

## NYPD Predictive Policing Timeline

The Brennan Center filed a [Freedom of Information Law \(“FOIL”\) request](#) for information about how the New York Police Department (“NYPD”) has tested, purchased, and implemented predictive policing software on June 14, 2016. The documents were ultimately obtained over the course of [two years of litigation](#) on that original request.

These documents reveal details about the NYPD’s test of three types of commercial predictive policing software and shed light on the in-house algorithms the NYPD ultimately employed to inform deployment decisions. The difficult process to get access to this information, and the piecemeal production we ultimately received, also reveal the NYPD’s quest to keep the public in the dark about this technology.

The timeline below aims to provide clarity that the NYPD’s disorganized production does not. It arranges the documents in chronological order and summarizes their contents. The first column contains the date. The second provides a narrative timeline of the NYPD’s efforts to test commercial predictive policing software. The third column links to NYPD documents from the given time period and divides them based on the private contractor to which they apply. The timeline also contains a summary of and documents from the Brennan Center’s FOIL request and subsequent litigation.

<b>2008</b>	The NYPD’s Domain Awareness System (DAS) development begins. DAS describes a citywide infrastructure network comprised of sensors, devices, software, and databases that provide analytics and information to police officer smartphones and precinct desktops. The NYPD Counterterrorism Bureau is the central repository for the data.	<a href="#">Domain Awareness System Report (NYPD Report, E. S. Levine, Jessica Tisch, Anthony Tasso, Michael Joy, The New York City Police Department’s Domain Awareness System, Feb. 2017)</a>
<b>2013</b>	The NYPD deploys DAS to every precinct in NYC. As part of this expansion, the NYPD develops and deploys predictive policing algorithms to help determine resource allocation. Before, allocation decisions were informed by “hot-spot” maps, which were sometimes still constructed by hand.	<a href="#">Domain Awareness System Report</a>
<b>Late 2014</b>	NYPD begins development of a mobile version of DAS for use on smartphones and tablets. Deployment of mobile DAS begins in June 2015 and is completed in April 2016. All 36,000 NYPD officers now have a smartphone with access to DAS.	<a href="#">Domain Awareness System Report</a>
<b>January 2015</b>	<b>Jan. 6:</b> NYPD begins communicating with geospatial software developer and data analytics company <a href="#">Azavea</a> . At this time, Azavea runs HunchLab, a predictive policing software. Azavea submits a non-disclosure agreement (NDA) to the NYPD in order to begin a pilot evaluation of HunchLab.	Azavea/HunchLab: <a href="#">R_NYC0000258</a>
<b>February 2015</b>	<b>Exact Date Unknown:</b> Azavea produces an executive summary of their proposed pilot program for NYPD. It	Azavea/Hunchlab: <a href="#">NYC_0002335-65</a>

	includes an overview of the HunchLab software as well as a proposed pilot process.	
<b>April 2015</b>	<p><b>Apr. 16:</b> Azavea submits a full pilot project proposal to NYPD. It offers a pilot run of HunchLab for 24 months in three precinct locations.</p> <p><b>Exact Date Unknown:</b> NYPD begins communication with predictive policing company <a href="#">PredPol</a>. PredPol and NYPD develop an agreement aimed at launching a pilot evaluation program of PredPol’s predictive policing software. The agreement calls the test a “gift” and emphasizes it must be free of cost to NYPD.</p>	<p>PredPol: <a href="#">NYC 0002462-3</a></p> <p>Azavea/HunchLab: <a href="#">NYC 0000595-45</a></p>
<b>May 2015</b>	<p><b>May 18:</b> After NYPD requests several adjustments, Azavea submits an updated HunchLab pilot evaluation proposal. NYPD does not appear to have provided a final copy of that proposal.</p>	<p>Azavea/HunchLab: <a href="#">NYC 0002376-7</a></p>
<b>June 2015</b>	<p><b>Jun. 25:</b> Azavea gives a presentation to NYPD, including a webinar on HunchLab. A recording of the webinar is available on <a href="#">YouTube</a>.</p>	<p>Azavea/HunchLab: <a href="#">R NYC0000475-7</a></p>
<b>July 2015</b>	<p><b>Jul. 7:</b> Keystats Inc., a Bronxville, NY-based data analytics company, writes to NYPD urging it to consider Keystats as a subcontractor in the predictive policing pilot program offered to Azavea. It emphasizes that its racially diverse workforce would add value to the analytical capability of Azavea’s “homogeneous workforce.”</p> <p><b>Exact Date Unknown:</b> Crime data from this month (July 1 – July 31, 2015) is used in an undated presentation by PredPol to demonstrate the success of their software’s predictive results when compared to actual crime statistics.</p>	<p>PredPol: High-Level Test Results Presentation (<a href="#">NYC0000830-9</a>)</p> <p>Keystats: <a href="#">NYC 0002459-61</a></p>
<b>September 2015</b>	<p><b>Sept. 3-18:</b> Azavea engages in a back-and-forth discussion with NYPD about the data it needs in order to conduct its predictive policing pilot evaluation. NYPD offers to supply “environmental data” and asks if information on “liquor licenses, supermarkets, hospitals, etc.” would be useful.</p> <p><b>Sept. 16:</b> Azavea returns a revised agreement to NYPD to participate in a pilot evaluation program in an email chain. NYPD does not appear to have provided a final copy of that agreement.</p> <p><b>Sept. 24:</b> NYPD writes to Keystats inviting the company to participate in a pilot evaluation period of 30-90 days. Separately, NYPD formally acknowledges PredPol’s interest in participating in a predictive policing pilot</p>	<p>PredPol: <a href="#">R NYC0000049-50</a>; <a href="#">NYC 0002635-6</a>; <a href="#">R NYC0000057-8</a></p> <p>Azavea/HunchLab: <a href="#">NYC 0002464-82</a>; <a href="#">NYC 0002475-82</a></p> <p>Keystats/Noviant: <a href="#">NYC 0002483-6</a>; <a href="#">R NYC0000043-4</a>; <a href="#">R NYC0000062-74</a>; <a href="#">NYC 0002498-502</a>; <a href="#">NYC 0002495-7</a></p>

	<p>evaluation program. It stipulates that the evaluation must be free of charge to NYPD, that PredPol must sign NDAs, and that PredPol must supply NYPD with a list of every type of data it requires from the police database.</p> <p><b>Sept. 27-9:</b> Keystats signs NDAs with NYPD.</p> <p><b>Sept. 28:</b> NYPD responds to several preliminary questions asked by PredPol. The Department expresses a preference for vendors to use data besides NYPD crime data in its predictive modeling. This could include census data. NYPD also contacts Noviant, an IT company that wishes to partner with Keystats in the pilot evaluation.</p> <p><b>Sept. 29:</b> Noviant signs contract and NDA with NYPD.</p>	
<b>October 2015</b>	<p><b>Oct. 1:</b> Azavea submits to NYPD its desired data elements for use in its HunchLab predictive policing software. The requested data from NYPD includes basic crime information—like crime type, location, and date—as well as extensive environmental information, including the locations of schools, hospitals, subway entrances, mental health facilities, methadone clinics, pawn shops, liquor licenses, restaurants, and laundry facilities.</p> <p><b>Oct. 7-8:</b> PredPol signs contract and NDAs with NYPD.</p> <p><b>Oct. 8:</b> On an unknown date, NYPD sent a questionnaire to all interested companies regarding the predictive policing pilot evaluation. Today is the deadline for participating companies to send NYPD their responses to the questionnaire. NYPD will use this questionnaire to determine if they wish to move forward in the evaluation process with the companies.</p>	<p>PredPol: <a href="#">R_NYC0000056-8</a>; <a href="#">NYC 0000738-46</a>; <a href="#">NYC 0000660</a>; <a href="#">NYC 0002637</a>; <a href="#">NYC 0002640</a>; <a href="#">NYC 0002642-4</a></p> <p>Azavea/HunchLab: <a href="#">NYC 0002488-9</a></p> <p>Keystats: <a href="#">NYC 0002490-5</a>; <a href="#">NYC 0000728-37</a> (possibly, exact date unknown)</p>
<b>November 2015</b>	<p><b>Nov. 19:</b> NYPD confirms HunchLab’s, PredPol’s and Keystats’s participation in the evaluation and acknowledges receipt of signed NDA forms.</p> <p><b>Nov. 28:</b> Keystats submits an additional NDA form.</p>	<p>PredPol: <a href="#">NYC0002514</a></p> <p>Azavea/HunchLab: <a href="#">NYC 0002503</a></p> <p>Keystats: <a href="#">NYC 0002513</a>; <a href="#">R_NYC0000147-52</a>; <a href="#">R_NYC0000155-75</a>; <a href="#">R_NYC0000203-4</a></p>
<b>December 2015</b>	<p><b>Dec. 1:</b> Both PredPol and HunchLab sign and submit the FBI Criminal Justice Information Services (CJIS) Security Addendum, a security document for private contractors that wish to perform criminal justice functions for a government agency. The document contains limitations on what the private contractor can and cannot do. NYPD either did not require Keystats/Noviant to submit this document or did not provide it to the Brennan Center.</p>	<p>PredPol: <a href="#">NYC 0002645-50</a></p> <p>Azavea/HunchLab: <a href="#">NYC 0002522-3</a>; <a href="#">R_NYC0000321-4</a>; <a href="#">NYC 0000679-727</a></p>

	HunchLab also belatedly submits the NYPD questionnaire originally requested by October 8.	
<b>January 2016</b>	<p><b>Jan. 6:</b> Azavea signs NDA with NYPD.</p> <p><b>Jan. 7:</b> PredPol signs more NDAs with NYPD.</p> <p><b>Jan. 19:</b> Azavea meets with NYPD and conducts an oral presentation on HunchLab.</p> <p><b>Jan. 20:</b> An NYPD staff analyst and the Director of NYPD’s Operations Research communicate internally about the best methods for conducting and evaluating the pilot test. They discuss the length of the trial period, the size of the geographic areas to be tested, and the metrics of evaluation, including the number of true positives, false negatives, and false positives.</p>	<p>NYPD Internal: <a href="#">NYC0000828</a>;</p> <p>PredPol: <a href="#">NYC 0002638-9</a>; <a href="#">NYC 0002641</a></p> <p>HunchLab: <a href="#">R NYC0000321-4</a></p>
<b>February 2016</b>	<p><b>Feb. 1:</b> Based on an oral presentation by PredPol and their answers to NYPD’s questionnaire, NYPD invites PredPol to participate in the final phase of the evaluation, a 45-90 day “Predictive Policing Trial Evaluation,” which will test their predictive policing model against models by other vendors. The evaluation is no-cost to NYPD and will feature a set framework developed by the NYPD Office of Management Analysis and Planning and the NYPD’s Predictive Policing Committee, comprised of the Department of Correction, the Office of the Chief of Department, the Counterterrorism Bureau, and the Information Technology Bureau. Vendors will be required to predict crime for five 300 ft x 300 ft geographic boxes (1) in each precinct, (2) for each platoon, and (3) for each relevant category of crime, which includes robbery, felony misdemeanor and assault, burglary, grand larceny from person, grand and petit larceny from automobile, and shooting incidents.</p> <p><b>Feb. 11:</b> Keystats submits signed “Security Control Certification” form to NYPD for the 45-90 day Predictive Policing Trial Evaluation . The form requires data provided for the trial evaluation to be encrypted while in transit and at rest.</p> <p><b>Feb. 15:</b> Azavea submits signed “Security Control Certification” to NYPD for the 45-90 day trial.</p> <p><b>Feb. 16:</b> PredPol submits signed “Security Control Certification.”</p> <p><b>Feb. 18:</b> NYPD acknowledges Keystats’s and PredPol’s participation in the “no cost” 45-90 day trial program.</p>	<p>PredPol: <a href="#">NYC 0002602-3</a>; <a href="#">NYC 0002617-8</a>; <a href="#">R NYC0000382-3</a>; <a href="#">R NYC0000378-80</a>; <a href="#">NYC 0002651</a></p> <p>Azavea/HunchLab: <a href="#">R NYC0000356-7</a>; <a href="#">R NYC0000365-8</a>; <a href="#">R NYC0000373-7</a></p> <p>Keystats: <a href="#">R NYC0000351-2</a>; <a href="#">R NYC0000354-5</a>; <a href="#">R NYC0000361-2</a>; <a href="#">R NYC0000371-2</a>; (Noviant) <a href="#">NYC 0002613-5</a></p>

<p><b>March 2016</b></p>	<p><b>Mar. 7:</b> Keystats writes NYPD with several concerns. NYPD has provided data input codes for every category of crime but has not provided an input code for shootings. Additionally, several database files with geographic information are refusing to open. Keystats suspects they may be corrupt and requests a new copy. We do not know how NYPD responded.</p> <p><b>Mar. 18:</b> PredPol tells NYPD that the parameters NYPD wishes to impose on the trial will not yield predictive accuracy. PredPol objects to the use of a predetermined geographic grid for making predictions. It does not wish to make predictions based on predetermined boxes, but wishes instead to develop its own grid. PredPol says it will still use the same size geographic boxes, as well as the same precincts, crime types, and time periods.</p> <p><b>Mar. 21/22:</b> NYPD refuses to change the parameters for PredPol because it wants to ensure all vendors are “evaluated equally.” NYPD writes Keystats and requests weekly predictions in addition to previously agreed upon daily predictions. Keystats refuses, arguing that it “literally doubles the scope of work originally outlined for this project.”</p>	<p>PredPol: <a href="#">NYC_0000769-75;</a>  <a href="#">R_NYC0000399;</a> <a href="#">NYC_0002622-5;</a> <a href="#">NYC_0002621</a></p> <p>Azavea/HunchLab: <a href="#">R_NYC0000397-8</a></p> <p>Keystats: <a href="#">R_NYC0000390-3;</a>  <a href="#">R_NYC0000396;</a> <a href="#">R_NYC0000400-1</a></p>
<p><b>April 2016</b></p>	<p><b>Apr. 20:</b> NYPD contacts PredPol and complains of “significant issues with Predpol’s precinct and patrol borough predictions.” Predictions were missing and some displayed error messages. NYPD also contacts Keystats to report issues with their predictions.</p> <p><b>Apr. 21:</b> PredPol says this was only a sample and they will remedy the issue.</p> <p><b>Apr. 25:</b> According to emails, the official 45-90 day Predictive Policing Pilot Evaluation commences with participation from PredPol, Azavea, and Keystats. PredPol sends another incomplete file and receives a complaint from NYPD. NYPD informs PredPol they will not send notifications of errors after Apr. 28.</p> <p><b>Apr. 27:</b> PredPol once again urges NYPD to alter the required parameters. By proceeding with a predetermined grid, NYPD has asked for predictions for geographic boxes in which there is effectively zero probability of a crime occurring. PredPol claims this reduces the overall predictive accuracy of the program.</p> <p><b>Apr. 28:</b> Despite emails with the date Apr. 25, the 45-90 day Predictive Policing Pilot Evaluation commences on this date, according to NYPD’s internal presentation following the trial evaluation.</p>	<p>NYPD Internal: <a href="#">NYC0000802-18</a></p> <p>PredPol: <a href="#">R_NYC0000429-30;</a>  <a href="#">R_NYC0000435;</a> <a href="#">R_NYC0000437-46;</a> <a href="#">R_NYC0000448</a></p> <p>Azavea/HunchLab: <a href="#">NYC_0002627;</a>  <a href="#">R_NYC0000412-3</a></p> <p>Keystats: <a href="#">R_NYC0000427-8</a></p>

<p><b>May 2016</b></p>	<p><b>May 17:</b> PredPol removes itself from the pilot evaluation, claiming that working with the NYPD is no longer a “strategic fit” for the company. Brian MacDonald introduces himself as the new CEO of PredPol. He explains that PredPol wishes to focus on “supporting [its] growing customer base and creating new features for [its] platform.” He provides no other guidance on why working with NYPD is no longer desirable for PredPol.</p>	<p>PredPol: <a href="#">NYC 0002629-30</a>  Keystats: <a href="#">R_NYC0000520-4</a>;  <a href="#">R_NYC0000528-31</a></p>
<p><b>June 2016</b></p>	<p><b>Jun. 6:</b> The Predictive Policing Pilot Evaluation ends.</p> <p><b>Jun. 14:</b> The Brennan Center submits its original FOIL request to NYPD. It seeks information relating to NYPD’s “use of predictive policing technology as well as the Department’s policies and procedures governing such use.” Documents requested include purchase records and agreements, vendor communications, policies governing use, federal communications, information inputs, past uses, audits, nondisclosure agreements, and information on how the technology works.</p> <p><b>Jun. 29:</b> NYPD rejects the entire FOIL application. The Department cites several subsections of FOIL without elaboration and says that the documents would “reveal non-routine techniques and procedures.”</p>	<p>NYPD Internal: <a href="#">NYC0000819</a>;  <a href="#">NYC0000802</a></p> <p><a href="#">Brennan Center FOIL Request</a>  <a href="#">NYPD Denial</a></p>
<p><b>July 2016</b></p>	<p><b>Jul. 29:</b> The Brennan Center appeals the FOIL denial on two grounds: (1) that the NYPD’s simple recitation of subsections of FOIL is inadequate to meet its burden of particularized and specific justification for nondisclosure and that (2) the NYPD’s claim of exemption based on “non-routine techniques and procedures” is incorrect.</p>	<p><a href="#">Brennan Center Appeal</a></p>
<p><b>August 2016</b></p>	<p><b>Aug. 15:</b> NYPD issues a blanket denial of Brennan Center’s FOIL request appeal. The Department claims the documents would hurt the NYPD’s ability to protect proprietary trade secrets or guarantee the security of its information technology. It repeats that the documents would “reveal non-routine techniques and procedures.”</p>	<p><a href="#">NYPD Denial of Appeal</a></p>
<p><b>December 2016</b></p>	<p><b>Dec. 15:</b> The Brennan Center files an Article 78 action with the New York State Supreme Court against the NYPD for failing to respond adequately to a FOIL request for records.</p>	<p><a href="#">Brennan Center Filing</a>  <a href="#">Memorandum of Law</a></p>
<p><b>January 2017</b></p>	<p><b>Jan. 18:</b> NYPD publishes a paper on “The New York City Police Department’s Domain Awareness System,” including the NYPD’s predictive policing program.</p>	<p><a href="#">Domain Awareness System Report</a></p>
<p><b>April 2017</b></p>	<p><b>Apr. 7:</b> NYPD responds to the Brennan Center’s lawsuit and agrees to provide some documents in response to the</p>	<p><a href="#">NYPD Response</a></p>

	Brennan Center’s request, including some vendor agreements and email communications with predictive policing software vendors (which were mostly redacted), a set of privacy protection guidelines from 2009, and a copy of an article on the department’s Domain Awareness System. NYPD also discloses that they use a predictive policing system that was developed in-house, after testing products from three different vendors.	<a href="#">Memorandum of Law</a>
<b>May 2017</b>	<b>May 17:</b> The Brennan Center narrows its request to focus on records reflecting testing and utilization of the predictive policing system, as well as the historical inputs and outputs of the model.	<a href="#">Brennan Center Reply</a>
<b>June 2017</b>	<b>Jun. 22:</b> On December 27, 2017, the court ordered NYPD to produce records on its predictive policing tests up until this date.	<a href="#">Court Order</a>
<b>August 2017</b>	<b>Aug. 30:</b> The Brennan Center conducts its oral argument in its litigation against the NYPD.	<a href="#">Oral Argument</a>
<b>December 2017</b>	<b>Dec. 22:</b> The court orders the NYPD to produce certain records about the testing, development, and use of predictive analytics tools to the Brennan Center. An order from Judge Barbara Jaffe directs the Department to produce “the output data from the inception of the predictive policing until six months before the date of this decision, redacted of any sensitive information such as the location of servers or details concerning encryption.”	<a href="#">Court Order</a>
<b>May 2018</b>	<b>May 18:</b> Judge Jaffe releases an amended decision and judgment directing the NYPD to search its Counterterrorism Bureau for predictive policing records.	<a href="#">Daniel Magee Affidavit</a> <a href="#">Amended decision and judgment</a>
<b>July 2018</b>	<b>Jul. 5:</b> The court denies both the Brennan Center’s and the NYPD’s motions for reargument.  <b>Jul. 12:</b> Following the May 18 amended court decision, Daniel Magee of the NYPD Counterterrorism Bureau conducts a court-mandated search for documents pertaining to reviews of software being evaluated by the Counterterrorism Bureau, predictive policing, Palantir Gotham, PredPol, KeyStats, or Azavea. He claims to find no responsive records or results.	<a href="#">Court Denial of Motions for Reargument</a>  <a href="#">Brennan Center Motion for Reargument</a>  <a href="#">NYPD Motion for Reargument</a>
<b>November 2018</b>	<b>Nov. 8:</b> Daniel Magee swears in an affidavit that he conducted a search on July 12 for documents on predictive policing in the records of the NYPD Counterterrorism Bureau and discovered no responsive results.	<a href="#">Daniel Magee Affidavit</a>

<b>March 2019</b>	<b>Mar. 1:</b> After two years of litigation, NYPD finally produces predictive policing documents to Brennan Center counsel. The 1397 pages are piecemeal and disorganized.	
<b>April 2019</b>	<b>Apr. 30:</b> Lesa Moore, the Freedom of Information Law Litigation Supervisor at the NYPD, swears in an affidavit that she conducted a diligent search for all predictive policing records requested by the court. She emphasizes that the predictive policing tool does not “store, maintain, or recreate past output predictions.” She is therefore unable to supply most of the actual output predictions.	<a href="#">Lesa Moore Affidavit</a>