disparities in no-action encounters; current findings also do not indicate disparities in whether and how police interact with Hispanic/Latino residents and white residents of Milwaukee. While these findings show some improvements to equity in police actions, work remains to understand and reduce racial disparities in police interactions with community members in Milwaukee.

## Contributors

**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 and racial disparities; instructed courses in youth justice, corrections, and social inequality; and connected undergraduates with professionals in the field. Erica also led a collaborative effort to implement and evaluate community-based trainings in mental health and adverse childhood experiences (ACEs) in rural Tennessee, has previously worked on bail reform evaluation in Norfolk, Virginia, and her work has been published in peer-reviewed journals including *American Journal of Criminal Justice* and *The Social Science Journal*. Erica leads the quantitative data analysis for CJI's policing and youth justice portfolios, contributing to several projects aimed at improving these systems. Erica is committed to advancing the field by using data-driven solutions to address critical issues in adult and youth justice. Erica holds a Ph.D. in Criminology and Criminal Justice from Old Dominion University.

**Katie Zafft** coordinates CJI's 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 evaluation 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.



## 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 15, 2023	9,220	8,269	344	601	6
Quarter 2 April – June	August 15, 2023	8,009	7,234	305	456	14
Quarter 3 July – Sept.	November 15, 2023	6,965	6,196	288	465	16
Quarter 4 Oct. – Dec.	February 15, 2024	7,827	7,101	305	415	6
<b>Total</b>		<b>32,021</b>	<b>28,800</b>	<b>1,242</b>	<b>1,937</b>	<b>42</b>

**Notes:**

<sup>1</sup>MPD 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.

<sup>2</sup>CAD 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.

<sup>3</sup>Revised Tracs\_ContactSummary\_Individual and Tracs\_Individual files for quarter 4 were delivered April 19, 2024 to account for contact summaries missing individual information resulting from the TraCS system update.

<sup>4</sup>Revised Tracs\_ContactSummary\_Individual and Tracs\_Individual files for quarter 4 were delivered May 14, 2024 to correct a file structural error in the revised files submitted on April 19, 2024 preventing the unique identification of multiple individuals involved in a single stop. The revised files included “IndividualColKey”, the system-generated unique key for each individual on a contact summary form.

**Source:**

Milwaukee Police Department Stop Data, 2023

## A-2: Data Loss by Quarter and Encounter Type

Quarter	CAD only	AIM only
Quarter 1	164	13
Quarter 2	169	10
Quarter 3	129	5
Quarter 4	143	4
<b>Total</b>	<b>605</b>	<b>32</b>

Notes:

<sup>1</sup>Encounters 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.

<sup>2</sup>Encounters 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, 2023

### A-3: Encounters by Type and District

District	Traffic Stops	Field Interviews	No-Action Encounters	Citation or Warning Only	Totals	Percent by District
1	670	38	3	34	745	2.5%
2	5,639	206	12	146	6,003	20.2%
3	3,439	249	6	90	3,784	12.7%
4	4,057	162	1	117	4,337	14.6%
5	3,458	264	6	119	3,847	13.0%
6	4,751	87	0	77	4,915	16.6%
7	4,453	259	4	108	4,824	16.2%
NULL	914	11	0	321	1,246	4.2%
Missing	0	0	0	0	0	0.0%
<b>Total</b>	<b>27,381</b>	<b>1,276</b>	<b>32</b>	<b>1,012</b>	<b>29,701</b>	<b>100.0%</b>

**Notes:**

<sup>1</sup>The “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.

<sup>2</sup>According 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.

<sup>3</sup>Missing 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, 2023

#### 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	7,767	397	6	47	1%	6%	17%	4%
Q2	6,977	298	9	59	2%	7%	100%	7%
Q3	5,889	314	11	67	5%	5%	0%	4%
Q4	6,747	267	6	44	5%	7%	0%	7%
<b>Total</b>	<b>27,380</b>	<b>1,276</b>	<b>32</b>	<b>217</b>	<b>3%</b>	<b>6%</b>	<b>31%</b>	<b>6%</b>

**Notes:**

<sup>1</sup>Each observation in the data represents a single encounter with police.

<sup>2</sup>For 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.

<sup>3</sup>For 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.

<sup>4</sup>Encounters 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.

<sup>5</sup>Frisks are a subset of traffic stops or field interviews.

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

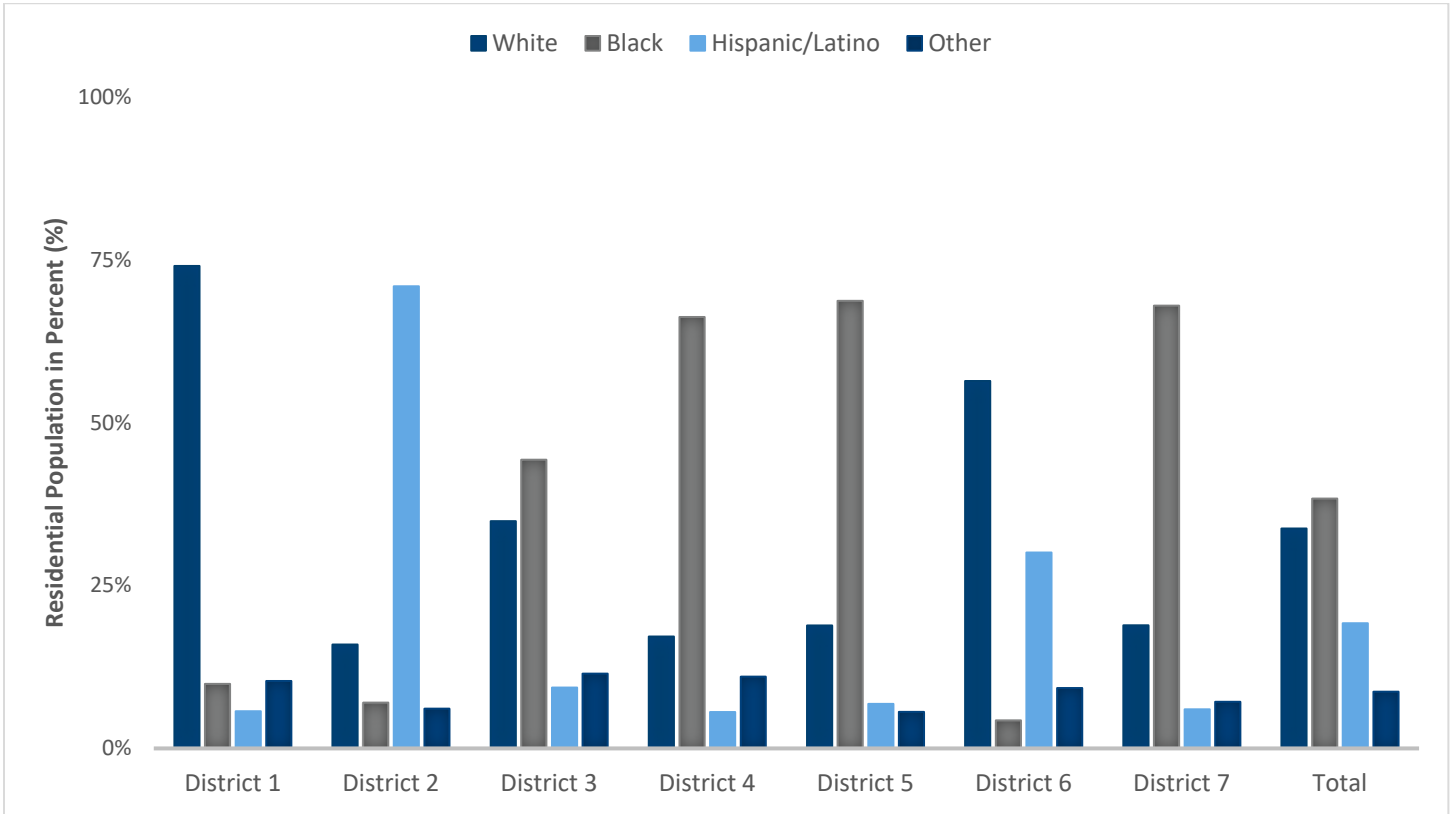
<sup>7</sup>One traffic stop is missing an encounter date and has an error in the CAD number that prevented associating it with a quarter. This traffic stop is missing demographic and/or location data; however, calculating that stop into any quarter’s share of stops missing demographic and/or location data does not change the percentage results.

<sup>8</sup>Of the 1,012 citations or warnings that lack corresponding TraCS or RMS information, 36% 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, 2023

### A-5: Population Race and Ethnic Composition by District



**Source:**  
U.S. Census American Community Survey 5-Year Estimates, 2018-2022

## Appendix B: Stop Rate Analysis Tables

**B-1: Traffic Stops per 1,000 Residents of Typical Driving Age by Race, Ethnicity, and District**

District	1	2	3	4	5	6	7	All
Traffic Stops per 1,000 Residents	15	101	62	62	82	55	62	63
Traffic Stops per 1,000 Black Residents	65	520	105	79	101	277	82	104
Traffic Stops per 1,000 Hispanic/Latino Residents	32	59	51	40	38	67	29	57
Traffic Stops per 1,000 White Residents	8	123	27	37	47	35	19	32
Traffic Stops per 1,000 Residents of Other Races	6	43	11	10	16	35	9	18
Percentage of Black Residents of Typical Driving Age	10%	7%	44%	66%	69%	4%	68%	37%
Percentage of Hispanic/Latino Residents of Typical Driving Age	6%	71%	9%	6%	7%	30%	6%	20%
Percentage of White Residents of Typical Driving Age	74%	16%	35%	17%	19%	56%	19%	34%
Percentage of Residents of Other Races of Typical Driving Age	10%	6%	11%	11%	6%	9%	7%	9%

**Notes:**

<sup>1</sup>The 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 1,000, 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.

<sup>2</sup>Other 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.

<sup>3</sup>Totals exclude 872 traffic stops that lack location information and 78 traffic stops with missing race or ethnicity information.

**Sources:**

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

## 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 1,000 Residents	0.7	2.5	3.3	1.7	4.4	0.7	2.5	2.1
Field Interviews per 1,000 Black Residents	5.5	21.3	6.9	2.4	6.1	7.4	3.5	4.7
Field Interviews per 1,000 Hispanic/Latino Residents	1.4	0.9	0.7	0.2	1.0	0.6	0.5	0.7
Field Interviews per 1,000 White Residents	0.2	2.0	0.5	0.3	0.5	0.4	0.4	0.5
Field Interviews per 1,000 Residents of Other Races	0.0	1.0	0.5	0.1	1.5	0.2	0.4	0.4
Percentage of Black Residents	10%	7%	44%	66%	69%	4%	68%	38%
Percentage of Hispanic/Latino Residents	6%	71%	9%	6%	7%	30%	6%	19%
Percentage of White Residents	74%	16%	35%	17%	19%	56%	19%	34%
Percentage of Residents of Other Races	10%	6%	11%	11%	6%	9%	7%	9%

### Notes:

<sup>1</sup>The 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.

<sup>2</sup>Other 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.

<sup>3</sup>Totals exclude 11 field interviews that lacked location information and 44 field interviews with missing race or ethnicity information.

### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

### 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 1,000 Residents	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.04
No-Action Encounters per 1,000 Black Residents	0.2	0.9	0.1	0.0	0.1	0.0	0.0	0.08
No-Action Encounters per 1,000 Hispanic/Latino Residents	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02
No-Action Encounters per 1,000 White Residents	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.02
No-Action Encounters per 1,000 Residents of Other Races	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
Percentage of Black Residents	10%	7%	44%	66%	69%	4%	68%	38%
Percentage of Hispanic/Latino Residents	6%	71%	9%	6%	7%	30%	6%	19%
Percentage of White Residents	74%	16%	35%	17%	19%	56%	19%	34%
Percentage of Residents of Other Races	10%	6%	11%	11%	6%	9%	7%	9%

**Notes:**

<sup>1</sup>The 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.

<sup>2</sup>Other 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.

<sup>3</sup>Totals exclude ten no-action encounters with missing race or ethnicity information.

**Sources:**

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022



#### 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	0.2	0.3	0.5	0.3	0.7	0.1	0.6	0.4
Frisks per 1,000 Black Residents	1.6	2.1	0.9	0.4	0.9	0.8	0.9	0.8
Frisks per 1,000 Hispanic/Latino Residents	0.7	0.2	0.1	0.2	0.3	0.0	0.3	0.2
Frisks per 1,000 White Residents	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.1
Frisks per 1,000 Residents of Other Races	0.0	0.0	0.4	0.0	0.6	0.0	0.1	0.1
Percentage of Black Residents	10%	7%	44%	66%	69%	4%	68%	38%
Percentage of Hispanic/Latino Residents	6%	71%	9%	6%	7%	30%	6%	19%
Percentage of White Residents	74%	16%	35%	17%	19%	56%	19%	34%
Percentage of Residents of Other Races	10%	6%	11%	11%	6%	9%	7%	9%

**Notes:**

<sup>1</sup>The 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.

<sup>2</sup>Other 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.

<sup>3</sup>Totals exclude three frisks that lacked location information.

**Sources:**

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

**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
<b>Ratio of Stop Rate for Black Drivers/Residents to Stop Rate for White Drivers/Residents</b>	3.3	9.4	4.0	8.0
<b>Ratio of Stop Rate for Hispanic/Latino Drivers/Residents to Stop Rate for White Drivers/Residents</b>	1.8	1.4	1.0	1.8
<b>Ratio of Stop Rate for Drivers/Residents of Other Races to Stop Rate for White Drivers/Residents</b>	0.6	0.8	0.0	0.6

**Notes:**

<sup>1</sup>The 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 1,000 Black residents (16-80 years old) divided by the number of traffic stops per 1,000 white residents (16-80 years old). The same calculation is performed for the other encounter types and other race or ethnic categories.

<sup>2</sup>The 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, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

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

	Mean	Standard Deviation	Minimum	Maximum	Observations
<b>Traffic Stop Rate</b>	4.40	7.60	0.00	81.75	448
<b>Black</b>	0.25	0.43	0.00	1.00	448
<b>Hispanic/Latino</b>	0.25	0.43	0.00	1.00	448
<b>Other Race</b>	0.25	0.43	0.00	1.00	448
<b>Male</b>	0.50	0.50	0.00	1.00	448
<b>Young</b>	0.50	0.50	0.00	1.00	448
<b>Black Share of District</b>	0.38	0.28	0.04	0.69	448
<b>Hispanic/Latino Share of District</b>	0.19	0.23	0.06	0.71	448
<b>Other Race Share of District</b>	0.09	0.02	0.06	0.11	448
<b>White Share of District</b>	0.34	0.21	0.16	0.74	448
<b>Young Share of District</b>	0.31	0.11	0.24	0.57	448
<b>Male Share of District</b>	0.49	0.02	0.46	0.53	448
<b>Unemployment Rate in District</b>	6.23	1.80	3.10	8.40	448
<b>Lagged Total Crime Rate in District</b>	0.10	0.04	0.04	0.16	448
<b>Lagged Violent Crime Rate in District</b>	0.03	0.01	0.01	0.05	448
<b>Lagged Property Crime Rate in District</b>	0.05	0.03	0.03	0.11	448

### Notes:

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

<sup>2</sup>The 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 2023. 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, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part I and Part II Crime Data, 2022

## B-7: Traffic Stop Rate Estimation Results

Dependent Variable: Traffic Stops per 1,000 Residents of Driving Age	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<b>Black</b>	8.341** (3.192)	8.341** (3.195)	8.341** (3.199)	8.341** (3.210)	8.341** (3.214)	8.341** (3.217)	8.341** (3.221)
<b>Hispanic/Latino</b>	0.188 (0.775)	0.188 (0.776)	0.188 (0.777)	0.188 (0.780)	0.188 (0.781)	0.188 (0.782)	0.188 (0.782)
<b>Other Race</b>	-1.482* (0.650)	-1.482* (0.651)	-1.482* (0.652)	-1.482* (0.654)	-1.482* (0.655)	-1.482* (0.655)	-1.482* (0.656)
<b>Male</b>		2.669** (1.084)	2.669** (1.086)	2.669** (1.089)	2.669* (1.091)	2.669* (1.092)	2.669* (1.093)
<b>Young</b>			2.057* (0.849)	2.057* (0.852)	2.057* (0.853)	2.057* (0.854)	2.057* (0.855)
<b>Black Share of District</b>				0.630 (0.940)	-0.878*** (0.216)	-2.003** (0.632)	-14.40*** (0)
<b>Hispanic/Latino Share of District</b>				14.87*** (1.093)	13.08*** (0.569)	13.73*** (0.426)	6.234*** (0)
<b>Other Share of District</b>				-0.0957 (6.854)	-0.855 (7.172)	-7.070 (8.815)	-1.931*** (0)
<b>Young Share of District</b>					-4.023*** (0.447)	-0.909 (1.524)	-14.48*** (0)
<b>Male Share of District</b>						-25.85* (11.88)	7.286*** (5.04e-11)
<b>District Unemployment Rate</b>							1.492*** (0)
<b>Constant</b>	2.637** (0.900)	1.302** (0.403)	0.274 (0.274)	-2.815 (1.601)	-0.574 (1.670)	11.93 (6.354)	-3.576* (1.484)
<b>Observations</b>	448	448	448	448	448	448	448
<b>R-squared</b>	0.258	0.289	0.307	0.491	0.493	0.493	0.494

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

### Notes:

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

<sup>2</sup>The dependent variable is the total number of traffic stops per 1,000 residents of typical driving age (16-80 years old) by race or ethnicity, age, gender, district, and quarter of the year.

<sup>3</sup>Each variable's coefficient measures its relationship with the stop rate per 1,000 residents of driving age.

<sup>4</sup>Other 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.

<sup>5</sup>Regression 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.

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

<sup>7</sup>Standard errors are robust and clustered by MPD district.

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

### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

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

	Mean	Standard Deviation	Minimum	Maximum	Observations
<b>Field Interview Rate</b>	0.58	1.56	0.00	13.75	112
<b>Black</b>	0.25	0.43	0.00	1.00	112
<b>Hispanic/Latino</b>	0.25	0.43	0.00	1.00	112
<b>Other Race</b>	0.25	0.43	0.00	1.00	112
<b>Male</b>	0.50	0.50	0.00	1.00	112
<b>Young</b>	0.50	0.50	0.00	1.00	112
<b>Black Share of District</b>	0.38	0.28	0.04	0.69	112
<b>Hispanic/Latino Share of District</b>	0.19	0.23	0.06	0.71	112
<b>Other Race Share of District</b>	0.09	0.02	0.06	0.11	112
<b>White Share of District</b>	0.34	0.21	0.16	0.74	112
<b>Young Share of District</b>	0.31	0.11	0.24	0.57	112
<b>Male Share of District</b>	0.49	0.02	0.46	0.53	112
<b>Unemployment Rate in District</b>	6.23	1.81	3.10	8.40	112
<b>Lagged Total Crime Rate in District</b>	0.10	0.04	0.04	0.16	112
<b>Lagged Violent Crime Rate in District</b>	0.03	0.01	0.01	0.05	112
<b>Lagged Property Crime Rate in District</b>	0.05	0.03	0.03	0.11	112

### Notes:

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

<sup>2</sup>The 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 2023. 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, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part I and Part II Crime Data, 2022

## 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	1.702** (0.535)	1.702** (0.538)	1.702** (0.540)	1.702** (0.548)	1.702** (0.551)	1.702** (0.553)	1.702** (0.556)
Hispanic/Latino	0.0342 (0.0694)	0.0342 (0.0697)	0.0342 (0.0700)	0.0342 (0.0710)	0.0342 (0.0714)	0.0342 (0.0717)	0.0342 (0.0721)
Other Race	-0.0193 (0.0561)	-0.0193 (0.0564)	-0.0193 (0.0567)	-0.0193 (0.0575)	-0.0193 (0.0578)	-0.0193 (0.0581)	-0.0193 (0.0584)
Male		0.829** (0.249)	0.829** (0.250)	0.829** (0.253)	0.829** (0.255)	0.829** (0.256)	0.829** (0.257)
Young			0.626** (0.169)	0.626** (0.172)	0.626** (0.172)	0.626** (0.173)	0.626** (0.174)
Black Share of District				-0.0445 (0.319)	0.552** (0.155)	-0.319** (0.114)	-2.480*** (0)
Hispanic/Latino Share of District				1.551*** (0.326)	2.260*** (0.200)	2.767*** (0.0770)	1.459*** (0)
Other Share of District				-2.999 (3.212)	-2.699 (2.520)	-7.506*** (1.593)	-6.610*** (0)
Young Share of District					1.590*** (0.212)	3.999*** (0.275)	1.632*** (0)
Male Share of District						-19.99*** (2.147)	-14.21*** (0)
District Unemployment Rate							0.260*** (0)
Constant	0.153** (0.0616)	-0.262*** (0.0695)	-0.575*** (0.150)	-0.594 (0.568)	-1.480** (0.460)	8.193*** (1.071)	5.489*** (0.332)
Observations	112	112	112	112	112	112	112
R-squared	0.223	0.294	0.334	0.398	0.403	0.405	0.406

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

### Notes:

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

<sup>2</sup>The dependent variable is the total number of field interviews per 1,000 residents by race or ethnicity, age, gender, and district.

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

<sup>4</sup>Other 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.

<sup>5</sup>Regression 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.

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

<sup>7</sup>Standard errors are robust and clustered by MPD district.

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

### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part I and Part II Crime Data, 2022

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

	Mean	Standard Deviation	Minimum	Maximum	Observations
<b>No-Action Encounter Rate</b>	0.03	0.10	0.00	0.71	56
<b>Black</b>	0.25	0.44	0.00	1.00	56
<b>Hispanic/Latino</b>	0.25	0.44	0.00	1.00	56
<b>Other Race</b>	0.25	0.44	0.00	1.00	56
<b>Male</b>	0.50	0.50	0.00	1.00	56
<b>Black Share of District</b>	0.38	0.28	0.04	0.69	56
<b>Hispanic/Latino Share of District</b>	0.19	0.23	0.06	0.71	56
<b>Other Race Share of District</b>	0.09	0.02	0.06	0.11	56
<b>White Share of District</b>	0.34	0.21	0.16	0.74	56
<b>Young Share of District</b>	0.31	0.11	0.24	0.57	56
<b>Male Share of District</b>	0.49	0.02	0.46	0.53	56
<b>Unemployment Rate in District</b>	6.23	1.82	3.10	8.40	56
<b>Lagged Total Crime Rate in District</b>	0.10	0.04	0.04	0.16	56
<b>Lagged Violent Crime Rate in District</b>	0.03	0.01	0.01	0.05	56
<b>Lagged Property Crime Rate in District</b>	0.05	0.03	0.03	0.11	56

### Notes:

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

<sup>2</sup>The 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 2023. By construction, the race or ethnicity indicator variables have a mean of one quarter and the gender variable has a mean of one-half.

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

### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

## 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
<b>Black</b>	0.0792 (0.0517)	0.0792 (0.0522)	0.0792 (0.0539)	0.0792 (0.0544)	0.0792 (0.0550)	0.0792 (0.0556)
<b>Hispanic/Latino</b>	-0.0152 (0.0102)	-0.0152 (0.0103)	-0.0152 (0.0107)	-0.0152 (0.0108)	-0.0152 (0.0109)	-0.0152 (0.0110)
<b>Other Race</b>	-0.0177 (0.0123)	-0.0177 (0.0125)	-0.0177 (0.0128)	-0.0177 (0.0130)	-0.0177 (0.0131)	-0.0177 (0.0133)
<b>Male</b>		0.0458 (0.0248)	0.0458 (0.0255)	0.0458 (0.0258)	0.0458 (0.0261)	0.0458 (0.0264)
<b>Black Share of District</b>			0.0147 (0.0587)	0.118*** (0.00176)	0.123*** (0.00386)	0.0531*** (0)
<b>Hispanic/Latino Share of District</b>			0.176** (0.0616)	0.298*** (0.00329)	0.295*** (0.00260)	0.252*** (0)
<b>Other Share of District</b>			-0.189 (0.186)	-0.137** (0.0428)	-0.108* (0.0538)	-0.0786*** (0)
<b>Young Share of District</b>				0.275*** (0.00208)	0.260*** (0.00930)	0.183*** (0)
<b>Male Share of District</b>					0.122 (0.0725)	0.310*** (0)
<b>District Unemployment Rate</b>						0.00843*** (0)
<b>Constant</b>	0.0177 (0.0123)	-0.00519 (0.00622)	-0.0281 (0.0546)	-0.181*** (0.0226)	-0.240*** (0.0437)	-0.328*** (0.0225)
<b>Observations</b>	56	56	56	56	56	56
<b>R-squared</b>	0.148	0.198	0.344	0.383	0.383	0.383

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

### Notes:

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

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

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

<sup>4</sup>Other 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.

<sup>5</sup>Regression 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.

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

<sup>7</sup>Standard errors are robust and clustered by MPD district.

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

### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022



## B-12: Summary of Variables in Frisk Rate Analysis

	Mean	Standard Deviation	Minimum	Maximum	Observations
<b>Frisk Rate</b>	0.51	1.31	0.00	7.67	112
<b>Black</b>	0.25	0.43	0.00	1.00	112
<b>Hispanic/Latino</b>	0.25	0.43	0.00	1.00	112
<b>Other Race</b>	0.25	0.43	0.00	1.00	112
<b>Male</b>	0.50	0.50	0.00	1.00	112
<b>Young</b>	0.50	0.50	0.00	1.00	112
<b>Black Share of District</b>	0.38	0.28	0.04	0.69	112
<b>Hispanic/Latino Share of District</b>	0.19	0.23	0.06	0.71	112
<b>Other Race Share of District</b>	0.09	0.02	0.06	0.11	112
<b>White Share of District</b>	0.34	0.21	0.16	0.74	112
<b>Young Share of District</b>	0.31	0.11	0.24	0.57	112
<b>Male Share of District</b>	0.49	0.02	0.46	0.53	112
<b>Unemployment Rate in District</b>	6.23	1.81	3.10	8.40	112
<b>Lagged Total Crime Rate in District</b>	0.10	0.04	0.04	0.16	112
<b>Lagged Violent Crime Rate in District</b>	0.03	0.01	0.01	0.05	112
<b>Lagged Property Crime Rate in District</b>	0.05	0.03	0.03	0.11	112

### Notes:

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

<sup>2</sup>The 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 2023. 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, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

### 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
<b>Black</b>	1.629*** (0.437)	1.629*** (0.439)	1.629** (0.441)	1.629** (0.447)	1.629** (0.449)	1.629** (0.452)	1.629** (0.454)
<b>Hispanic/Latino</b>	0.122 (0.105)	0.122 (0.105)	0.122 (0.106)	0.122 (0.107)	0.122 (0.108)	0.122 (0.108)	0.122 (0.109)
<b>Other Race</b>	-0.0277 (0.0421)	-0.0277 (0.0422)	-0.0277 (0.0424)	-0.0277 (0.0431)	-0.0277 (0.0433)	-0.0277 (0.0435)	-0.0277 (0.0437)
<b>Male</b>		0.839*** (0.187)	0.839*** (0.188)	0.839*** (0.191)	0.839*** (0.191)	0.839*** (0.192)	0.839*** (0.193)
<b>Young</b>			0.359** (0.130)	0.359** (0.132)	0.359** (0.133)	0.359** (0.133)	0.359** (0.134)
<b>Black Share of District</b>				-0.190 (0.487)	0.646*** (0.134)	0.129 (0.224)	4.363*** (0)
<b>Hispanic/Latino Share of District</b>				-1.039* (0.507)	-0.0455 (0.207)	0.256 (0.151)	2.818*** (0)
<b>Other Share of District</b>				-4.229 (3.378)	-3.809 (2.710)	-6.662* (3.122)	-8.418*** (0)
<b>Young Share of District</b>					2.228*** (0.142)	3.658*** (0.540)	8.296*** (0)
<b>Male Share of District</b>						-11.86** (4.207)	-23.18*** (0)
<b>District Unemployment Rate</b>							-0.510*** (0)
<b>Constant</b>	0.0820 (0.0433)	-0.337** (0.116)	-0.517** (0.144)	0.124 (0.430)	-1.118** (0.363)	4.622* (2.244)	9.921*** (0.254)
<b>Observations</b>	112	112	112	112	112	112	112
<b>R-squared</b>	0.283	0.387	0.406	0.424	0.440	0.441	0.446

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

#### Notes:

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

<sup>2</sup>The dependent variable is the total number of frisks per 1,000 residents by race or ethnicity, gender, age, and district.

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

<sup>4</sup>Other 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.

<sup>5</sup>Regression 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.

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

<sup>7</sup>Standard errors are robust and clustered by MPD district.

<sup>8</sup>In Model 1, the constant provides an estimate of the white frisk rate.

#### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

### 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	17,715	182	1.0%	0.1%	15.7%
Hispanic/Latino	5,140	18	0.4%	0.0%	18.8%
Other Race	727	6	0.8%	0.0%	30.0%
White	4,975	11	0.2%	0.1%	9.0%
Total	28,557	217	0.8%	0.1%	15.7%

**Notes:**

<sup>1</sup>The frisk rates presented in this table excludes 132 encounters categorized as a traffic stop, field interview, or no-action encounter where race and ethnicity information were missing.

<sup>2</sup>There were zero frisks documented in the excluded encounters.

<sup>3</sup>This table excludes 1,012 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.

<sup>4</sup>There were zero frisks documented during no-action encounters.

**Source:**

Milwaukee Police Department Stop Data, 2023

### 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	4.432*** (1.725 - 11.39)	4.037*** (1.573 - 10.36)	2.534* (0.931 - 6.899)
Hispanic/Latino	1.579 (0.663 - 3.761)	1.457 (0.595 - 3.564)	1.804 (0.625 - 5.204)
Male		4.534*** (2.742 - 7.497)	4.329*** (2.237 - 8.378)
Young		1.280 (0.725 - 2.262)	1.187 (0.750 - 1.878)
Time of Day Fixed Effects			X
Quarter Fixed Effects			X
District Fixed Effects			X
Constant	0.0023*** (0.0010 - 0.0054)	0.0006*** (0.0002 - 0.0016)	0.0014*** (0.0007 - 0.0029)
Observations	27,606	27,558	24,882

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

**Notes:**

<sup>1</sup>Each observation represents an encounter with police.

**Source:**

Milwaukee Police Department Stop Data, 2023

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

Race/Ethnicity	District	Predicted Probability	95% Confidence Interval	
Black	District 1	1.83%	0.017	0.020
Hispanic/Latino	District 1	2.73%	0.025	0.030
White	District 1	-	-	-
Black	District 2	0.43%	0.004	0.005
Hispanic/Latino	District 2	0.27%	0.003	0.003
White	District 2	0.45%	0.004	0.005
Black	District 3	0.90%	0.009	0.009
Hispanic/Latino	District 3	0.38%	0.004	0.004
White	District 3	0.55%	0.005	0.006
Black	District 4	0.54%	0.005	0.006
Hispanic/Latino	District 4	-	-	-
White	District 4	-	-	-
Black	District 5	0.72%	0.007	0.007
Hispanic/Latino	District 5	0.94%	0.009	0.010
White	District 5	-	-	-
Black	District 6	0.43%	0.004	0.005
Hispanic/Latino	District 6	0.06%	0.001	0.001
White	District 6	0.13%	0.001	0.001
Black	District 7	1.09%	0.011	0.011
Hispanic/Latino	District 7	1.67%	0.015	0.018
White	District 7	-	-	-

**Notes:**

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

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

<sup>3</sup>There were no documented frisks with white subjects in Districts 1, 4, 5, and 7 or with Hispanic/Latino subjects in District 4.

**Source:**

Milwaukee Police Department Stop Data, 2023

## B-17: Police Stop Disparities, 2019 - 2023

Race/Ethnicity Compared to White Residents/Stop Subjects	2019	2020	2021	2022	2023
<b>Traffic Stop Disparities</b>					
Black (Licensed Driver Benchmark)	8.4***	9.5***	N/A	N/A	N/A
Black (Census Population Benchmark)	3.81**	4.44**	4.8*	4.5*	4.2**
Hispanic/Latino (Licensed Driver Benchmark)	2.4***	2.9***	N/A	N/A	N/A
Hispanic/Latino (Census Population Benchmark)	not sig	not sig	not sig	not sig	not sig
Other Race (Licensed Driver Benchmark)	not sig	not sig	N/A	N/A	N/A
Other Race (Census Population Benchmark)	0.55**	0.58**	0.60**	0.53**	0.56*
<b>Field Interview Disparities</b>					
Black	5.16**	5.71**	9.3**	10.1**	12.1**
Hispanic/Latino	not sig	not sig	not sig	not sig	not sig
Other Race	not sig	not sig	not sig	not sig	not sig
<b>No-Action Encounter Disparities</b>					
Black	not sig	8.36*	7.5**	4.1*	not sig
Hispanic/Latino	not sig	2.13*	not sig	not sig	not sig
Other Race	not sig	not sig	2.35***	not sig	not sig
<b>Frisk Disparities (Among Residents)</b>					
Black	7.85**	9.97**	17.96*	8.04***	20.9**
Hispanic/Latino	not sig	not sig	not sig	not sig	not sig
Other Race	-4.98**	-12.31**	-23.31*	not sig	not sig
<b>Frisk Disparities (Among Stop Subjects)</b>					
Black	2.0***	2.3***	3.1***	2.6***	2.5*
Hispanic/Latino	1.3*	1.6***	2.4***	not sig	not sig
Other Race	N/A	N/A	N/A	N/A	N/A

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

### Notes:

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

<sup>2</sup>Frisk 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.cjainstitute.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
<b>Black</b>	157	96%	163	94%	176	91%	152	97%
<b>Hispanic/Latino</b>	34	91%	31	87%	26	96%	35	94%
<b>Other Race</b>	7	86%	4	100%	3	100%	7	100%
<b>White</b>	29	90%	23	91%	30	93%	31	87%
<b>Unknown/NULL</b>	0	N/A	0	N/A	0	N/A	1	100%
<b>Missing Race</b>	3	0%	12	0%	2	0%	8	50%
<b>Total</b>	230	93%	233	88%	237	92%	234	94%

**Notes:**

<sup>1</sup>Other race refers to individuals from the following race categories: Native American or Alaskan Native, Asian, and Native Hawaiian or other Pacific Islander. Unknown/NULL refers to documentation of an individual's race as unclear (i.e., not known); this differs from Missing Race which indicates that an individual's race was not documented.

<sup>2</sup>IOARS determinations as made in CJJ's semiannual reviews.

**Source:**

Milwaukee Police Department Stop Data, 2023

## 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	41	71%	50	68%	57	79%	34	59%
Hispanic/Latino	4	50%	6	67%	4	50%	4	75%
Other Race	1	100%	1	100%	1	0%	2	50%
White	1	0%	2	100%	5	40%	3	100%
Missing Race	N/A	N/A	N/A	N/A	N/A	N/A	1	0%
<b>Total</b>	<b>47</b>	<b>68%</b>	<b>59</b>	<b>69%</b>	<b>67</b>	<b>73%</b>	<b>44</b>	<b>61%</b>

### Notes:

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

<sup>2</sup>IOARS determinations as made in CJI's semiannual reviews.

### Source:

Milwaukee Police Department Stop Data, 2023



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

District	Q1 Stops	Q1 IOARS	Q2 Stops	Q2 IOARS	Q3 Stops	Q3 IOARS	Q4 Stops	Q4 IOARS	2023 Stops	2023 IOARS
1	6	83%	13	54%	3	67%	5	100%	27	70%
2	49	96%	40	85%	39	87%	50	88%	178	89%
3	24	88%	33	82%	53	94%	40	90%	150	89%
4	36	97%	33	97%	33	91%	24	100%	126	96%
5	36	94%	43	95%	31	97%	30	100%	140	96%
6	22	82%	27	85%	22	100%	27	93%	98	90%
7	54	93%	43	95%	41	93%	35	100%	173	95%
NULL	3	100%	1	100%	15	73%	23	87%	42	83%
<b>Total</b>	<b>230</b>	<b>93%</b>	<b>233</b>	<b>88%</b>	<b>237</b>	<b>92%</b>	<b>234</b>	<b>94%</b>	<b>934</b>	<b>92%</b>

**Notes:**

<sup>1</sup>IOARS determinations as made in CJI’s semiannual reviews.

<sup>2</sup>According to the extraction data dictionaries, “NULL” refers to locations of encounters that fall outside of district boundaries or special circumstance stops.

**Source:**

Milwaukee Police Department Stop Data, 2023

#### 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	2023 Frisks	2023 IOARS
1	2	50%	6	67%	1	100%	1	0%	10	60%
2	4	50%	6	83%	8	75%	9	89%	27	78%
3	4	50%	11	73%	17	71%	6	67%	38	68%
4	10	70%	4	75%	10	80%	5	60%	29	72%
5	12	83%	11	73%	7	100%	9	56%	39	77%
6	0	N/A	6	67%	1	0%	0	N/A	7	57%
7	15	67%	15	60%	21	62%	13	54%	64	61%
NULL	0	N/A	0	N/A	2	100%	1	0%	3	67%
<b>Total</b>	47	68%	59	69%	67	73%	44	61%	217	69%

**Notes:**

<sup>1</sup>IOARS determinations as made in CJI’s semiannual reviews.

<sup>2</sup>According to the extraction data dictionaries, “NULL” refers to locations of encounters that fall outside of district boundaries or special circumstance stops.

**Source:**

Milwaukee Police Department Stop Data, 2023

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

	Mean	Standard Deviation	Minimum	Maximum	Observations
<b>IOARS Stop Rate</b>	0.92	0.27	0.00	1.00	892
<b>Black</b>	0.74	0.44	0.00	1.00	852
<b>Hispanic/Latino</b>	0.14	0.35	0.00	1.00	852
<b>Male</b>	0.76	0.43	0.00	1.00	872
<b>Young</b>	0.69	0.46	0.00	1.00	839
<b>Black Share of District</b>	0.43	0.28	0.04	0.69	892
<b>Hispanic/Latino Share of District</b>	0.22	0.25	0.06	0.71	892
<b>White Share of District</b>	0.27	0.15	0.16	0.74	892
<b>Male Share of District</b>	0.48	0.02	0.46	0.53	892
<b>Young Share of District</b>	0.28	0.07	0.24	0.57	892
<b>Unemployment Rate in District</b>	6.56	1.66	3.10	8.40	892
<b>Lagged Total Crime Rate in District</b>	0.10	0.03	0.04	0.16	892
<b>Lagged Violent Crime Rate in District</b>	0.03	0.01	0.01	0.05	892
<b>Lagged Property Crime Rate in District</b>	0.04	0.01	0.03	0.11	892

**Notes:**

<sup>1</sup>IOARS determinations as made in CJJ's semiannual reviews.

**Sources:**

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part 1 and Part 2 Crime Data, 2022

## 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	1.957** (1.053 - 3.637)	1.972** (1.055 - 3.687)	2.583*** (1.270 - 5.252)	1.375 (0.804 - 2.351)	1.396 (0.813 - 2.398)	1.363 (0.796 - 2.332)
Hispanic/Latino	1.158 (0.562 - 2.384)	1.157 (0.545 - 2.459)	1.346 (0.564 - 3.214)	1.197 (0.645 - 2.219)	1.145 (0.631 - 2.076)	1.137 (0.629 - 2.057)
Male		0.467*** (0.332 - 0.658)	0.530*** (0.338 - 0.831)	0.496** (0.281 - 0.878)	0.508** (0.288 - 0.895)	0.508** (0.288 - 0.894)
Young			0.869 (0.309 - 2.440)	0.831 (0.297 - 2.330)	0.843 (0.301 - 2.365)	0.856 (0.306 - 2.395)
Black Share of District				22.52*** (6.179 - 82.05)	16.56*** (4.867 - 56.38)	3.924*** (1.518 - 10.14)
Hispanic/Latino Share of District				8.099*** (2.879 - 22.78)	5.744*** (2.456 - 13.43)	12.05*** (8.189 - 17.72)
Other Race Share of District				0.338 (8.84e-05 - 1,290)	0.474 (6.31e-05 - 3,568)	5.29e-05*** (7.12e-07 - 0.00393)
Young Share of District					0.293*** (0.129 - 0.666)	13.51*** (4.990 - 36.57)
Male Share of District						0*** (0 - 1.04e-10)
Constant	9.500*** (5.273 - 17.12)	17.53*** (8.473 - 36.28)	18.68*** (8.004 - 43.57)	6.584*** (1.959 - 22.14)	10.75*** (3.843 - 30.08)	6.627e+07*** (847,036 - 5.185e+09)
Observations	852	851	818	818	818	818
McFadden's R <sup>2</sup>	0.010	0.020	0.026	0.061	0.062	0.063

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

### Notes:

<sup>1</sup>IOARS determinations as made in CJI's semiannual reviews.

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

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

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

<sup>5</sup>Standard errors are clustered by MPD district.

<sup>6</sup>Models 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 7 through 10 are not estimated.

### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part 1 and Part 2 Crime Data, 2022

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

	Mean	Standard Deviation	Minimum	Maximum	Observations
<b>IOARS Frisk Rate</b>	0.69	0.46	0.00	1.00	215
<b>Black</b>	0.86	0.35	0.00	1.00	209
<b>Hispanic/Latino</b>	0.09	0.28	0.00	1.00	209
<b>Male</b>	0.89	0.31	0.00	1.00	214
<b>Young</b>	0.69	0.46	0.00	1.00	206
<b>Black Share of District</b>	0.51	0.24	0.04	0.69	215
<b>Hispanic/Latino Share of District</b>	0.16	0.21	0.06	0.71	215
<b>White Share of District</b>	0.25	0.14	0.16	0.74	215
<b>Male Share of District</b>	0.48	0.02	0.46	0.53	215
<b>Young Share of District</b>	0.29	0.08	0.24	0.57	215
<b>Unemployment Rate in District</b>	7.05	1.30	3.10	8.40	215
<b>Lagged Total Crime Rate in District</b>	0.11	0.03	0.04	0.16	215
<b>Lagged Violent Crime Rate in District</b>	0.04	0.01	0.01	0.05	215
<b>Lagged Property Crime Rate in District</b>	0.05	0.02	0.03	0.11	215

**Notes:**

<sup>1</sup>IOARS determinations as made in CJI's semiannual reviews.

**Sources:**

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part 1 and Part 2 Crime Data, 2022

## 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	1.358 (0.174 - 10.62)	1.488 (0.190 - 11.67)	1.447 (0.168 - 12.46)	2.085 (0.229 - 18.97)	2.018 (0.212 - 19.16)	2.008 (0.202 - 19.94)	2.041 (0.210 - 19.80)
Hispanic/Latino	0.898 (0.121 - 6.661)	0.938 (0.131 - 6.711)	0.959 (0.126 - 7.284)	1.012 (0.134 - 7.629)	0.963 (0.123 - 7.528)	0.957 (0.112 - 8.136)	0.972 (0.117 - 8.104)
Male		2.125* (0.986 - 4.580)	2.033* (0.982 - 4.206)	2.055** (1.030 - 4.098)	2.053** (1.032 - 4.084)	2.051** (1.033 - 4.073)	1.955* (0.962 - 3.974)
Young			0.601 (0.227 - 1.592)	0.565 (0.198 - 1.615)	0.578 (0.201 - 1.665)	0.578 (0.201 - 1.665)	0.626 (0.217 - 1.806)
Black Share of District				3.832*** (1.971 - 7.449)	7.682*** (3.061 - 19.28)	8.528* (0.775 - 93.85)	0.00870* (6.73e-05 - 1.123)
Hispanic/Latino Share of District				14.66*** (3.270 - 65.73)	29.49*** (6.298 - 138.1)	27.99*** (5.844 - 134.1)	0.340 (0.0251 - 4.601)
Other Race Share of District				88,757** (2.271 - 3.468e+09)	81,171** (2.060 - 3.199e+09)	142,458 (0.0223 - 9.087e+11)	1.099e+06*** (798.2 - 1.513e+09)
Young Share of District					5.269* (0.750 - 37.02)	4.135 (0.0869 - 196.8)	0.00128*** (8.96e-05 - 0.0184)
Male Share of District						9.534 (0 - 5.428e+16)	2.268e+09* (0.391 - 1.315e+19)
District Unemployment Rate							2.271*** (1.440 - 3.582)
Constant	1.750 (0.237 - 12.90)	0.824 (0.0960 - 7.066)	1.257 (0.132 - 11.92)	0.124 (0.00747 - 2.071)	0.0499** (0.00401 - 0.620)	0.0166 (4.90e-10 - 565,477)	2.79e-06*** (2.20e-10 - 0.0353)
Observations	208	207	199	199	199	199	199
McFadden's R <sup>2</sup>	0.003	0.013	0.022	0.036	0.037	0.037	0.042

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

### Notes:

<sup>1</sup>IOARS determinations as made in CJI's semiannual reviews.

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

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

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

<sup>5</sup>Standard errors are clustered by MPD district.

<sup>6</sup>Models including district-level crime rate controls (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 8 through 10 are not estimated.

### Sources:

Milwaukee Police Department Stop Data, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

**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
<b>Black</b>	95.6% 0.004	1.4%	71.0% 0.018	15.5%
<b>Hispanic/Latino</b>	94.9% 0.011	0.7%	54.8% 0.106	-0.7%
<b>White</b>	94.2% 0.010		55.5% 0.249	

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

**Notes:**

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

<sup>2</sup>Average 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, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

## 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	182	48	15	22	26.4%	8.2%	12.1%	17.3%	-0.9%	12.1%
Hispanic/Latino	18	3	1	1	16.7%	5.6%	5.6%	7.6%	-3.5%	5.6%
Other Race	6	1	0	1	16.7%	0.0%	16.7%	7.6%	-9.1%	16.7%
White	11	1	1	0	9.1%	9.1%	0.0%			
Total	217	53	17	24	24.4%	7.8%	11.1%			

**Notes:**

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

<sup>2</sup>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.

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

<sup>4</sup>All 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, 2023



## D-2: Contraband Regression Results, All Contraband

	<b>Model 1 Odds ratio</b>	<b>Model 2 Odds ratio</b>	<b>Model 3 Odds ratio</b>
<b>Black</b>	1.893 (0.237 - 15.09)	2.322 (0.284 - 18.99)	2.757 (0.273 - 27.87)
<b>Hispanic/Latino</b>	0.900 (0.0760 - 10.66)	0.936 (0.0728 - 12.03)	1.282 (0.106 - 15.46)
<b>Male</b>		5.087*** (1.877 - 13.79)	4.056** (1.246 - 13.20)
<b>Young</b>		1.418 (0.475 - 4.237)	1.728 (0.539 - 5.538)
<b>Time of Day Fixed Effects</b>			X
<b>Quarter Fixed Effects</b>			X
<b>District Fixed Effects</b>			X
<b>Observations</b>	208	199	156

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

### Notes:

<sup>1</sup>These regressions are based on data from four quarters of 2023.

<sup>2</sup>Observations in the data are at the level of the individual stop involving a frisk.

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

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

<sup>5</sup>Time-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).

<sup>6</sup>Standard errors are clustered by MPD district.

<sup>7</sup>Odds Ratios are reported with CI in parentheses beneath.

### Source:

Milwaukee Police Department Stop Data, 2023

### D-3: Contraband Regression Results, Weapons and Drugs

	Weapons Contraband	Drug Contraband
	Model 3 Odds ratio	Model 3 Odds ratio
Black	0.818 (0.154 - 4.347)	1.594 (0.112 - 22.69)
Hispanic/Latino	-	0.812 (0.0315 - 20.94)
Male	2.056 (0.330 - 12.81)	-
Young	0.991 (0.394 - 2.493)	1.948 (0.450 - 8.432)
Time of Day Fixed Effects	X	X
Quarter Fixed Effects	X	X
District Fixed Effects	X	X
Observations	142	132

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

#### Notes:

<sup>1</sup>These regressions are based on data from four quarters of 2023.

<sup>2</sup>Observations in the data are at the level of the individual stop involving a frisk.

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

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

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

<sup>6</sup>Time-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).

<sup>7</sup>Standard errors are clustered by MPD district.

<sup>8</sup>Odds Ratios are reported with CI in parentheses beneath.

<sup>9</sup>The coefficient for Hispanic/Latino is omitted in the weapons contraband model because of collinearity with other variables, while the coefficient for Male is omitted in the drugs contraband model for the same reason.

#### Source:

Milwaukee Police Department Stop Data, 2023

**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
<b>Black</b>	28.7% 0.013	14.7%	18.8% 0.009	18.8%	16.8% 0.020	5.1%
<b>Hispanic/Latino</b>	17.0% 0.078	3.0%	21.8% 0.125	21.8%	9.9% 0.133	-1.8%
<b>White</b>	14.0% 0.123		0.0% -		11.7% 0.116	

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

**Notes:**

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

<sup>2</sup>Average 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, 2023

## 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	129.6767	0.1134	0.0058	0.0002	0.0016
2	81.5656	1.2349	0.0306	0.0014	0.0042
3	118.1178	0.5244	0.0282	0.0005	0.0045
4	98.0363	0.6358	0.0169	0.0001	0.0031
5	159.0036	0.5156	0.0279	0.0004	0.0042
6	37.5393	1.4692	0.0192	0.0000	0.0016
7	104.3394	0.5920	0.0237	0.0003	0.0061

#### Notes:

<sup>1</sup>The ratio of the traffic stop rate to the crime rate is calculated as (traffic stops per 1,000 residents 16-80 years old) divided by (crimes per 1,000 residents) in each district.

<sup>2</sup>The 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, 2023

U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part 1 and Part 2 Crime Data, 2022

## 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)	0.5811	0.0228	0.0003	0.0045
Majority Hispanic/Latino District (2)	1.2349	0.0306	0.0014	0.0042
Majority White Districts (1,6)	0.7913	0.0125	0.0001	0.0016
Mixed Race/Ethnicity District (3)	0.5244	0.0282	0.0005	0.0045
Comparison of Black Districts to White Districts	-27%	82%	200%	181%
Comparison of Hispanic/Latino District to White Districts	56%	145%	1300%	163%
Comparison of Mixed Race/Ethnicity District to White Districts	-34%	126%	400%	181%

### Notes:

<sup>1</sup>Districts 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.

<sup>2</sup>District 3 does not represent a clear racial or ethnic majority.

<sup>3</sup>Traffic 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.

<sup>4</sup>The 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, 2023

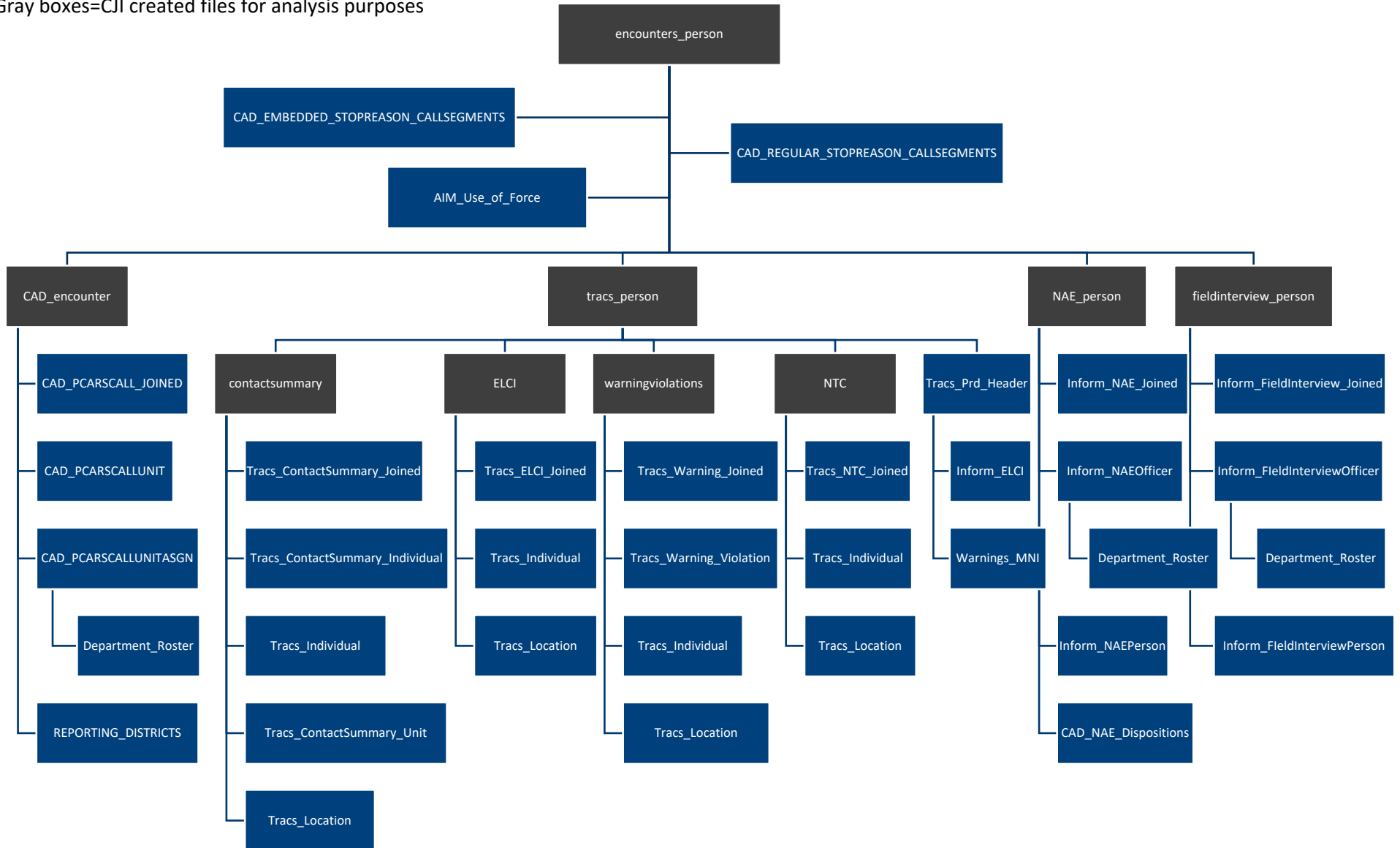
U.S. Census American Community Survey 5-Year Estimates, 2018-2022

Milwaukee Part 1 and Part 2 Crime Data, 2022

# Appendix F: Data Linkages Chart

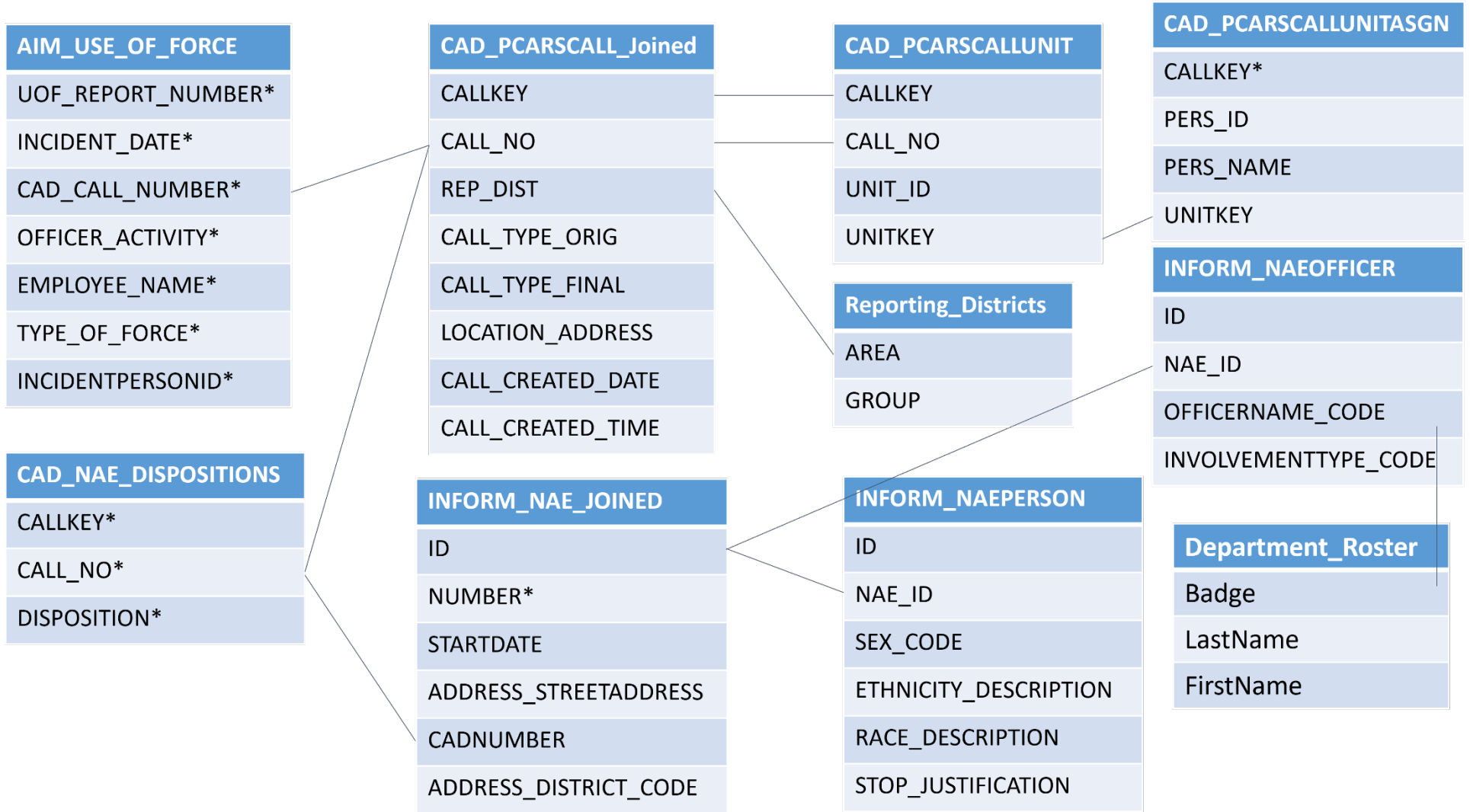
“NAE” in the below charts refers to “no-action encounter”

Gray boxes=CJI created files for analysis purposes

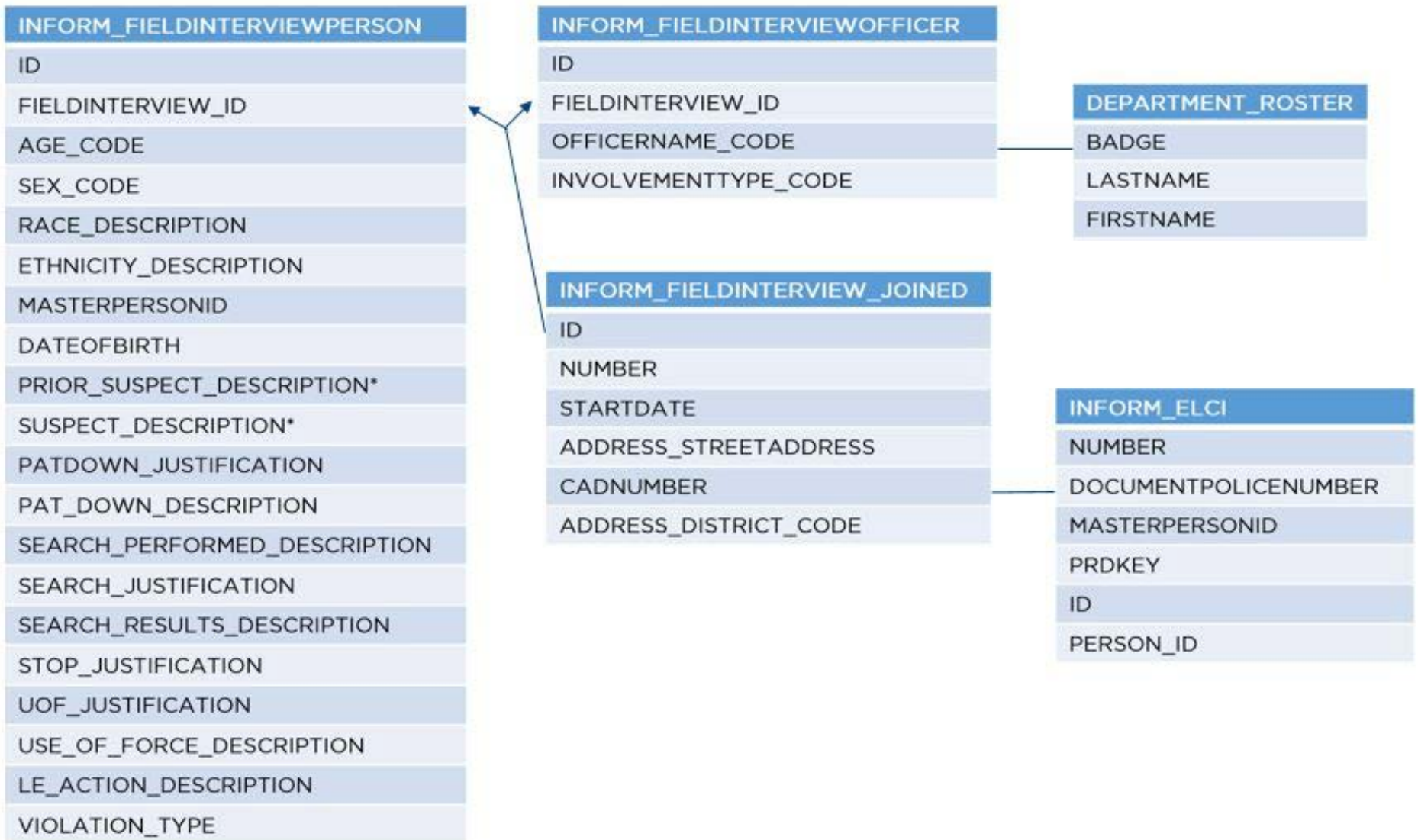


## Appendix G: Encounter Data Linkages Charts

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

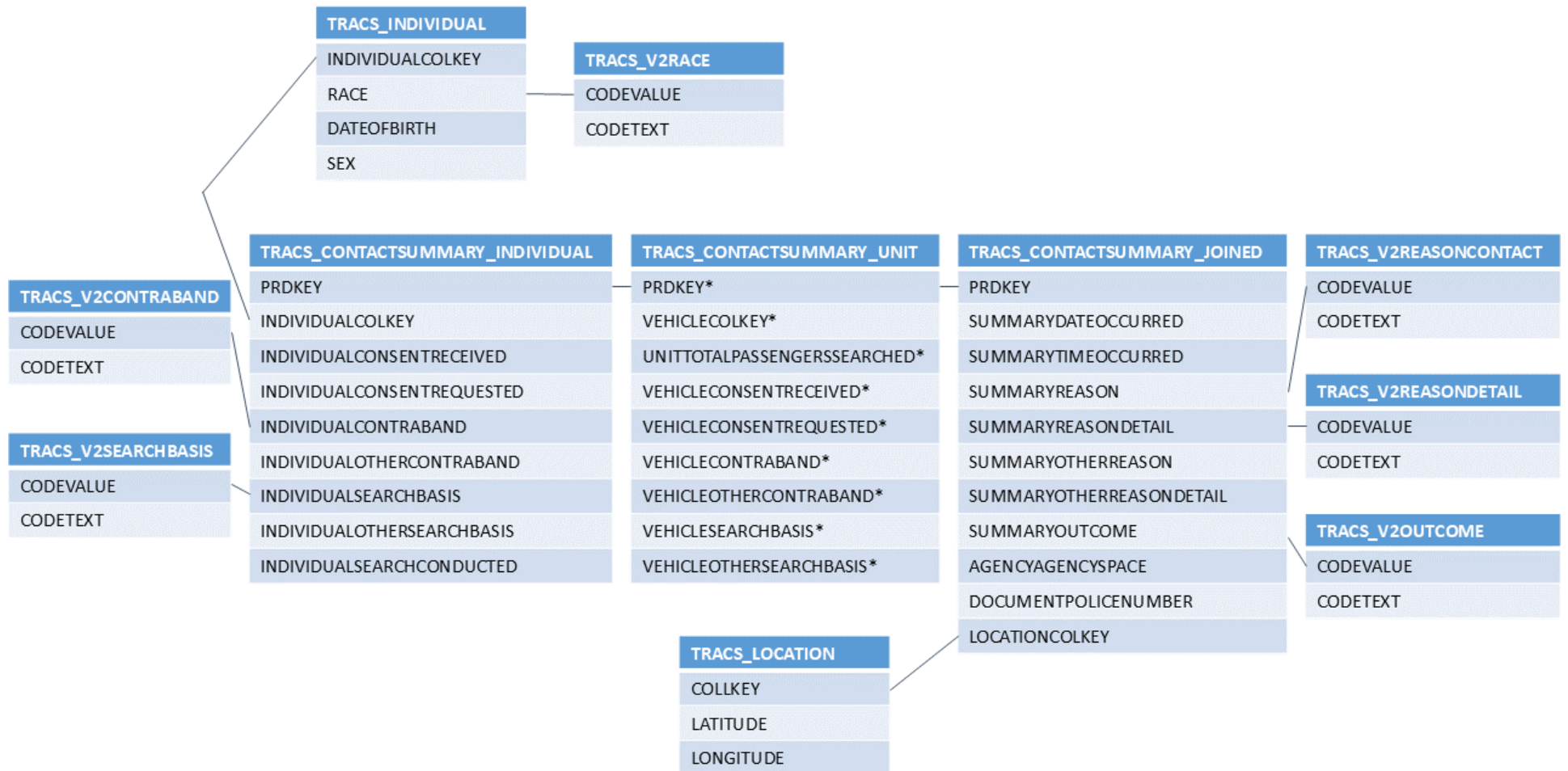


CALL\_NO and CADNUMBER link to CADNUMBER and DOCUMENTPOLICENUMBER below.





CADNUMBER and DOCUMENTPOLICENUMBER link to DOCUMENTPOLICENUMBER below.



INDIVIDUALCOLKEY in TRACS\_INDIVIDUAL links to INDIVIDUALCOLKEY and DEFENDANTCOLKEY below.  
 COLLKEY in TRACS\_LOCATION links to LOCATIONCOLKEY below.  
 PRDKEY links to PRDKEY below.

