

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
NORFOLK DIVISION**

LEE SCHMIDT and CRYSTAL ARRINGTON,

Plaintiffs,

v.

CITY OF NORFOLK and MARK TALBOT, in
his official capacity as the Norfolk Chief of
Police,

Defendants.

Civil Case No. 2:24-cv-00621-MSD-LRL

**PLAINTIFFS' OPPOSITION TO
DEFENDANTS' MOTION FOR SUMMARY JUDGMENT**

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INTRODUCTION

Every day in the City of Norfolk, drivers must navigate through a network of 176 Flock Cameras.¹ There is no dispute that this extensive network has the capacity to capture and even reconstruct most routes in the city. Some routes can be reconstructed almost entirely, and, across the city, it is virtually certain that one or more of a person's habitual weekly routes can be reconstructed. As NPD Chief Mark Talbot told the city council, "It would be difficult to drive anywhere of any distance without running into a camera." Unsurprisingly, then, the Flock Cameras photograph cars tens of millions of times every month. *See* Doc. 65-1, PageID# 762. Virtually none of these photographs capture people suspected of any crime. Instead, nearly all reflect ordinary people going about their daily routines. That means the surveillance "is like a 21st century general search, enabling the police to collect all movements, both innocent and suspected, without any burden to articulate an adequate reason to search for specific items related to specific crimes." *Leaders of a Beautiful Struggle v. Balt. Police Dep't*, 2 F.4th 330, 348 (4th Cir. 2021) (cleaned up).

Still, Norfolk claims Plaintiffs cannot prove the Flock Cameras invade people's reasonable expectation of privacy in the whole of their movements. But its arguments depend on a series of faulty legal premises that do little more than repackage arguments the Supreme Court and Fourth Circuit have rejected. Correcting those errors shows not only that the "undisputed" evidence Norfolk cites is mostly immaterial, but that Plaintiffs have proved a Fourth Amendment violation.

First, Plaintiffs have standing. The Flock Cameras captured Lee at least 475 times and Crystal at least 324 times in less than five months. And Lee is likely to be captured even more often, as he just finished a brief retirement after his naval career. Yet Norfolk claims Plaintiffs lack

¹ Except as otherwise noted, this brief uses the same defined terms as Plaintiffs' Memorandum in Support of Their Motion for Partial Summary Judgment. Thus, Plaintiffs refer to Defendants collectively as "Norfolk," and to NPD's 176 Flock Cameras as the "Flock Cameras."

standing because they cannot prove an NPD officer will access these hundreds of datapoints. That same argument was rejected at every stage of *Beautiful Struggle*, from the district court to the en banc Fourth Circuit. These courts and others have uniformly held that the targets of surveillance have standing to challenge it, regardless of whether anyone reviews the results of the surveillance.

Second, Norfolk argues Plaintiffs' claims fail because the Flock Cameras do not record the literal "whole" of their movements. Again, that runs up against binding precedent. The Supreme Court has recognized that people have an *expectation of privacy* in the whole of their movements. But, as *Beautiful Struggle* explained, surveillance that falls short of the literal "whole" of people's movements can *invade* that expectation of privacy by enabling deductions that "reveal intimate details through habits and patterns." *Id.* at 341. People's movements are "so unique and habitual" that "even just a few points of their location history" are profoundly revealing. *Id.* at 343–44 & n.11. No case sets the Fourth Amendment threshold at the impossible height Norfolk demands.

Third, Norfolk complains that Plaintiffs have not shown that the Flock Cameras revealed specific "private" details. That framing misses the flock for the birds: what matters in challenges to dragnet surveillance is what the technology is *capable of*, not what it turned up about a specific person. The Flock Cameras have the capacity to capture the vast majority of routes within the city and can "at least sometimes" enable police to reconstruct nearly an entire route. *Cf. id.* at 343. Aggregated over days and weeks, Flock data enable NPD to deduce people's routine, habitual movements across the city. Norfolk's labor economics expert does not show otherwise. Instead, he deleted roughly half the data he received, lumped routes inside Norfolk together with routes that extended beyond the city, and conjured irrelevant statistics that wrongly assume people spend all day in their cars. Even worse, he and Norfolk insist that the Court must assess Flock data "alone"—in a factual and inferential vacuum—despite decades of precedent rejecting "the novel proposition

that inference insulates a search.” *Kyllo v. United States*, 533 U.S. 27, 36 (2001). As in *Beautiful Struggle*, NPD officers can and do use their expertise and myriad other surveillance tools to make deductions using Flock data. “[B]ecause [Flock] data is what enables deductions from the whole of individuals’ movements,” *Beautiful Struggle*, 2 F.4th at 345, the Flock Cameras’ warrantless operation is a search.

At bottom, Defendants are trying to relitigate *Beautiful Struggle* because they disagree with it. But that is not a reason to grant summary judgment to Norfolk; it is a reason to deny it.

COUNTERSTATEMENT OF UNDISPUTED MATERIAL FACTS

1. Not material.
2. Admitted that NPD’s purpose in contracting with Flock was to discover and investigate crime. PX9 at -7535; *see also* PX7 at 29:5–20, 36:9–16, 37:1–19, 192:17–193:8.²
3. Admitted, except to the extent this paragraph implies that Flock’s ALPR cameras do not photograph the fronts of vehicles or stream and record video. *See* PX2 55:12–56:4, 58:11–17, 123:4–11, 124:8–17.
4. Admitted, except to the extent this paragraph implies Flock’s ALPR cameras cannot capture oncoming traffic. *See id.* at 48:13–18, 123:4–11, 124:8–17; *see also* PX34 at 48:20–49:6.
5. Admitted, except to the extent this paragraph implies Flock’s ALPR cameras cannot capture oncoming traffic. *See* PX2 at 48:13–18, 123:4–11, 124:8–17; *see also* PX34 at 48:20–49:6.
6. Admitted, except to the extent this paragraph implies Flock’s ALPR cameras cannot capture oncoming traffic. *See* PX2 at 48:13–18, 123:4–11, 124:8–17; *see also* PX34 at 48:20–49:6.
7. It is undisputed that Flock ALPR cameras read and record license plate numbers in

² PX and DX refer to Plaintiffs’ and Norfolk’s exhibits, respectively. Plaintiffs’ exhibit numbering is consecutive to the numbering of the exhibits to Plaintiffs’ Memorandum in Support of their Motion for Partial Summary Judgment.

photographs of vehicles. “[A] license plate number . . . is an agency-issued number that identifies the owner of the vehicle.” *Neal v. Fairfax Cnty. Police Dep’t*, 812 S.E.2d 444, 449 (Va. 2018).

8. Admitted that a single Flock ALPR camera does not directly collect this information. But it is undisputed that the system of Flock Cameras enables NPD to infer this information based on a pattern of captures and non-captures. *See* PX27 at 6:13–10:11, 28:22–29:8, 49:9–13 (NPD detective testifying that he could determine suspect’s route and prove that the suspect’s statements about the route he took were false based on the pattern of Flock captures, as well as non-captures); NorfolkTV, *Norfolk City Council Work Session*, at 21:21–43 (YouTube, May 23, 2023), <http://bit.ly/45gPzjz> (Chief Talbot agreeing that the Flock Cameras “can actually create a traceable path of [a stolen] car moving through the city, as long as it’s being picked up by the Flock cameras”); Flock Safety, *Expand Your LPR Coverage: Introducing Falcon for every roadway and use case*, at 29:45–30:27 (Flock Safety, Aug. 30, 2023), <http://bit.ly/4mlHyQv> (Flock webinar: “[W]e have a sequential hit. So, these three LPR cameras have each seen a stolen vehicle. It’s telling you where they saw them and in what way. From that, we can then predict the route with our real-time routing.”); PX34 at 14:5–12, 15:10–14, 140:13–22 (Norfolk’s labor economics expert agreeing that consecutive Flock captures can show someone “basically went from A to B”); PX24 at 27–30 (showing that Flock Cameras can reconstruct 70% or more of many simulated routes); *id.* at 37, 50 (using the absence of Flock captures to rule out areas a person could have reached between Flock captures); PX25 at 9–19 (demonstrating how someone could determine locations people visited and reconstruct their routes based on patterns of Flock captures and non-captures). It is also undisputed that NPD has the capability to infer where a suspect likely went after or between Flock captures. *See* PX24 at 36–38 (demonstrating how this process can be automated); PX7 at 29:5–20, 50:7–18, 191:22–193:8, 196:18–199:15.

9. It is undisputed that the Flock Cameras record license plates, which police can use to look up the registered owner, as well as their address and associates' addresses. PX7 at 177:22–178:4; PX35 at 65:5–66:15; 157:7–21.³ Norfolk's 30(b)(6) representative explained how NPD officers used registration information and Flock captures to intercept a suspect at his destination, his home. *See* PX7 at 199:1–15. He also testified that certain officers searching the Flock system may have been "trying to find out where that person came from." *Id.* at 277:15–278:4.

10. Admitted but not material.

11. Disputed but not material. Flock may store footage for longer if it believes it is legally obligated to do so. *See* PX9 at -7542–43; PX10 at 42:18–45:2, 104:8–105:10.

12. Admitted.

13. The first sentence is admitted. The second and third sentences are admitted but not material. *See* Section I below.

14. The first sentence is admitted as to Flock customers that are law enforcement agencies. The second and third sentences are admitted.

15. The first three sentences are admitted. As to the fourth sentence, it is admitted that Flock users cannot search directly for a person within the Flock system. But Flock users can look up registration information and use that information to search by license plate. *See* PX7 at 177:22–178:4; PX35 at 65:5–66:15; 157:7–21. In addition, the Flock Cameras collect data on whether there is a person in the image. *See* PX2 at 64:21–65:21, 127:11–129:14.

16. Admitted.

17. Admitted.

³ Norfolk's labor economics expert took the position that even a camera stationed 40 feet from a residential driveway would not capture the origin of a trip because "the Flock camera data" do not specify that the location is a residence or who lives at the house. *See* PX34 at 93:21–95:11.

18. Admitted, except that Norfolk's 30(b)(6) designee testified that NPD acquired the four additional cameras referenced in footnote 2 in January or February 2025. PX7 at 111:5–17.

19. Disputed but not material. Cameras in “clusters” are located in “different places” to provide information about cars' direction of travel. PX7 at 41:7–15, 100:8–101:5, 180:19–181:8, 190:22–191:8; 277:15–278:4; PX34 at 57:4–14, 59:17–60:9, 160:12–161:2.

20. Admitted that the Flock Cameras are “generally” located in these areas. Disputed to the extent this paragraph implies that the Flock Cameras are not near residential areas. Even Norfolk's exhibit shows many clusters of cameras either in or very close to residential areas. *See* DX9 at App'x C, Exs. 6a–c (PDF pp.59–61).

21. Admitted. NPD also located the cameras to prevent routes around them. PX7 at 51:10–52:5. And NPD considered locations of third parties' Flock cameras as there was “no reason for [NPD] to duplicate efforts by placing a camera at the same locations they placed cameras because they were willing to share the data from their locations with us.” *Id.* at 74:1–19.

22. Admitted.

23. Admitted that NPD has not purchased any Flock hardware products other than the Flock Cameras. It also purchased installation and continues to obtain software and other support services associated with the Flock Cameras. *See* PX9 at -7528, -7534–35.

24. Admitted, but not material. These advanced features are available to NPD for an additional fee. PX7 at 297:21–298:4; PX2 at 86:5–87:4, 100:5–11.

25. Admitted that NPD has access to 43 additional Flock cameras owned by other entities within city limits. *See* PX19.

26. The first two sentences are admitted as of July 1, 2025. The third sentence is admitted. Before July 1, 2025, Norfolk shared with hundreds of entities, including entities outside

of Virginia. PX7 at 151:11–152:1, 157:5–9.

27. The first sentence is a legal assertion not supported by evidence. The second sentence is a characterization that is not material, in any event. *See* Section II(B)(2) below. In addition, the cited document does not address aerial surveillance, *see* DX12, and Norfolk’s CSLI expert had very little experience with ALPR cameras, *see* PX35 at 55:4–57:20, 60:11–16, 73:2–15 (testifying that he received no training on Flock’s system beyond “a short one-hour introduction” Norfolk’s counsel arranged for him with a Flock employee, that he had never reviewed ALPR data, that he had at most seen “two pages” of ALPR images copied into a Word document).

28. The first sentence is admitted. As to the second sentence, the statistics are not disputed, but they are not material. *See* Section II(B)(1) below; PX36 at 16.

29. Disputed but not material. These statistics do not address the “capabilities” of the Flock Cameras. *See* Section II(B)(2) below. That aside, Norfolk’s labor economics expert excluded “a large fraction”—“about half”—of Norfolk’s Flock data from his analysis because those data did not include a license plate with four or more characters, PX34 at 43:16–44:6, 44:22–45:10, even though the Flock Cameras are intended to capture and store data about cars even when they cannot read all or part of a license plate, PX2 at 71:13–20, 74:4–18; PX33 at -2998 (“No plate? No problem.”). He thus did not match captures absent a full license plate match, even if there was a partial license plate match and other Vehicle Fingerprint attributes matched. PX34 at 122:3–125:13. As a result, these statistics say nothing about how often vehicles were “photographed,” just how often the Flock Cameras read a specific set of characters on a license plate.

30. Admitted that Plaintiffs’ primary cars are among “the 5% of vehicles” with the largest number of full license plate matches. The remainder of this paragraph is disputed but not material for the reasons stated in paragraph 29 above. *See also* PX34 at 121:8–18 (Norfolk’s labor

economics expert agreeing that “any images of plaintiffs’ car[s] that were captured but where a full license plate wasn’t captured wouldn’t be within the data that [he was] provided”).

31. Admitted that after July 1, 2025, NPD’s time limit on retaining ALPR data under Virginia law was 21 days, but it was 30 days before July 1, 2025. PX7 at 140:11–13. Norfolk’s Rule 30(b)(6) designee testified that this limit does not apply to downloads of data. *Id.* at 248:3–14. Admitted that the statistics in this paragraph are correct, except that they reflect full license plate matches, not every time Plaintiffs’ primary vehicles were “photographed.” *See* paragraph 29–30 above. This paragraph is otherwise admitted but not material. *See* Section II(B) below.

32. The statistics in this paragraph reflect full license plate matches, not every time Plaintiffs’ vehicles were “photographed.” *See* paragraph 29–30 above. This paragraph is otherwise admitted but not material. *See* Section II(B) below.

33. The statistics in this paragraph reflect full license plate matches, not every time Plaintiffs’ vehicles were “photographed.” *See* paragraph 29–30 above. This paragraph is otherwise admitted but not material. *See* Section II(B) below.

34. Disputed but not material. The Fourth Amendment analysis turns on the capabilities of the Flock Cameras, not what they happened to show about Plaintiffs during the time period for which Defendants produced data. *See* Section II(B)(1) below. And whether Plaintiffs—neither of whom has ever worked in law enforcement—could make inferences or deductions from selected excerpts of Flock data in the few minutes they had to examine them during their depositions is not material. *See* Section II(B)(2) below. In any event, the first clause of the only sentence in this paragraph contains characterizations rather than statements of fact. However, Plaintiffs admit that there are sometimes multiple establishments in the areas around some Flock Cameras, but this is not material. *See id.* The second clause of the sentence makes a sweeping generalization about

nearly 60 pages of deposition testimony, which is disputed because it does not accurately reflect Plaintiffs' testimony. *See* DX14 at 97:4–100:20 (Lee testifying that he believes NPD could use the cameras near his house along with the entire system of cameras to determine where he goes), 130:9–144:15 (testifying that he believes NPD could determine the area where he traveled, that many establishments depicted on Norfolk's demonstratives were no longer at those locations, and that he has never used the Flock system, so he does not know what NPD can determine from it), 178:20–186:21⁴ (testifying that Norfolk's deposition exhibits are incomplete, that many of the establishments in the exhibits no longer exist, and that he believes NPD could infer when he goes to regularly visited locations based on the Flock Cameras), 226:21–231:20 (counsel asking whether, based on a print-out of Flock data that was concededly "a little hard to read," Lee could say where he was on various dates more than four months before, dates for which there was no Flock data), 232:13–240:7 (showing Lee snippets of Flock data for selected days more than four months prior, with Lee able to infer where he traveled for one day but not for seven others, including three days with no Flock data); DX15 at 134:21–151:19 (Crystal testifying that she does not recall where she was more than five months before the deposition, but emphasizing that she does not know what information Flock or NPD can infer).

35. Disputed and not material. The Fourth Amendment analysis turns on the capabilities of the Flock Cameras, not what they happened to show about Plaintiffs during the time period for which Defendants produced data. *See* Section II(B)(1) below. And whether Plaintiffs—neither of whom has ever worked in law enforcement—could make inferences or deductions from selected excerpts of Flock data in the few minutes they had to examine them during their depositions is not material. *See* Section II(B)(2) below.

⁴ Norfolk cites "178:20–186:7-21." It is not clear if it meant to cite this entire range.

a. Crystal testified that she “tries” to “interact” with or visit various relatives between two times per week and every day. DX15 at 35:4–41:13. [REDACTED]

b. As to the first sentence, Lee testified that he frequently goes to many other places within Norfolk but does not “remember everywhere that [he] go[es] all the time” or “keep a list of everywhere that [he] go[es] all the time.” DX14 at 61:4–7; *see also* Doc. 91-2. As to the second sentence, the cited deposition excerpt does not state that “NPD’s Flock cameras did not photograph Mr. Schmidt’s vehicles in the vicinity of these [three] locations each week when Mr. Schmidt says he generally visited them.” *See* DX14 at 226:21–231:20 (counsel asking whether, based on a print-out of Flock data that was concededly “a little hard to read,” Lee could say where he was on various dates more than four months before, for which there was no Flock data). As to the third sentence, Lee agreed that he would not pass a camera along the routes to two locations; for the other location, he testified that the Flock Cameras would show the area he visited. DX14 at 170:19–173:21, 184:14–186:21.

36. Admitted. The Fourth Amendment also regulates NPD’s use of the Flock Cameras.

37. Admitted.

38. The first sentence is admitted. The remaining sentences (including the subparagraphs and footnote 6) are legal characterizations, not facts. Footnote 7 is wrong and not material. After multiple senators, the Institute for Justice, and many other groups voiced opposition to an earlier version of the bill, a majority of the Virginia Senate Courts of Justice Committee voted against that version of the bill. *See, e.g.,* Charlotte Rene Woods, *License plate reader bill faces more scrutiny in Virginia Senate*, Virginia Mercury (Feb. 10, 2025), <https://bit.ly/4ngOajz>. The bill

was later passed and signed into law with more “restrictive conditions.”

39. Admitted.

40. Admitted, except that the NPD’s audits “ensure” compliance. NPD’s “audits” just make sure “all the boxes are checked.” PX4 at 98:19–100:19. No one verifies that the case and call-for-service numbers are real and related to the search reason, as that “would be entirely too time consuming” given “the number of entries.” PX7 at 251:20–252:11; *see* PX4 at 100:15–19 (this “would be impossible” because “there are thousands of searches done per week”).

41. Admitted but not material.

42. Admitted but not material. *See* Argument Section I below.

43. Admitted that Plaintiffs are law-abiding citizens who do not intend to engage in any criminal conduct and who are not suspected of wrongdoing. But this paragraph is otherwise not material. *See* Argument Section I below.

ARGUMENT

I. Plaintiffs have standing to challenge Norfolk’s ongoing use of the Flock Cameras to track their movements.

Norfolk’s standing argument is a strawman: Plaintiffs lack standing, it claims, because they cannot show that NPD will ever search their license plates. *See* Def. Br. 15. This argument is hopelessly confused, and it flies in the face of on-point Fourth Circuit precedent.

Start with how Norfolk frames the injury. In assessing standing, a court “must . . . assume that on the merits the plaintiffs would be successful in their claims.” *City of Waukesha v. EPA*, 320 F.3d 228, 235 (D.C. Cir. 2003). Plaintiffs claim Norfolk is violating the Fourth Amendment by tracking their movements with the Flock Cameras, not by searching for their license plates in the Flock system. Yet Norfolk refuses to accept that characterization. It insists “[n]o single photograph could reveal the whole of Plaintiffs’ physical movements,” so Plaintiffs must be challenging “what

NPD *could* learn from querying the Flock system for the photographs of their vehicles in the aggregate.” Def. Br. 15. But that is Norfolk’s *merits* argument. *See id.* at 18–19. To defeat standing, Norfolk must show Plaintiffs’ asserted injury is “purely speculative,” *see id.* at 17, not that they will lose on the merits. Otherwise, “every losing claim would be dismissed for want of standing.” *Initiative & Referendum Inst. v. Walker*, 450 F.3d 1082, 1092 (10th Cir. 2006) (en banc).⁵

In any event, this is the same argument repeatedly rejected in *Leaders of a Beautiful Struggle v. Baltimore Police Department*. 2 F.4th 330 (4th Cir. 2021) (en banc). There, as here, “Defendants contend[ed] that the Plaintiffs’ standing is contingent upon the potential, *future* review of the imagery data.” *Leaders of a Beautiful Struggle v. Balt. Police Dep’t*, 456 F. Supp. 3d 699, 708 (D. Md. 2020). But the district court held that “[t]he collection of imagery data associated with the Plaintiffs is an ‘injury-in-fact’ sufficient to support standing to bring a Fourth Amendment claim.” *Id.* “[I]t matter[ed] not that the [police] may never review the ‘dots’ associated with the[] Plaintiffs.” *Id.* at 709. A Fourth Circuit panel affirmed. *Leaders of a Beautiful Struggle v. Balt. Police Dep’t*, 979 F.3d 219, 225 (4th Cir. 2020). And the en banc court did not disturb that holding. Rather, it considered only whether the case was *moot* since the defendants had ended the program. *See Beautiful Struggle*, 2 F.4th at 336–39. At that point, the plaintiffs no longer sought an injunction against the *collection* of data, but a “narrower” one against accessing the data. *See id.* at 338.⁶ Still, police could “access past movements that were derived only by virtue of *recording* all public

⁵ Norfolk tries to differentiate Flock data by arguing that “[v]ehicle information is aggregated only” when someone searches for it. Def. Br. 15 n.9. This is little more than creative wordplay. The data are “aggregated” in a database. *See Beautiful Struggle*, 2 F.4th at 337–39. That someone might have to click “search” to display all the data on a single page does not matter—after all, in *Beautiful Struggle*, analysts needed to spend hours creating “tracks” just to reconstruct snippets of people’s movements. *See id.* at 334, 345; *id.* at 361 (Wilkinson, J., dissenting).

⁶ In *Carpenter v. United States*, accessing CSLI was the “search” because a private company, not the government, collected the CSLI. *See* 585 U.S. at 300–01, 313–16 (2018).

movements.” *Id.* at 337 (emphasis changed). And that meant “[t]he requisite personal interest that Plaintiffs had at the beginning of the case continue[d] to exist”—that is, the interest in “enjoin[ing] the Defendants from . . . *collecting or accessing* any images.” *Id.* at 335, 337 (emphasis added).

Plaintiffs’ injuries are far from speculative. Lee was captured at least 475 times by the Flock Cameras in less than five months. PX29 at 2 (tbl.1).⁷ And he recently started driving more, so he is likely to be captured even more often. PX31 ¶ 6. Crystal was captured at least 324 times over the same timeframe.⁸ “Whether or not [their] claims prevail on the merits,” Plaintiffs “surely have standing to allege injury from the collection, and maintenance in a government database, of records relating to them.” *Scholl v. Ill. State Police*, 776 F. Supp. 3d 701, 709 (N.D. Ill. 2025); *accord Wikimedia Found. v. NSA*, 857 F.3d 193, 210 (4th Cir. 2017) (“[T]he interception of Wikimedia’s communications is an actual injury that has already occurred.”).

II. Undisputed evidence shows that the Flock Cameras have the capacity to enable deductions from the whole of people’s public movements.

Norfolk’s argument follows from a series of mistaken legal premises. *First*, it insists that the Flock Cameras cannot invade a reasonable expectation of privacy unless they capture the literal “whole” of Plaintiffs’ movements. But what matters under binding precedent is whether the Flock Cameras, used alongside other information, enable “inferences” or “deductions” about routines and patterns. *Second*, Norfolk urges the Court to focus myopically on what the Flock Cameras revealed (or did not reveal) about the Plaintiffs, rather than on the capabilities of the technology. But whether government surveillance is a “search” does not depend on what it turns up; the key

⁷ Although standing “is generally measured at the time of the complaint,” *Equal Access Educ. v. Merten*, 325 F. Supp. 2d 655, 667 (E.D. Va. 2004), Norfolk failed to preserve Flock data from the filing of the complaint to February 19, *see* Doc. 38-2, PageID# 288; Doc. 38-5, PageID# 299–300. Plaintiffs are thus relying on evidence that post-dates the complaint.

⁸ Plaintiffs may have been photographed on other occasions when the Flock Cameras failed to read all or part of their license plates correctly. *See* PX34 at 121:8–18.

question is what the Flock Cameras have the *capacity* to show. *Third*, Norfolk invites the Court to disregard the inferences NPD can draw using the Flock Cameras. Again, binding precedent rejects this frame: the Court must consider not only what the Flock Cameras show, but what they can reveal alongside other information NPD routinely uses.

Correcting these legal errors leads to only one conclusion: the Flock Cameras invade a reasonable expectation of privacy by enabling deductions from the whole of people’s movements.

A. Dragnet surveillance need not capture the literal “whole” of people’s movements to invade a reasonable expectation of privacy.

At the outset, Norfolk’s legal argument takes aim at a strawman. Based on lay witness testimony and out-of-context quotations from a discovery hearing, it insists Plaintiffs are complaining about isolated snapshots of “the visible exterior parts” of their cars. Def. Br. 18.⁹ But “Plaintiffs do not object to what any one [Flock] image reveals,” “they challenge the creation of a retrospective database of everyone’s movements across the city.” *Beautiful Struggle*, 2 F.4th at 345. So Norfolk’s assertion that Plaintiffs have no expectation of privacy in the exterior of their vehicles is beside the point. Plaintiffs are not objecting to an officer’s isolated observation of the “exterior of a car,” *New York v. Class*, 475 U.S. 106, 114 (1986), but to Norfolk’s use of those exterior features to track Plaintiffs over weeks, *see* Doc. 29, PageID# 183–84. Norfolk’s citation of pole camera cases likewise misses the mark. Def. Br. 18–19 & n.10. Plaintiffs’ claims are not about repeated observations at a single location but surveillance of their public movements across the city for weeks at a time. *Cf. Beautiful Struggle*, 2 F.4th at 345–46 (“[E]ven though . . . pole cameras can sometimes reveal intimate information like the AIR program does, that does not mean

⁹ Norfolk cannot claim that it was in the dark about Plaintiffs’ legal theory. It requested an earlier exchange of contention interrogatory responses so that it would “have time to incorporate any responses into [its] summary judgment briefing.” *See* PX37 at 2; PX38 at 2–5; PX39 at 2–5.

the AIR program’s citywide prolonged surveillance campaign must be permissible as well.”).

Norfolk then tries to paint *Carpenter* and *Beautiful Struggle* as one-off decisions that apply only when the government tracks the literal “whole” of someone’s movements. *See* Def. Br. at 19–21. That grossly oversimplifies these watershed cases. As explained below, they “solidified the line between short-term tracking of public movements—akin to what law enforcement could do prior to the digital age—and prolonged tracking that can reveal intimate details through habits and patterns.” *Beautiful Struggle*, 2 F.4th at 341 (cleaned up). Neither requires surveillance to capture the literal whole of someone’s movements, just enough to “enable[] deductions” that “reveal[] more about a person than does any individual trip viewed in isolation.” *Id.* at 342 (citation omitted).

Tracking an individual trip in isolation was always possible, even before the digital age. In *Knotts v. United States*, police used a “beeper” to track a container inside a car moving “from one place to another.” 460 U.S. 276, 278–79, 281 (1983). They had to follow close behind to maintain contact with the beeper and even lost the signal for an hour. *Id.* at 278. Because police could have accomplished the same thing by tailing the suspect—and, indeed, had to tail the suspect to stay in contact with the beeper—this mere “scientific enhancement” violated no expectation of privacy. *See id.* at 285. Still, the Court reserved how it would rule on “dragnet type law enforcement practices” like “twenty-four hour surveillance of any citizen of this country . . . without judicial knowledge or supervision.” *Id.* at 283–84.

The Court took up that question “[t]hree decades later.” *Carpenter*, 585 U.S. at 307. In *United States v. Jones*, five concurring justices agreed that electronic surveillance of a car for weeks “impinges on expectations of privacy.” 565 U.S. 400, 430 (2012) (Alito, J., concurring); *see id.* at 415–17 (Sotomayor, J., concurring). The upshot of these concurrences, the Court later explained, is that “individuals have a reasonable expectation of privacy in the whole of their

physical movements”—“regardless whether those movements were disclosed to the public at large.” *Carpenter*, 585 U.S. at 307, 310. In *Carpenter*, the Court held that even seven days, *id.* at 310 n.3, of “time-stamped data provide an intimate window into a person’s life,” *id.* at 311. “Prior to the digital age,” people reasonably expected that location tracking was effectively impossible for more than “a brief stretch.” *Id.* at 310. But technology has made long-term tracking possible “[w]ith just the click of a button . . . at practically no expense.” *Id.* at 311. “[T]he retrospective quality of the data” meant that “this newfound tracking capacity runs against everyone,” not just those suspected of crimes. *Id.* at 312. As a result, obtaining the defendant’s CSLI “invaded [his] reasonable expectation of privacy in the whole of his physical movements.” *Id.* at 313.

“Three years later, [the en banc Fourth Circuit] clarified the scope of *Carpenter*’s holding.” *United States v. Chatrie*, 136 F.4th 100, 138 (4th Cir. 2025) (Richardson, J., concurring). In *Beautiful Struggle*, it explained that surveillance can *contravene* or *invade* an expectation of privacy even when it falls short of the literal “whole” of people’s movements. 2 F.4th at 341–46; *cf. United States v. Moore-Bush*, 36 F.4th 320, 340–41 (1st Cir. 2022) (Barron, J., concurring) (distinguishing “the contravention portion of the *Katz* test” from “the expectation of privacy”). The aerial surveillance there captured only uncovered, outdoor areas during the daytime, “weather permitting.” 2 F.4th at 334. That meant “blurred dots or blobs” in “shorter snippets of several hours or less,” which could be reconstructed through a “labor-intensive process.” *Id.* at 334, 342, 345.

Still, “*Carpenter* applie[d] squarely.” *Id.* at 341. Most surveillance technologies have “gaps in their coverage.” *Id.* at 342. “The GPS data in *Jones* only tracked driving, in a specific car,” and “[t]he raw CSLI in *Carpenter*” placed the defendant “within a wedge-shaped sector ranging from one-eighth to four square miles.” *Id.* at 342–43 (citation omitted). But these gaps did not matter because “inference [does not] insulate a search.” *Id.* at 345. The Fourth Circuit therefore

“consider[ed] not only the raw data, but what that data can reveal.” *Id.* at 344. Location data are inherently revealing because people “follow[] a relatively habitual pattern.” *Id.* at 343. “[M]any people start and end most days at home,” so “identity is easy to deduce from just a few random points of an individual’s movements.” *Id.* at 343–44 & nn.10–11. Beyond those commonsense inferences, police can fill gaps in the data using “the context of specific investigations,” “publicly available information[,] and, even more valuably, their own information systems.” *Id.* at 344. So when “pixels” disappeared into buildings or at sunset, police could “at least sometimes” turn to inference, “other available information,” and “context clues” to pick up the track. *Id.* at 343.

In other words, even though the aerial surveillance alone did not reveal the literal “whole” of people’s movements, it still “enable[d] deductions from the whole of individuals’ movements.” *Id.* at 345. That put it outside the ambit of conventional surveillance technologies. It was not “some discrete [surveillance] operation,” but “the creation of a retrospective database of everyone’s movements across the city.” *Id.* Despite its gaps, the surveillance “transcend[ed] mere augmentation of ordinary police capabilities” by allowing police to “travel back in time to observe a target’s movements, forwards and backwards.” *Id.* at 341, 345.

Beautiful Struggle thus forecloses Norfolk’s argument that surveillance of public movements is not a “search” unless it captures the “equivalent” of the “whole of [people’s] physical movements.” Def. Br. 21.¹⁰ Instead, what matters is whether the surveillance “transcends mere augmentation of ordinary police capabilities” by “enabl[ing] deductions from the whole of individuals’ movements.” *Beautiful Struggle*, 2 F.4th at 345.

¹⁰ Norfolk relies on *McGregor v. United States* for this argument. 2025 WL 2550533 (E.D. Va. Sep. 4, 2025) (Davis, J.). But in that case, the Court merely rejected a pro se habeas petitioner’s procedurally defaulted claim that a prosecutor committed misconduct by not disclosing that police had “us[ed] an LPR database to locate his car in a single location on a single day.” *Id.* at *10.

B. Norfolk’s use of the Flock Cameras is a Fourth Amendment search.

Norfolk argues that Plaintiffs have no evidence “that NPD’s Flock cameras track the whole of their movements.” *See* Def. Br. 23–30. But its arguments ignore the *capabilities* of NPD’s system of Flock Cameras and disregard NPD’s ability to leverage Flock data for inferences.

1. Undisputed evidence shows that the Flock Cameras are capable of tracking people’s long-term movements.

Norfolk frames most of its argument around what the Flock Cameras revealed about Lee and Crystal. That narrow framing crops out what really matters: the capabilities of the technology.

To determine whether use of a surveillance technology is a Fourth Amendment search, the Court must consider “what [the] technology had the *capacity* to reveal, not what it *actually* revealed in the search at issue.” *Chatrie*, 136 F.4th at 150 (Berner, J., concurring); *accord id.* at 123 n.8 (Wynn, J., concurring); *United States v. Smith*, 110 F.4th 817, 834 (5th Cir. 2024). That principle comes from *Kyllo v. United States*, where police scanned a house with a thermal imager for “a few minutes” “at 3:20 a.m.” and inferred that the owner was growing marijuana. 533 U.S. at 29–30. That would not have been a search if all that mattered was what the technology *actually* revealed because “there is no reasonable expectation of privacy in contraband”—even in the home. *United States v. Johnson*, 148 F.4th 287, 292–93 (4th Cir. 2025). But because thermal imaging also “*might* disclose, for example, at what hour each night the lady of the house takes her daily sauna and bath,” it was a search. *Kyllo*, 533 U.S. at 38 (emphasis added). Likewise, in *Carpenter*, it was irrelevant that the CSLI did not even place the defendant at the crime scene, *see* 585 U.S. at 312, because of what it had the *capacity* to reveal, *see id.* at 310–13. So too in *Beautiful Struggle*: Even though there was no record evidence that the surveillance successfully tracked anyone across multiple days, there was evidence that it had such “*capabilities*.” 2 F.4th at 343 n.9 (emphasis added). And those capabilities were key because the plaintiffs were “challeng[ing] the creation of

a retrospective database of everyone’s movements across the city,” not “claim[ing] a privacy invasion related solely to being photographed.” *Id.* at 345.

The only record evidence of the Flock Cameras’ capabilities—the question that actually matters here—show that they enable extensive surveillance across Norfolk. To evaluate the overall capacity of the system, Plaintiffs’ expert, Dr. Higdon-Topaz, simulated more than 15,000 routes within Norfolk. PX24 at 16–17, 26. To do so, he used Hampton Roads Transportation Planning Authority data, Federal Highway Administration data, Norfolk’s own zoning data, and a widely used commercial routing application. *Id.* at 8–10, 14–17. With these sources, he created routes with known starting and ending points modeled on real world data and empirically validated assumptions. *Id.* He then assessed whether the routes passed a camera facing in the same direction of travel. *Id.* at 18–19.¹¹ His analysis showed that about 78 percent of trips passed at least one camera, and about 55 percent are “binary reconstructible,” meaning they passed at least two cameras. *Id.* at 25, 27. Some routes could be reconstructed almost entirely based on the Flock Cameras. *Id.* at 30 (showing over 25% of routes were at least 70% reconstructible). In some areas of Norfolk, virtually the entirety of the average route was reconstructible. *Id.* at 31. This portion of Dr. Higdon-Topaz’s analysis only considered routes in isolation. But people make 24 to 28 car trips per week on average, many of which are habitual. *Id.* at 34; *cf. Beautiful Struggle*, 2 F.4th at 343. Based on his analysis, the median cumulative probability that one or more of these unique routes will be reconstructible is 99.4% across areas within the city. PX24 at 34–35.

Norfolk dismisses this analysis for several reasons. *First*, it faults Dr. Higdon-Topaz for creating simulated routes with fixed starting and ending points. Def. Br. 27. But use of these types

¹¹ This was a conservative assumption because the Flock Cameras often capture cars from the front, as well. PX2 at 123:4–11, 124:8–17.

of simulations is a “standard and widely utilized scientific practice.” PX36 at 3. Simulation “uses a target with known features so the [Flock Cameras’] capability can be measured precisely.” *Id.* at 4 (comparing this to using a known sample to assess the precision of a microscope). And this analysis simply quantifies the types of thought experiments courts routinely use to analyze the capabilities of surveillance technology. *Cf., e.g., Beautiful Struggle*, 2 F.4th at 343 (hypothetical of tracking a person from a crime scene to their home); *Kyllo*, 533 U.S. at 38 (hypothetical lady of the house taking her daily bath). **Second**, Norfolk criticizes Dr. Higdon-Topaz’s routing assumption. Def. Br. 27–28. In doing so, it misstates the assumption: Dr. Higdon-Topaz leverages a widely-used routing application that “accounts for realistic driving factors” and “incorporate[es] assumptions about driver behavior.” PX24 at 16–17, 47; PX36 at 5–6. Given the number and variety of routes, there is no reason to believe that different routing assumptions would meaningfully change Dr. Higdon-Topaz’s results. PX36 at 5–6; DX19 at 163:13–18 (“[P]art of the power of a large simulation[] is that small amounts of variability shouldn’t change results . . .”). **Third**, Norfolk claims Dr. Higdon-Topaz’s analysis demonstrates that the Flock Cameras cannot track the whole of people’s movements because some routes are either not reconstructible or only minimally reconstructible. Def. Br. 28. But that glass-half-empty framing turns the analysis on its head. *Beautiful Struggle* focused on the *capability* of the aerial surveillance to “*at least sometimes*” track people over multiple days, 2 F.4th at 343 & n.9 (emphasis added), even though it typically captured only daytime “snippets of several hours or less” (if that), *see id.* at 342.

For its part, Norfolk offers no assessment of the Flock Cameras’ capabilities, just a series of irrelevant statistics that dilute and obscure those capabilities.

Norfolk starts by claiming that the Flock Cameras “cover” only a small portion of Norfolk and its roads. Def. Br. 24. These raw statistics, however, say nothing about the Flock Cameras’

surveillance capabilities. *See* PX36 at 15–16. Cars can only drive on roads, PX34 at 90:2–12, and that leaves only so many options for where people can drive, *see* PX36 at 16. Norfolk’s labor economics expert conceded that consecutive captures can show that a car “basically went from A to B.” PX34 at 140:13–22; *see also* Doc. 108, PageID# 1551–52 & n.3 (examples of NPD and Flock both making similar inferences from sequential Flock captures). Although Norfolk compares these statistics to the 90% of the city captured in *Beautiful Struggle*, Def. Br. 24, that comparison elides that the aerial surveillance could not see through buildings or other coverings, *see Beautiful Struggle*, 2 F.4th at 341, 345. And people do not choose roads randomly. The Flock Cameras are concentrated in high-traffic areas and on arterial roads, where most people drive, but the raw statistic of linear roadway “covered” does not account for traffic patterns. PX36 at 16. Even if there were a Flock Camera on every street corner, that would still cover only a tiny fraction of linear roadway in Norfolk. *Cf.* PX34 at 88:4–89:4 (Norfolk’s labor economics expert refusing to answer this question); PX35 at 122:5–123:13 (Norfolk’s CSLI expert testifying that his opinions would not change “if there were a camera at every intersection” or “street corner”).

Next, Norfolk argues that the Flock Cameras “photograph most vehicles” infrequently. Def. Br. 25. But the evidence does not show that. To reach that conclusion, Norfolk’s labor economics expert discarded all data without a license plate of four characters or more, PX34 at 129:6–14— even though a key Flock feature is the ability to track down cars with no license plate, PX2 at 71:13–20; PX33 at -2998. That means he ignored “*about half*” of Norfolk’s Flock Data. PX34 at 44:16–45:14 (emphasis added). He also made no effort to match partial and full license plates, PX34 at 122:3–125:13—even though the ability to search for partial plates is yet another key Flock selling point, PX2 at 74:4–18. And he arbitrarily eliminated consecutive captures on the same camera within one minute, even though he admitted that consecutive captures could show a vehicle

was stopped or caught in traffic. PX34 at 116:19–119:2; PX36 at 14–15.

Beyond those issues, Norfolk’s focus on plates that were read only one to three times misses the point. Like the Flock Cameras, the aerial surveillance in *Beautiful Struggle* did not follow people outside Baltimore. *See* 2 F.4th at 334. Yet, the Fourth Circuit did not focus on all the people who made a one-time trip to the Baltimore Aquarium from outside the city or commercial truck drivers who transited through Baltimore once. It focused on scenarios where the surveillance had the *capability* of tracking a person across multiple days. *See* 2 F.4th at 342–43 & n.9. Norfolk lumps together these one-time visitors and routes that extend outside the city with the routes the Flock Cameras are intended to capture in Norfolk. *See* PX34 at 135:12–18, 136:12–22 (conceding that Norfolk’s Flock data include trips that originated outside of Norfolk, ended outside of Norfolk, or both); PX36 at 16–17 (noting that Dr. Estevez’s and Dr. Higdon-Topaz’s analyses are not comparable for this reason). Those are irrelevant here, just as they were in *Beautiful Struggle*.

Lastly, Norfolk downplays its surveillance of Lee and Crystal, *see* Def. Br. 25, who were each captured by the Flock Cameras hundreds of times in under five months. As explained above, that framing is wrong: what matters is “what [the] technology had the *capacity* to reveal, not what it *actually* revealed in the search at issue.” *Chatrie*, 136 F.4th at 150 (Berner, J., concurring); *see id.* at 123 n.8 (Wynn, J., concurring). Even so, all Norfolk’s statistics show is that Lee and Crystal typically do not spend all their time driving. *See* PX36 at 18 (“[D]rivers average only about 61 minutes behind the wheel daily.”). Calculating the percentage of time between 7:00 a.m. and 9:00 p.m. with consecutive captures thus makes no sense because it includes times when Plaintiffs were not driving. *See id.*¹² Norfolk’s labor economics expert conceded that he could distinguish

¹² Likewise, calculating the average time between consecutive captures, *see* Def. Br. 26, makes no sense, *see* PX36 at 17–18. Suppose a driver is captured twice, fifteen minutes apart on their way to work and then, eight-and-a-half hours later, captured twice, fifteen minutes apart on

consecutive captures that were “part of a single unified trip” from those that “reflect multiple different trips,” yet he made no effort to calculate the average time between captures *during trips*. See PX34 at 199:2–200:4. Lee and Crystal have a reasonable expectation of privacy in their movements in their cars, even if they do not drive all day. See *Beautiful Struggle*, 2 F.4th at 341.

Plaintiffs have shown that the Flock Cameras have the *capacity* to reveal routine, habitual routes across the entire city, and Norfolk’s evidence does not show otherwise.

2. The gaps Norfolk identifies in its Flock data are irrelevant because inference does not insulate a search.

Norfolk’s next legal error is dismissing inference by inviting the Court to focus myopically on what the Flock Cameras “alone” reveal. Def. Br. 24, 29. And it claims Plaintiffs cannot prove a Fourth Amendment violation because they have not shown that the Flock Cameras alone revealed “private” or “intimate” information. See *id.* at 24, 28–30. Again, binding precedent rejects these arguments: the Court must consider not just what the Flock Cameras “alone” reveal, but the inferences or deductions they enable. The undisputed evidence shows that Flock Cameras have the capacity to enable deductions from the whole of people’s movements.

Neither *Carpenter* nor *Beautiful Struggle* evaluated the technology in a vacuum. Like the Flock Cameras, these “datasets . . . had gaps in their coverage, too.” *Beautiful Struggle*, 2 F.4th at 342. In *Carpenter*, the government emphasized that CSLI was “actually as much as 12,500 times less accurate than GPS,” only placed the defendant in “a 3.5 million square-foot to 100 million square-foot area,” and required police to “rely on reasonable inferences or additional evidence . . . to develop proof of a defendant’s movements.” PX40 at 24 (cleaned up); see 585 U.S. at 312. But the Court rejected those arguments because, “*in combination with other information,*” the

their way home. The average time between consecutive captures on a *trip* is fifteen minutes, but the average time overall is three hours $((0.25 + 0.25 + 8.5) \div 3)$.

government “could” still “deduce a detailed log of [his] movements.” *Carpenter*, 585 U.S. at 312 (emphasis added). The surveillance in *Beautiful Struggle* was even more limited: it captured “blurred dots or blobs” in “snippets of several hours of less” during the day. 2 F.4th at 334, 340, 342, 345. As in *Carpenter*, that did not matter because “the surveillance still surpassed ordinary expectations of law enforcement’s capacity and provided *enough* information to deduce details from the whole of individuals’ movements.” *Id.* at 343 (emphasis added).

Even “snippets” of location data collected over weeks or longer are inherently sensitive. *See id.* at 343–45. A court must therefore “consider not only the raw data, but what that data can reveal.” *Id.* at 344. “[M]any people start and end most days at home, following a relatively habitual pattern in between.” *Id.* at 343. Indeed, “people’s movements are so unique and habitual” that “identity is easy to deduce from just a few random points of an individual’s movements.” *Id.* at 343–44.¹³ From there, police can use “context clues,” “publicly available information[,] and, even more valuably, their own data systems” to pick up the trail and fill in gaps. *Id.* at 343–44. To be sure, collating all that information to fill in surveillance gaps requires “some deductive reasoning.” *Id.* at 344. But it is the underlying location data that “enables deductions” by providing “variable location points from which movements can be reconstructed.” *Id.* at 342–43. Considering long-term location data “as just ‘one more investigative tool’ does exactly what the Supreme Court has admonished against; it allows inference to insulate a search.” *Id.* at 345.

Yet that is what Norfolk would have the Court do: consider the Flock data “alone,” Def.

¹³ In a similar vein, the Fifth Circuit held that a federal rule requiring charter-boat owners to “transmit the[ir] vessel’s GPS location ‘at least once per hour’” “appear[ed] to be a search,” and the court had “serious concerns that the GPS requirement violates the Fourth Amendment.” *Mexican Gulf Fishing Co. v. U.S. Dep’t of Com.*, 60 F.4th 956, 962, 967, 970 (5th Cir. 2023).

Br. 24, 29,¹⁴ and ignore what the “data can reveal,” *Beautiful Struggle*, 2 F.4th at 344. With a license plate number, police can identify the likely driver and look up his or her address. *See Sturdivant*, 2025 WL 1633754, at *10; PX7 at 199:8–15; PX6 at 24:4–22.¹⁵ They can use that to easily reconstruct the beginning of most drivers’ days. From there, “just a few random points of an individual’s movements” are incredibly revealing. *Beautiful Struggle*, 2 F.4th at 344. Most drivers choose time-minimizing routes, PX24 at 10, so even a few lines of time- and location-stamped Flock data provide “variable location points from which movements can be reconstructed.” *See Beautiful Struggle*, 2 F.4th at 343; PX27 at 6:13–10:11, 28:22–29:8, 150:9–13 (NPD officer testifying that he reconstructed a person’s route based on three Flock camera hits). Given the number of Flock Cameras, “the absence of detections can be as informative as their presence” by excluding potential routes. PX24 at 37; *see* PX25 at 13–14.¹⁶ Even when people leave their cars, someone examining the Flock data can map out—at least roughly—where the person could have gone between captures. *See, e.g.*, PX24 at 36–38.

As in *Beautiful Struggle*, those deductions do not happen in a vacuum. NPD supplements Flock data with officers’ knowledge, PX2 at 100:18–21; PX25 at 9, thousands of video cameras, PX7 at 306:9–307:11; PX21 at 2–4, and myriad resources routinely used in investigations, PX25 at 9–10; *cf. Beautiful Struggle*, 2 F.4th at 344. Police can look up registration information and, from there, identify a person’s associates, including addresses. PX35 at 65:5–66:15, 157:7–19. “[I]f the tracking of a car is interrupted,” they can turn to other tools. *Beautiful Struggle*, 2 F.4th at

¹⁴ *See also* PX34 at 36:1–37:8, 39:9–13, 93:8–11, 98:4–99:20, 118:17–20, 121:14–18, 181:3–7, 184:6–8 (Norfolk’s labor economics expert testifying that he considered the Flock data “alone” without reviewing Flock images or any other sources of information).

¹⁵ In *Jones*, the car was registered to the defendant’s wife. *See* 565 U.S. at 402, 404 n.2.

¹⁶ *See also* PX27 at 7:1–24, 10:3–11 (NPD officer testifying that defendant’s statements about his “path” were not accurate based on the absence of “any Flock hits” on a specific camera).

344. For instance, after a car passes a Flock Camera, NPD can use that information to pick up the trail on one of its video cameras. *See* PX7 at 305:10–307:11. Just because NPD “need[s] to use additional information, beyond the [Flock data], to deduce [a person’s] movements” does not help Norfolk because *the Flock data* enable those deductions. *See Beautiful Struggle*, 2 F.4th at 345.

Norfolk does not dispute these capabilities; it claims Plaintiffs have no evidence that the Flock Cameras revealed “private” or “intimate” information about their lives. Def. Br. 24, 26–30. Again, that focuses on the results of the search, rather than the technology’s capabilities. *See* Section II(B)(1) above. “A search is a search, even if it happens to disclose nothing” private. *Arizona v. Hicks*, 480 U.S. 321, 325 (1987). Requiring a plaintiff to show that surveillance picked up “intimate details” would be “wrong in principle” and “impractical in application,” since no one can ever “know *in advance* whether” surveillance will pick up “intimate details.” *Kyllo*, 533 U.S. at 38–39. Binding precedent already holds that “prolonged tracking . . . *can* reveal intimate details through habits and patterns.” *Beautiful Struggle*, 2 F.4th at 341 (emphasis added). Because “the source of the underlying location data is entirely irrelevant,” *id.* at 343–44, that is not a proposition plaintiffs need to reestablish in every successive case. As a matter of law, “the insight provided by locational data into individuals’ private lives is profound.” *Id.* at 344 n.11 (cleaned up) (citation omitted). At bottom, Norfolk just disagrees with this precedent. *Compare id.* at 344 (“[I]dentity is easy to deduce from just a few random points of an individual’s movements.”), *with* PX34 at 126:19–127:2 (Norfolk’s labor economist: “Q . . . Do you agree that identity is easy to deduce from just a few random points of location data? . . . A . . . [A]s a general proposition, I’ll say no.”).

And Plaintiffs have shown *how* NPD officers could use Flock data to make inferences about Plaintiffs’ private routines. For instance, [REDACTED]

[REDACTED]

[REDACTED]. Defendants may not find those insights particularly exciting, but they are the same types of “places, people, amusements, and chores that make up” most ordinary people’s “private routine[s].” *Beautiful Struggle*, 2 F.4th at 345 (citation omitted). Norfolk complains that Plaintiffs’ experts already knew some limited information about Plaintiffs, Def. Br. 28–29, but real-world investigators could have the same information, if not more. *See Beautiful Struggle*, 2 F.4th at 344–45; DX13 at 171:18–172:6. For instance, an officer could look up where Plaintiffs’ relatives live in a public records search. PX35 at 65:5–66:15; 157:8–21. And although Plaintiffs did not try to identify every conceivable routine the Flock Cameras captured over roughly five months,¹⁷ no precedent requires such evidence because what matters is the *capacity* of the technology. *See* Section II(B)(1) above.

Still, Norfolk dismisses those inferences because they do not exclude all other possibilities. An inference is not speculation just because the facts may be consistent with other possibilities. *See United States v. Cortez*, 449 U.S. 411, 418 (1981). Drawing inferences from Flock data is no more speculative than inferring when “the lady of the house takes her daily sauna and bath” from thermal readings. *See Kyllo*, 533 U.S. at 38. Surveillance need not “produce[] an 8-by-10 Kodak glossy that needs no analysis.” *Id.* at 36. Even the CSLI in *Carpenter* only placed the defendant in areas up to four square miles. *Carpenter*, 585 U.S. at 312; *cf. United States v. Morgan*, 292 F. Supp. 3d 475, 486 (D.D.C. 2018) (permitting the same CSLI expert Norfolk retained to testify “only to defendant’s and the alleged victim’s possible location within a general area of coverage, as opposed

¹⁷ *See* DX13 at 165:18–22; 167:12–14, 168:7–10, 171:2–3, 173:19–174:4, 208:10–13 (Plaintiffs’ expert confirming that he was providing examples, not creating an exhaustive list).

to an exact location”), *aff’d*, 45 F.4th 192 (D.C. Cir. 2022).¹⁸ No court has ever required the “hard certainties” that Norfolk demands to credit officers’ “inferences and deductions.” *Cortez*, 449 U.S. at 418; *cf.* DX13 at 148:1–4 (Plaintiffs’ expert: “Essentially pretty much all the work I do . . . as a crime analyst, it’s, like, probabilistic. It’s never a hundred percent certain.”)

Norfolk’s critiques also fail on their own terms. [REDACTED]

[REDACTED] Norfolk’s sole law enforcement expert dismissed all inference as “speculation purely.” PX35 at 158:11–159:8. And he offered no reasonable alternative explanation. Instead, he just speculated that, [REDACTED]

[REDACTED] Norfolk’s labor economics expert also criticized these inferences. PX34 at 25:15–26:19, 146:11–149:8. But law enforcement inferences are “not [weighed] in terms of library analysis by scholars.” *Cortez*, 449 U.S. at 418; *see* DX13 at 146:8–148:6.¹⁹ Experienced officers draw “inferences and deductions that might well elude an untrained person.” *United States v. Johnson*, 599 F.3d 339, 343 (4th Cir. 2010) (citation omitted). The Supreme “Court’s insistence on this point has been nothing less than overwhelming.” *Id.* Norfolk’s insistence on nothing short of certainty flouts decades of precedent. *See id.*²⁰

¹⁸ Just like Norfolk, *see* Def. Br. 10, the government in *Carpenter* argued that “the relevant tower sectors” encompassed “about 1000 buildings, including hundreds of homes, various commercial establishments,” and numerous other locations, PX40 at 25. Indeed, the governments’ arguments and demonstratives in *Carpenter* are virtually indistinguishable from Norfolk’s, except that Norfolk’s show far fewer “establishments” near Flock captures. *Compare, e.g.*, PX40 at 26 (fig. 2), *with* DX9 at PDF pp.70, 72, 79 (exs. 12, 14, 21).

¹⁹ Not to mention, when pressed to explain what economic or statistical concepts he applied, the best Norfolk’s labor economics expert could offer was “just looking at what I see in the data,” “working with the data,” and “getting your hands in the data.” PX34 at 156:9–157:3. That “devalue[s] in the field of law enforcement” the type of “experience [people] extol in other walks of life.” *United States v. Johnson*, 599 F.3d 339, 343 (4th Cir. 2010).

²⁰ Norfolk’s analogy to an officer seeing a car “with the naked eye” and inferring “the driver was in a general area,” Def. Br. 30, is “quite irrelevant,” *Kyllo*, 533 U.S. at 35 n.2. First, “[t]he fact

C. Past cases rejecting challenges to ALPRs are non-binding and distinguishable.

Norfolk argues that the Court should defer to (non-binding) cases that, it says, held that using ALPRs is not a Fourth Amendment search. Def. Br. 21–23. But these cases—decided on their unique facts—did not categorically reject any future challenge to ALPR surveillance. *See, e.g., United States v. Yang*, 958 F.3d 851, 863–64 (9th Cir. 2020) (Bea, J., concurring); *United States v. Sturdivant*, 2025 WL 1633754, at *11 (N.D. Ohio June 9, 2025). In any event, these cases are distinguishable. Almost all were criminal cases, where discovery is extremely limited. *See, e.g., United States v. Dugan*, 136 F.4th 162, 170–71 (4th Cir. 2025). Thus, the defendants framed their challenges around limited past captures of *their own* cars. But the key question is what the technology had the capacity to reveal. *See* Section I(B)(1) above. Even then, “compared to [all of the] other cases involving ALPR, the record here shows a qualitative leap forward.” *Cf. Sturdivant*, 2025 WL 1633754, at *11 (26 captures). Lee and Crystal were captured at least 475 times and 324 times, respectively. PX29, tbl.1. That is many orders of magnitude beyond Defendants’ cases.²¹

that equivalent information could sometimes be obtained by other means does not make lawful the use of means that violate the Fourth Amendment.” *Id.* Second, no officer could know based on an isolated observation where and when a car was previously seen (or, just as tellingly, not seen) at 176 locations across Norfolk. *Cf. Jones*, 565 U.S. at 420 & n.3 (Alito, J., concurring).

²¹ *See United States v. Yang*, 958 F.3d 851, 853–57 (9th Cir. 2020) (one capture on one day); *United States v. Brown*, 2025 WL 2444596, at *2–3 (W.D. Okla. Aug. 25, 2025) (two captures over two weeks); *United States v. Ramirez Acosta*, 2025 WL 2427700, at *1 (N.D. Okla. Aug. 22, 2025) (one hot list alert); *United States v. Slaybaugh*, 2025 WL 2123781, at *1 (M.D. Ala. July 29, 2025) (72 captures over three weeks); *United States v. Jackson*, 2025 WL 1530574, at *4 (D. Kan. May 29, 2025) (nine captures over four hours); *United States v. Griffin*, 2025 WL 1474679, at *1–2 (S.D. Ind. May 22, 2025) (two captures over five months); *United States v. Rubin*, 556 F. Supp. 3d 1123, 1125 (N.D. Cal. 2021) (one capture, unclear time period); *United States v. Salcido–Gonzalez*, 2024 WL 2305478, at *3–4 (D. Utah May 21, 2024) (two captures over three days); *United States v. Porter*, 2022 WL 124563, at *1 (N.D. Ill. Jan. 13, 2022) (two captures over eight weeks); *United States v. Jiles*, 2024 WL 891956, at *2 (D. Neb. Feb. 29, 2024) (two captures over three days); *United States v. James*, 2023 WL 3370421, at *1 & n.1 (W.D. La. Jan. 30, 2023) (one capture, unclear time period); *United States v. Graham*, 2022 WL 4132488, at *1–2 (D.N.J. Sept. 12, 2022), *aff’d*, 2025 WL 342190 (3d Cir. Jan. 30, 2025) (unclear number of captures on one day); *United States v. Cooper*, 2025 WL 35035, at *4–6 (E.D. La. Jan. 6, 2025) (unclear number of

Norfolk relies heavily on *United States v. Martin*, but that case is distinguishable for the same reasons. 753 F. Supp. 3d 454, 476 (E.D. Va. 2024). There were just 66 cameras in Richmond at the time and another 122 in a broader area of two cities and three counties. *See id.* at 458. Even by Norfolk’s own (irrelevant) metric of “coverage” per mile of linear road, the Flock Cameras have about 83% more coverage than the Flock cameras in Richmond. *See* DX9 at 12 (fig. 2).²² The evidence at the *Martin* suppression hearing amounted to “three individual snapshots of [the defendant’s] brief location at specific times” over 30 days. *Id.* at 473. Unlike here, there was no evidence about the overall capabilities of the Flock camera system in the Richmond area. *See id.* at 472–75. Although the *Martin* court denied the motion to suppress, it was careful not to make any broader pronouncement: “Today’s ruling is limited to the facts of this case as they are at the time of this ruling, including the limited number of Flock cameras in the Richmond area and the limited number of pictures taken of the exterior of Martin’s vehicle.” *Id.* at 476; *accord Scholl*, 776 F. Supp. 3d at 721 (the court was “not decid[ing] whether a more extensive network of ALPRs might infringe a reasonable expectation of privacy”). This is a different case with a different record.

CONCLUSION

For these reasons, the Court should deny Norfolk’s motion for summary judgment.

captures over 180 days); *United States v. Brown*, 2021 WL 4963602, at *2 (N.D. Ill. Oct. 26, 2021) (15 captures over about 2.5 months); *United States v. Bowers*, 2021 WL 4775977, at *1 (W.D. Pa. Oct. 11, 2021) (106 captures over about 5.5 months); *United States v. Toombs*, 671 F. Supp. 3d 1329, 1336 (N.D. Ala. 2023) (one capture on one day); *Commw. v. Roberson*, 113 Va. Cir. 565, 2024 WL 5454674, at *6 (2024) (three captures over about two hours); *Commw. v. Robinson*, 113 Va. Cir. 494, 2024 WL 5454692, at *2 (2024) (one capture over several hours); *Commw. v. Adams*, 113 Va. Cir. 505, 2024 WL 5657114, at *1 (2024) (four captures over 26 hours); *Uhunmwangho v. State*, 2020 WL 1442640, at *2 (Tex. App. Mar. 25, 2020) (one capture over 20 hours); *State v. Sidor*, 558 P.3d 621, 624 (Ariz. Ct. App. 2024) (four captures over three months); *Commw. v. Watkins*, 304 A.3d 364, 367, 373 (Pa. Super. Ct. 2023) (unclear number of captures over months).

²² Norfolk’s calculations use the number of cameras at the time of the suppression hearing in *Martin* (“97 to 100”) rather than the time of the search (“66”). *See* 753 F. Supp. 3d at 458 & n.4.

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CERTIFICATE OF SERVICE

I hereby certify that on September 29, 2025, I caused a copy of the foregoing document to be served on all counsel of record for Defendants.

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