NEW AGE TRACKING TECHNOLOGIES IN
THE POST-UNITED STATES V. JONES
ENVIRONMENT: THE NEED FOR
MODEL LEGISLATION

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ABSTRACT

Since the 1980’s, police have used tracking technologies to obtain valuable investigatory information on the movements of criminal suspects. Recent developments in GPS technology and the ongoing emergence of drone-based tracking technology allow for constant, twenty-four hour, seven-day-a-week surveillance of individuals, providing pinpoint accuracy of their every movement. This intimate level of data collection, when obtained without a warrant, pushes Fourth Amendment reasonable search principles to the limit. In the recent case of United States v. Jones (2012), two dueling theories, property rights and Katz’s reasonable expectation of privacy, were advanced for testing the reasonableness of tracking searches. The narrower property rights theory prevailed in Jones, but did so with four Justices openly favoring the Katz test and a fifth Justice suggesting that, in a future case not involving property rights, she would also apply the Katz test. This Article examines how Jones has been implemented by lower courts and looks at both theories as they apply to existing technologies and technologies currently in development, highlighting the weaknesses and strengths of the Jones ruling. Based on this analysis, the Article concludes that the Katz reasonableness test is better prepared to handle the stress placed on privacy and the Fourth Amendment protection against unreasonable searches posed by new age technology. From this conclusion, the Article proposes a comprehensive model legislative solution, based on the analysis of Jones and existing state statutes, to regulate police use of tracking technology and to establish a warrant process for tracking searches.

† The author gives special thanks to Professor Barbara Armacost for her help in shaping the topic and for providing direction for this Article as well as for valuable stylistic suggestions and to the Honorable Justice Stephen J. Markman for his mentoring influence that was of considerable importance in helping the author to refine his writing and editing skills, which serve as an essential foundation for any article.
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I. INTRODUCTION

In *United States v. Jones*, the United States Supreme Court held that the government conducts an unlawful search under the Fourth Amendment when, without a warrant, it attaches a Global Positioning System ("GPS") device to a vehicle and monitors that vehicle's movements through the device. Factually, *Jones* featured a scenario where the government, outside the purview of the warrant it possessed, attached a GPS device to the underside of Jones's vehicle and monitored his movements on a twenty-four hour, seven-day-a-week basis for four weeks. Although the use of electronic tracking devices without a warrant previously received the Court's blessing, *United States v. Knotts* and *United States v. Karo* featured less sophisticated technology that was neither attached to property owned by the defendant at the time of installation nor used for the prolonged and continuous period of time at issue in *Jones*. These distinguishing factors resulted in a unanimous panel opinion from the United States Court of Appeals for the District of Columbia Circuit finding a Fourth Amendment violation followed by a divided D.C. Circuit falling one vote short of granting rehearing en banc. On appeal, a 9-0 United States Supreme Court opinion affirmed the judgment—although not necessarily the reasoning—of the D.C. Circuit panel.

In reaching its unanimous outcome, the United States Supreme Court confronted dueling rationales for finding the GPS-based search unreasonable and violative of the Fourth Amendment: 1) prolonged, continual surveillance fails the prevailing reasonable expectation of privacy test evolving from *Katz v. United States*, or 2) per a property rights/trespass theory of Fourth Amendment law, the physical placement of the GPS device on the defendant's car constitutes a trespass that, while not rising to the level of a seizure, makes the ensuing search unreasonable. Although the independent role of property rights in Fourth Amendment unreasonable search analyses was thought long dead, the narrowest of majorities—with Justice Sotomayor of the majority writing a concurrence strongly resembling

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8. See William C. Heffernan, *Property, Privacy, and the Fourth Amendment*, 60 Brook. L. Rev. 633, 650-51 (1994) (detailing that post-*Katz* "property interests enjoy no special protection as such" and that circuit courts had given "little weight to property [interests] as an independent factor").
Justice Alito's concurring reasoning—resurrected the violation of property rights as a basis for holding a warrantless search unconstitutional.

Commentators viewed *Jones* as a major change in the landscape of Fourth Amendment law, giving defendants a new avenue to challenge a multitude of searches frequently employed to yield fruitful evidence in criminal investigations.9 This Article advances an alternate view regarding the lasting significance of *Jones*. Unexpected as the return to a property rights focus may be, the lasting practical limitations placed on tracking searches imposed by *Jones* appear far more questionable. This Article asserts that *Jones* presents the narrowest possible rationale for excluding the evidence from the GPS search. This is a product of two factors. First, a defendant's ability to prevail on a motion to exclude pursuant to *Jones* is limited by the traditional doctrines of standing and officer reasonableness, which foreclose the remedy of exclusion unless the defendant demonstrates a sufficient personal interest in the item searched and the deterrent rationale of the exclusionary rule is furthered. Second, as technology evolves, the property rights rationale will be inapplicable to future tracking-based searches. Combining these two factors, absent a holding that prolonged or intimate technology-based searches violate the reasonable expectation of privacy test, the traditional limitations on gaining exclusion increase and intensify when sophisticated technology is at issue. For these reasons, this Article advances an argument that urges either the adoption of the reasoning propounded by Justice Alito's concurrence for holding tracking searches unreasonable or the passage of legislation regulating governmental usage of existing and future tracking technologies.

To provide a sufficient basis of understanding, Part I of this Article presents an overview of how tracking technology operates. An initial focus is placed on previously constitutionally-approved technology from *Knotts* and *Karo*. This is followed by a demonstration of how existing technology, like that used in *Jones*, operates and how next generation technology will be employed in tracking and recording the movements of suspects. This Article emphasizes the advantages of new installation-free technologies over both installation-based tracking devices and physical police surveillance. Part II analyzes the opin-

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9. See Fabio Arcila, Jr., GPS Tracking Out Of Fourth Amendment Dead Ends: *United States v. Jones and the Katz Conundrum*, 91 N.C. L. Rev. 1, 5-6 (2012) (noting that *Jones* has the probability to be the most meaningful decision since *Katz*, offering fortuity to discuss the privacy model therein with additional implications for the future of the third-party doctrine and privacy over information shared with corporations operating telecommunication devices); Clifford S. Fishman & Anne T. McKenna, Wiretapping & Eavesdropping: Surveillance in the Internet Age § 29:37 (3d ed. 2007).
ions from Jones. Part III shifts to assessing how courts interpreted Jones and how issues of standing and police reasonableness stifle defendants' ability to successfully use Jones. From there the Article argues that the majority rationale of Jones presents a contradiction and provides ineffective protection, producing the conclusion that the Alito rationale should become the prevailing rule and new legislation should be adopted.

II. TRACKING TECHNOLOGIES: SCIENTIFIC OVERVIEW OF PAST, PRESENT, AND FUTURISTIC NON-PERSONNEL-BASED SURVEILLANCE

A. 1980's Pre-GPS Technology Used in the Knotts and Karo Era

The United States Supreme Court in United States v. Knotts opened its opinion with this description of the technology then-employed by police: “A beeper is a radio transmitter, usually battery operated, which emits periodic signals that can be picked up by a radio receiver.” Physical installation of the beeper device usually entailed either placing a device within the object to be tracked or attaching the beeper device via small, high-power magnets secured to the exterior of the object/vehicle to be tracked. The beepers worked by emitting an intermittent signal picked up by pre-calibrated, matching radio receiver(s), with the signal's direction and strength giving police a general idea of the beeper's location. This beeper technology allowed police to track and surveil suspects from greater distances, such that tracking could be conducted without police keeping the suspect within their sightlines. However, should the tracking officer with the receiver fall a sufficient distance behind the beeper, the signal is lost. While the beeper continues to emit a signal even after the signal is lost, regaining the beeper's signal on the police radio receiver required conducting something resembling a coordinated quadrant

14. See Campbell, 759 P.2d at 1042 (describing the process used by police to track a suspect when employing beeper technologies).
search of places where the suspect was likely to be, based on other information not immediately produced by the beeper.\textsuperscript{16}

To compose a complete picture of the suspect's/object's movements, police must constantly follow the beeper's signal. Beeper technology sophistication constrained these efforts. The beeper's reliability and range vary, with a typical ground-to-ground signal in an uninhabited area of two to four miles.\textsuperscript{17} Where police primarily use air surveillance or resort to such because ground surveillance lost contact with the beeper signal, the beeper's signal can be detected within a radius of twenty miles.\textsuperscript{18} The congested heavily-trafficked nature of urban areas, like the D.C. metro area in United States v. Jones,\textsuperscript{19} substantially increases the risk of losing a lock on the suspect's position via beeper technology. A beeper's range is significantly compromised in cities where, because of interference, the receiver's efficacy may be limited to an area within a two-block radius of the beeper.\textsuperscript{20} Compiling by-the-second data on an individual's/object's location via a beeper in a city is, therefore, virtually impossible. Thus why beeper technology "complement[s] visual surveillance," rather than serving as a substitute for visual surveillance.\textsuperscript{21}

Shortcomings of the beeper device prevented it from replacing the physical presence of in-the-field officers when conducting investigations. Beeper devices lack the capacity to triangulate an individual's location with pinpoint accuracy, instead only offering more generalized locational data. The United States Supreme Court's decision in United States v. Karo\textsuperscript{22} demonstrated this. There, police could not identify which locker, in a large storage facility, contained the beeper.\textsuperscript{23} Where police lack a specific degree of certainty regarding the exact location of the beeper, absent additional information from a secondary source like in Karo,\textsuperscript{24} police often find themselves unable to

\textsuperscript{16} See Knotts, 460 U.S. at 278 (detailing that during the apprehension of an evasive suspect across state lines the beeper signal was lost and was then regained approximately one hour later by way of a helicopter-based search for the beeper's signal).

\textsuperscript{17} Clifford S. Fishman, Electronic Tracking Devices and the Fourth Amendment: Knotts, Karo, and the Questions Still Unanswered, 34 CATH. U. L. REV. 277, 282 n.7 (1985) (citing Reply Brief for United States at 8 n.6, Karo, 468 U.S. 705).

\textsuperscript{18} Id.

\textsuperscript{19} 132 S. Ct. 945 (2012).

\textsuperscript{20} Fishman, supra note 17.

\textsuperscript{21} Id. at 282.

\textsuperscript{22} 468 U.S. 705 (1984).

\textsuperscript{23} See Karo, 468 U.S. at 708 (after losing track of the beeper's location, police relocated beeper signal in a commercial storage facility but the beeper lacked locational specificity to permit police to determine which storage unit housed the container police were tracking by way of the beeper).

\textsuperscript{24} In Karo, because the beeper was traced to a storage facility, the police were able to subpoena the facility's records and match storage unit registration to the suspect. See Karo, 468 U.S. at 708. This match was corroborated when police detected an
meet the specificity location requirement for describing the place to be searched when seeking a warrant.

Three technological limitations of beeper technology produced by-products affecting the costs and benefits of using beeper technology. First, the specificity of data revealed by beepers was limited as was the range of the beeper signal. 25 Without continuous, pinpoint locational-data, the information revealed by beeper technology provided less benefit to police while imposing greater operational and personnel costs. The range-limited nature of beeper-produced information increased operational costs by necessitating larger police forces in the field to effectively use beeper technology by following suspects at a distance. Second, the durability of the beeper’s energy source was limited. Cases highlight situations where the battery powering the beeper system lasted only one week before it required changing. 26 Third, early GPS devices frequently malfunctioned. This required either installing multiple tracking devices at once to increase the chances of obtaining the desired tracking data 27 or repeat covert interventions by police to repair or replace malfunctioning devices. 28 All of these increased the cost of use to police.

These limitations accompanying and inherent in the original beeper tracking devices restricted authorities’ ability to use tracking technology and acted as a natural pseudo-protection against the most severe Fourth Amendment violations. For instance, the limited battery and inconsistent functional capabilities of beepers required police to periodically reevaluate the need and risk of detection associated with prolonged surveillance. More importantly, the limitation on the projection of the signal necessitating individual in-the-field officers for every surveillance effort placed an automatic check on how frequently police could use beepers given personnel constraints. Logically, it fol-

odor, emanating from the locker, consistent with the smell of the tracked product. See id. Had the beeper signaled police to an apartment complex, had the suspect registered in another name, and/or had the product been odorless, the beeper tracking would have yielded insufficient information to obtain a warrant. See id.


26. See Campbell, 759 P.2d at 1041-42 (noting that the beeper attached to the vehicle followed by police was installed on January 15, 1985 and replaced on January 21, 1985); United States v. Michael, 622 F.2d 744, 746 (5th Cir. 1980) (providing that Government testimony during a suppression hearing indicated that the battery on a beeper tracking device “usually lasts only ten days . . . .”).

27. See United States v. McIver, 186 F.3d 1119, 1123 (9th Cir. 1999) (explaining that the GPS device broke down three days after installation but police were able to track the suspect via a less-sophisticated beeper tracking system that they also installed).

allows that police presumably used beeper technology in situations where police had the greatest degree of need and probable cause and likelihood of detecting criminal activity.

While this left the determination of whether a search was reasonable in the hands of police, a significant deficiency in making a search reasonable under the Fourth Amendment,\(^\text{29}\) multiple pre-\textit{Jones} circuit courts willingly accepted this tacit constraint on the use of tracking technology.\(^\text{30}\) This remained true even in cases presenting obvious trespasses that would now make a search unreasonable per \textit{Jones}.\(^\text{31}\) Modern twenty-first century GPS technology, however, wiped away many of these automatic self-checks, transforming a self-limiting police resource into an unchecked investigatory tool, capturing substantially more detailed and personal information than possible through early unsophisticated GPS technology.

B. \textbf{TWENTY-FIRST CENTURY GPS TECHNOLOGY: ADVANCEMENTS FORCING THE COURT TO TAKE PAUSE}

The January 2004 edition of Police Chief Magazine\(^\text{32}\) describes GPS technology as having a "Big Brother aspect."\(^\text{33}\) GPS technology played a pivotal role in gathering evidence for investigatory and trial purposes including in such high profile criminal cases as Scott Peterson's murder trial.\(^\text{34}\) Originating as a 1973 Cold War military program, GPS technology became operational for low-level military purposes within five years of the program's launch.\(^\text{35}\) By 1983, GPS


\(^{30}\) See United States v. Pineda-Moreno, 591 F.3d 1212 (9th Cir. 2010); United States v. Garcia, 474 F.3d 994 (7th Cir. 2007); McIver, 186 F.3d at 1119; United States v. Butts, 729 F.2d 1514 (5th Cir. 1984).

\(^{31}\) See supra note 30.

\(^{32}\) Police Chief Magazine is a monthly magazine geared toward top law enforcement officials across the country and published by the International Association of Chiefs of Police. It has offices across five continents, with national publications in multiple countries; created the United States Bomb Data Center now run by the FBI; and serves as a consultant to the United Nations.

\(^{33}\) See John S. Ganz, Comment, \textit{It's Already Public: Why Federal Officers Should Not Need Warrants to Use GPS Vehicle Tracking Devices}, 95 J. CRIM. L. & CRIMINOLOGY 1325, 1330 (2005) (noting how a GPS device attached to Scott Peterson's car showed that, on five occasions after his pregnant wife's disappearance and before her body was discovered, he traveled back to a marina where he allegedly dumped her body).

technology became available for non-military applications.\textsuperscript{36} Still maintained and operated by the United States Air Force,\textsuperscript{37} GPS technology, operating on a budget of over $1 billion in fiscal year 2015,\textsuperscript{38} works through a constellation of twenty-seven active satellites.\textsuperscript{39}

On the ground,

GPS vehicular tracking systems consist of three components: (i) a receiver on the target vehicle which calculates the vehicle's location through the use of satellites; (ii) a cellular telephone or other technology which transmits the vehicle's position; and (iii) a computer monitoring device which receives and stores location information.\textsuperscript{40}

GPS devices emit a signal on an ongoing basis, or at regular preset intervals, making constant locational surveillance possible.\textsuperscript{41} The system of satellites triangulates the location of any given GPS device to within a few feet, or in some cases with accuracy to within ten inches, of its position.\textsuperscript{42} Satellites relay this triangulation information to fixed monitoring devices in under a second from when the GPS device emits a signal to the satellite network.\textsuperscript{43}

GPS proves to be an advantageous investigatory tool in that while providing more useful information, GPS tracking simultaneously facilitates efficient use of police resources. The increased reliability and accuracy is pivotal when seeking a search warrant as it provides police with sufficiently specific locational information to meet warrant requirements. Unlike beeper technology, recording mechanisms can be built into GPS technology such that monitoring officers need not document the movements of the suspect by hand in real-time. This provides the secondary advantage of allowing law enforcement to not allocate personnel to constant round-the-clock monitoring while al-


\textsuperscript{37} GPS Overview, GPS.gov, http://www.gps.gov/systems/gps/ (last visited Apr. 9, 2015).


\textsuperscript{39} Space Segment, GPS.gov, http://www.gps.gov/systems/gps/space/ (last visited Apr. 9, 2015).

\textsuperscript{40} State v. Holden, 54 A.3d 1123, 1126 (Del. Super. Ct. 2010).

\textsuperscript{41} Cerullo, \textit{supra} note 33.

\textsuperscript{42} United States v. King, No. 08-cr-008-JDR, 2008 WL 4710744, at *11 (D. Alaska Oct. 24, 2008) (noting that sophisticated GPS technology is accurate to within a location of ten inches); Kristen E. Edmundson, Note, \textit{Global Positioning System Implants: Must Consumer Privacy be Lost in Order for People to be Found?}, 38 Ind. L. Rev. 207, 209 (2005); Renée McDonald Hutchins, \textit{Tied Up in Knots? GPS Technology and the Fourth Amendment}, 55 UCLA L. Rev. 409, 417-18 (2007) (noting that GPS devices are currently accurate within one or two meters or approximately six and one a half feet).

\textsuperscript{43} Hutchins, \textit{supra} note 42, at 458.
lowing them to gain the same information on the movements of the individual/object tracked.\textsuperscript{44}

Along similar lines, the suspect’s location can be tracked at all times without requiring any officers to leave the police station after the initial installation. Accordingly, a single officer can monitor multiple suspects at once instead of having multiple officers on the road and/or in the air to track suspects via beeper.\textsuperscript{45} Monitoring personnel efficiency further increases as GPS tracking devices are capable of automatically sending text messages to monitoring officers precisely when the targeted vehicle begins to move, reaches a preset destination of interest, or ceases movement.\textsuperscript{46} This makes surveillance efforts far more covert from the police’s perspective but more intrusive to the individual because the stealth nature of the searches allows police to see what a normal citizen might not see, even in a theoretical world, since there is no longer a chance of the suspect spotting surveillance unit(s).\textsuperscript{47} Improvements in battery technology further minimize risk of detection as batteries attached to GPS devices can last for many weeks.\textsuperscript{48}

Lastly, GPS data can easily, directly, and automatically be combined with other information to provide a useful composite analysis when tracking suspects. For instance, rather than providing general information on the suspect’s direction and distance of travel, GPS signals are overlaid with sophisticated maps of an area that include features such as topography,\textsuperscript{49} traffic patterns and live traffic data,\textsuperscript{50} or police maps identifying recent crime reports.\textsuperscript{51} These combined maps

\textsuperscript{44} April A. Otterberg, Note, GPS Tracing Technology: The Case for Revisiting Knotts and Shifting the Supreme Court’s Theory of the Public Space Under the Fourth Amendment, 46 B.C. L. Rev. 661, 667-68 (2005).
\textsuperscript{45} See Marc Jonathan Blitz, Video Surveillance and the Constitution of Public Space: Fitting the Fourth Amendment to a World that Tracks Image and Identity, 82 Tex. L. Rev. 1349, 1375 (2004).
\textsuperscript{46} See State v. Brereton, 826 N.W.2d 369, 374 (Wis. 2013) (discussing programming capabilities of GPS devices that permit police to receive live text messages regarding whether the target vehicle is in motion).
\textsuperscript{47} See Eva Marie Dowdell, Note, You Are Here! – Mapping the Boundaries of the Fourth Amendment with GPS Technology, 32 Rutgers Computer & Tech. L.J. 109, 117 (2005) (noting that GPS devices permit police to track a suspect without ever leaving the police station and serve as an alternative to “trailing” a suspect, which consumes far more personnel resources and is accompanied with the risk of detection).
\textsuperscript{48} See Holden, 54 A.3d at 1126.
\textsuperscript{49} David A. Schumann, Tracking Evidence with GPS Technology, 77 Wis. Law. 9, 62 (2004).
\textsuperscript{50} John E. Woodard, Comment, Oops, My GPS Made Me Do It!: GPS Manufacturer Liability Under a Strict Products Liability Paradigm When GPS Fails to Give Accurate Directions to GPS End-Users, 34 U. Dayton L. Rev. 429, 440 (2009).
are also capable of cross-referencing with businesses, individual residences, or other attractions in and around the vicinity of locations where a suspect stops. Further, when police retrieve a suspect's history of movements, not only will they know the suspect's destinations but also exactly what route the suspect traveled and the duration of travel between destinations.

Where GPS surveillance continues over an extended period of time, this level of sophistication in data allows law enforcement to know the habits and preferences of a suspect. This raises new Fourth Amendment concerns on top of concerns accompanying beeper technology. Because GPS tracking technology often still requires the installation of a device on/in the item to be tracked, the property intrusion remains the same with GPS technology while the personal intrusion into the intimate details of an individual's life increases significantly. Although the installation component has previously been viewed by courts as a sufficient self-regulating, limited protection against GPS searches, the use of recently deployed and future technologies may require the Court to adopt the rationale Justice Alito advanced in his concurrence.

C. SIZE AND INSTALLATION ADVANCEMENTS: DECREASED DETECTABILITY/INCREASED EFFICIENCY

Special technological advancements geared toward law enforcement uses eliminate any remaining risk of detection and make it possible for law enforcement to monitor more individuals at once. Since development, ongoing efforts produced reductions in the size of GPS devices. Devices once large enough to be spotted by a suspect who had cause to look under his car were, by 2005, reduced to a covert size of 3" by 5" by 1.5". A year later, the total area and volume of the most covert devices shrunk by eighty percent, with dimensions of 2.56" by 1.7" by 1.1". This 2006 version of the GPS chip weighed a mere three ounces. Now, GPS chips rival the size of a postage stamp.

55. See supra notes 30-31 and accompanying text.
56. Otterberg, supra note 44, at 667 n.48.
57. Hutchins, supra note 42, at 419.
58. Id.
Indicative of just how unobtrusive they are, a GPS chip can be inserted under an individual's skin.\textsuperscript{60}

This substantial decrease in size expands installation methods available to police. Where police once needed to physically place devices on vehicles, devices are now installable without police ever leaving their own vehicle. Recent technological advances allow police forces, such as the Los Angeles Police Department, to attach GPS chips remotely by shooting sticky darts—containing an embedded GPS chip, battery source, and transmitter—from police vehicles onto target vehicles.\textsuperscript{61}

An easier attachment process has multiple advantages, greatly expanding potential uses of tracking technology. Increased attachment efficiency is self-evident. Pre-advancement, police had to locate and follow the target vehicle until it was not in use and then scout out the driver’s habits in an effort to determine when manual installation was feasible without risk of the suspect detecting police. Now, police need only briefly drive behind the target vehicle and press a button deploying the dart. This not only eliminates all risk of detection but also removes from play Fourth Amendment issues of police entering the curtilage of the suspect’s home to install the device.\textsuperscript{62}

Second, dart-delivery could be combined with other technology to more readily use GPS tracking technology. Rather than requiring police to personally identify a target vehicle while in the field, a database and automatic license plate scanning system, much like those used by parking enforcement departments when identifying cars with overdue tickets eligible for booting, could be mounted on police vehicles to alert police of matches while police perform normal patrol duties.\textsuperscript{63} Dart-shooting devices could even be attached to red light cameras or any other traffic camera capable of scanning license plates. This would allow for a quicker, less manpower-intensive method of installing active GPS tracking devices. With that comes a downward shift in the cost to police, permitting tracking of lower priority suspects based on this new cost/benefit calculus.


\textsuperscript{61} Hutchins, supra note 42, at 418-19.

\textsuperscript{62} See United States v. McIver, 186 F.3d 1119, 1126-27 (9th Cir. 1999) (finding the installation of a device outside of the curtilage to be significant to the Fourth Amendment inquiry and upholding the reasonableness of the search); United States v. Williams, 650 F. Supp. 2d 633, 667-69 (W.D. Ky. 2009) (suggesting that an otherwise constitutional search would violate the Fourth Amendment if police had trespassed on private property to install a tracking device).

Finally, the ability to attach the device to a moving vehicle makes it easier to comply with locational terms when executing warrants. In Jones, for instance, the initial warrant required D.C. police to attach the GPS device within the District of Columbia. However, finding the car parked and unattended in Maryland, D.C. police attached the device outside of the jurisdiction for which the warrant was authorized. With installation possible on a moving vehicle, police are no longer dependent on the suspect leaving his vehicle unattended in their jurisdiction to effectuate the attachment of the device. This not only allows for easier compliance with warrant terms but also permits police to obtain and execute warrants within their jurisdiction on individuals who they know will pass through, but not necessarily stop in, their jurisdictions. Although police forces are always free to seek broader locational parameters in warrant requests or obtain cooperation from police in other jurisdictions, dart-delivery streamlines the process such that police can more efficiently target a greater number of suspects with more diffuse relationships to the jurisdiction performing the tracking. This proves particularly useful in tracking drug couriers who pass through several jurisdictions, even several states, without stopping and leaving their vehicle unattended long enough to manually install the device without detection.

D. Ongoing Technological Advancements: Escaping Jones' Property Theory Rationale

1. GPS Technology in Existing Devices

Two dramatic increases in the presence of GPS technology in everyday life further reduce the potential need for attaching an external device. First, as GPS technology becomes more available, its applications and popularity increase significantly. GPS, or similar tracking technology, now comprise a part of most mobile devices, allowing an individual's position to be triangulated at most times when the individual is in possession of his or her phone and the phone is turned on with an active wireless signal. Accordingly, where police determine that their suspect owns a phone with such capability, phone positioning records held by the suspect's wireless carrier can provide police

64. 132 S. Ct. 945 (2012).
67. But see infra notes 282-91 and accompanying text.
68. Ian Herbert, Where We are with Location Tracking: A Look at the Current Technology and the Implications on Fourth Amendment Jurisprudence, 16 Berkeley J. Crim. L. 442, 477-80 (2011).
with the very information they would otherwise gain through attaching a GPS device to the suspect’s car. 69

Second, and specific to the context of automobiles, many cars are now equipped with GPS systems through roadside assistance features like OnStar, which are already producing records of individuals’ vehicular movements. 70 This record would logically be accessible to police through a process similar to that for obtaining phone-based locational data. Furthermore, a Jones-based challenge to the use of such information would likely fail because the record of information containing the vehicular movements was voluntarily conveyed to a third-party private company and produced by that company as part of its normal course of business, sans a governmental investigatory purpose. 71 With the device already embedded in the automobile when an individual acquires it, a situation closer to United States v. Knotts 72 and United States v. Karo 73 exists. This eliminates the trespass element of the search. As GPS continues to offer the public more capabilities and gains popularity, more devices will carry GPS technology, decreasing the necessity for police to attach a GPS device to an automobile to track it.

2. Current GPS Surveillance Through Drone Technology

Select law enforcement agencies have been using drone technology for surveillance purposes for several years. Drones are classified as Unmanned Aerial Systems (“UAS”) and are unmanned aircraft operated through remote-controlled radio devices. 74 Drones are capable of processing sensory information and relaying that information to the

69. See United States v. Guerrero, 768 F.3d 351, 359-61 (5th Cir. 2014) (emphasizing that despite concurrences and “spirited academic debate” in Jones, Jones was decided on a trespass theory and lower courts cannot “read tea leaves to predict possible future Supreme Court rulings . . . .”); Am. Civil Liberties Union v. U.S. Dep’t of Justice, 655 F.3d 1, 12-13 (D.C. Cir. 2011) (highlighting that current privacy laws do not impede police from accessing GPS tracking data from a suspect’s cellular phone through the suspect’s cellular phone provider).


71. See In re U.S. for Historical Cell Site Data, 724 F.3d 600, 610-12 (5th Cir. 2013) (adopting the Government’s argument that “[w]here a third party collects information in the first instance for its own purposes,” the Government can obtain the records via a subpoena pursuant to 18 U.S.C. § 2703 (2012) without implicating the Fourth Amendment); Ford v. State, 444 S.W.3d 171, 187-89 (Tex. App. 2014) (categorizing the historical cellsite data produced by a telecommunications company as a simple business record compiled by the telecommunications company as the result of the subscriber voluntarily sharing their locational information with the telecommunications such that the Fourth Amendment is not applicable).


74. Nicholas Ryan Turza, Dr. Dronelove: How We Should All Learn to Stop Worrying and Love Commercial Drones, 15 N.C. J. L. & TECH. 319, 321-23 (2014); see also
drone’s operator.\textsuperscript{75} In using drone technology, police can acquire all
the data made available through GPS tracking, with the additional
capability of providing a video recording of the suspect’s movements.
Ongoing research into improving drone technology is on course to
eliminate many of the personnel inefficiencies that existed with
beeper technology.

Ongoing technological advancements have increased the popular-
ity of drones with local law enforcement agencies. Use increased to a
sufficient level for Congress to act by passing regulations on drones
through the Federal Aviation Administration (“FAA”) Modernization
and Reform Act of 2012 (“Act”).\textsuperscript{76} The Act required the FAA to
address safety concerns with the operation of UAS and to create “a plan
to integrate ‘civil unmanned aircraft systems into the national air-
space system.”\textsuperscript{77} As part of the plan, Congress empowered the FAA
to develop standards for issuing Certificates of Authorization for
UAS.\textsuperscript{78} Increased use of drones is foreseeable as the FAA was com-
manded to work with coordinate government agencies “to simplify the
process for issuing certificates of waiver or authorization with respect
to applications seeking authorization to operate public unmanned
aircraft systems in the national airspace system.”\textsuperscript{79} Active Certificates
of Authorization have been issued for 270 different ongoing drone-
based flight missions\textsuperscript{80} held by over one hundred different entities
within the United States.\textsuperscript{81} In addition to military branches and fed-
eral law enforcement agencies, the 2012 list includes twenty new enti-
ties;\textsuperscript{82} seventeen police or sheriff departments; and nine additional

\begin{footnotesize}
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\textsuperscript{75} & FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, \S 331(9), 126 Stat. 11, 72 (2012) (defining “unmanned aerial system”).
\textsuperscript{76} & Timothy T. Takahashi, Drones and Privacy, 14 Colum. Sci. & Tech. L. Rev. 72, 86-87 (2013).
\textsuperscript{77} & Pub. L. No. 112-95, 126 Stat. 11 (2012).
\textsuperscript{79} & FAA Modernization and Reform Act of 2012 \S 332(a)(2)(A)(i).
\textsuperscript{79} & Id. \S 334(c)(1).
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state, local, or tribal departments where drone technology is potentially useful for law enforcement purposes.83

This increase in popularity was met by an expansion in available drone models, particularly smaller-sized models. Across all agencies, at least thirty-five different drone models are being used, all specific in design, sensory receptor capabilities, size, and device operation mechanisms to the particular mission of the agency.84 Additionally, "50 companies, universities, and government agencies are [currently] betting on the future of UAS technology and developing some 155 different drone models," all for release into the world drone market.85 The commercial drone market is expected to reach $11.4 billion within the next ten years.86 Sensory data receptors available for implantation into a drone include video recording devices, night vision devices, image thermal sensors, and olfactory sensors.87 Specific to size, known United States drone devices in 2009 ranged from the Global Hawk design at forty feet long down to the Wasp and Raven designs at just thirty-eight inches long.88 The smallest of these devices deploy simply by tossing the device into the air by hand.89 Experts appear to agree that the future of drone technology includes far smaller and more covert "micro-UAS the size of insects."90

Despite decreases in size making drone use more feasible for close-range urban surveillance, the operational systems for UAS still pose the greatest limit to widespread drone use. Commercially available drones are manually controlled.91 This requires a team of individuals typically larger than that needed to operate many manned planes.92 Within the law enforcement setting, drones remain inefficient as the personnel resources necessary exceed the manpower re-


86. Id.
87. Takahashi, supra note 75, at 85-91.
91. Blank, supra note 89, at 677.
92. Id.
quired for in-the-field surveillance. In fact, beeper technology likely remains more efficient than existing manually operated drone technology.

In response to these efficiency concerns, studies are well underway on self-tracking drones not dependant on manual piloting. The military funds multiple projects utilizing "soft biometrics" algorithms that assemble a mix of inputs from optical and other sources to 'keep track of targets' on their own. These studies focus on tracking individuals using facial recognition programming; however, there is no reason to think that the same technology could not be applied to identify and self-track specific vehicles by license plate number. Such an advance, when built into an insect-sized drone, removes almost all practical constraints on law enforcement's ability to track individuals. Personnel costs correspondingly drop to the point where the only constraint on the number of suspects tracked is the number of drones a law enforcement entity can purchase.

The size and efficiency improvements that promise to eliminate remaining feasibility concerns underscore the narrow protection offered by the majority's rationale in United States v. Jones and why the majority's decision to not address the reasonable expectation basis for holding such searches unconstitutional is short-sighted. With the Court following its traditional path of taking Lilliputian incremental steps to provide protections and the in-court application of "new" Fourth Amendment holdings being notoriously delayed because of the deterrence-based nature of the remedy, a legislative-based approach is needed to combat the steady and sizeable advancements in technology. Before assessing the details of a legislative-based proposal, a full understanding of the Jones decision and its application by lower courts, including the narrow reading lower courts have given Jones and the pitfalls many defendants face in seeking exclusion per Jones, is necessary.

93. Takahashi, supra note 75, at 91.
94. Id.
95. 132 S. Ct. 945 (2012).
96. Infra notes 207-15 and accompanying text; see Davis v. United States, 131 S. Ct. 2419, 2423-24 (2011) (holding that where an officer reasonably relies on binding circuit court authority when conducting a search that is later deemed unconstitutional, the exclusionary rule is inapplicable to the fruits of that search as the exclusionary rule's purpose of deterrence is not advanced).
III. THE JONES RULING: PROPERTY RIGHTS VS. KATZ REASONABLENESS

A. PRE-JONES ROLE OF PROPERTY RIGHTS IN FOURTH AMENDMENT LAW

Prior to Katz v. United States,97 Fourth Amendment questions frequently turned exclusively on whether or not police committed a physical trespass to facilitate their search.98 In Olmstead v. United States,99 the Court highlighted that where police obtain evidence “without trespass upon any property of the defendants”100 their conduct in gathering the evidence “did not amount to a search or seizure within the meaning of the Fourth Amendment.”101 From this language, the invasion of a property right belonging to the defendant was understood as a necessary element for finding a Fourth Amendment violation.102

Katz drastically altered this analysis, eliminating any requirement that a defendant successfully allege a trespass for the finding of a violation.103 The United States Supreme Court stated that “the presence or absence of a physical intrusion” does not dictate the scope of the protection afforded by the Fourth Amendment.104 In that same breath, the Court also indicated that the search location, conducted apart from the defendant’s property in a public phone booth, had “no constitutional significance.”105

Subsequent to Katz, the Court interpreted this latter pronouncement as either relegating trespass and property rights to one of many elements at which a court should look when determining whether an individual’s reasonable expectation of privacy was violated106 or as completely separating the issues of trespass and property rights from

98. See Olmstead v. United States, 277 U.S. 438 (1928) (holding that use of a wiretap to listen to and document the defendant’s conversations did not constitute a search under the Fourth Amendment because the wiretap did not trespass on the defendant’s physical property).
100. Olmstead, 277 U.S. at 457.
101. Id. at 466.
105. Id.
the Fourth Amendment calculus. Pertaining to installed tracking technology, although United States v. Knotts and United States v. Karo involved devices installed in property prior to the defendant acquiring a possessory interest, both cases lent credence to the position that minimal trespasses in the course of a search did not make the search unreasonable for Fourth Amendment purposes. The language of Karo went as far as to say that “[t]he existence of a physical trespass is only marginally relevant to the question of whether the Fourth Amendment has been violated . . . .”

Prior to United States v. Jones, most circuits understood Katz, Karo, and Knotts as saying a property rights violation accompanying the simple installation of a tracking device on a car did not constitute an unreasonable search implicating Fourth Amendment rights. Further, so long as the device did not meaningfully interfere with the operation of the individual’s vehicle, such as damaging the vehicle or


112. 132 S. Ct. 945 (2012).

113. See United States v. Smith, 387 F. App’x 918, 920-21 (11th Cir. 2010) (stating that a warrant was not necessary under the Fourth Amendment where police installed a tracking device on the exterior of the defendant’s vehicle because the defendant lacked a reasonable expectation of privacy while the vehicle was in a public parking lot); United States v. Marez, 605 F.3d 604, 610 (5th Cir. 2010). (stating, “[W]hen police have reasonable suspicion that a particular vehicle is transporting drugs, a warrant is not required when, while the vehicle is parked in a public place, they install a non-invasive GPS tracking device on it for a reasonable period of time.”). See also United States v. Pineda-Moreno, 591 F.3d 1212, 1214-15 (9th Cir. 2010) (holding that the defendant lacked a reasonable expectation of privacy in a vehicle that was parked in a driveway because the outside of the vehicle was generally accessible to the public); United States v. Garcia, 474 F.3d 994, 997-98 (7th Cir. 2007) (noting that where police could follow a vehicle without engaging in a search, the use of tracking technology as a substitute means for gathering locational data does not convert police activity into an unreasonable search); United States v. McIver, 186 F.3d 1119, 1126-27 (9th Cir. 1999) (holding that the placement of a tracking device on the undercarriage of vehicle was not considered a “search” cognizable under the Fourth Amendment because “[t]he undercarriage [of the defendant’s vehicle] is part of the car’s exterior, and as such, is not afforded a reasonable expectation of privacy”). See also United States v. Michael, 645 F.2d 252, 258 (5th Cir. 1981) (en banc) (explaining that “[a]lthough the attachment was technically a trespass, ‘arcane distinctions developed in property . . . law’ are not controlling. . . . Stated simply, the invasion of privacy, ‘if it can be said to exist, is abstract and theoretical.’ . . . The actual installation of the beeper was much less intrusive than the typical stop and frisk.”) (internal citation omitted)).
tapping into the car's battery to provide the device power, any technical trespass was deemed de minimis and not rising to the level of a seizure for Fourth Amendment purposes.114 Even the United States Court of Appeals for the District of Columbia Circuit in Jones did not rest its ruling on a trespass or property rights theory as the opinion never directly referenced property rights and the word “trespass” appeared just twice and in contexts apart from finding a violation on that basis.115 Resort to property rights as the basis for or a factor in deeming a search unreasonable was limited to 1) state court cases where state high courts gave parallel state constitutional provisions more protective readings,116 and 2) circuit panel concurrences in judgments or dissents.117 Against this stacked judicial backdrop, the Jones majority relied exclusively on a property rights trespass theory to command the exclusion of tracking data evidence whenever a tracking device was unreasonably118 attached to a defendant's property.119

B. The Majority Reasoning From Jones

Justice Scalia, writing for the majority and applying an originalist hue, breathed new life into the role of property rights in determining whether a Fourth Amendment violation occurred. Property rights went from, at most, a minimal factor in a broad test for determining the reasonableness of the asserted privacy expectation to a standalone sufficient factor reminiscent of what the United States Supreme Court

114. Garcia, 474 F.3d at 996; McIver, 186 F.3d at 1127.
115. See United States v. Maynard, 615 F.3d 544 (D.C. Cir. 2010).
116. People v. Weaver, 909 N.E.2d 1195, 1202 (N.Y. 2009). (stating, “If, as we have found, defendant had a reasonable expectation of privacy that was infringed by the State’s placement and monitoring of the Q-ball on his van to track his movements . . . .”). See also State v. Jackson, 76 P.3d 217, 224 (Wash. 2003) (en banc); State v. Holden, 54 A.3d 1123, 1129, 1132-34 (Del. Super. Ct. 2010) (relying on state statute to suggest that an individual has a property right with respect to the underside of their vehicle but ultimately resolving that the tracking search was unreasonable based on the extended duration of the search); Commonwealth v. Connolly, 913 N.E.2d 356, 368-69 (Mass. 2009) (concluding that the installation of a GPS device that used the vehicle’s battery as a power source constituted a trespass and a seizure for purposes of the Massachusetts Constitution); State v. Campbell, 759 P.2d 1040, 1046-49 (Or. 1988) (relying on the Oregon Constitution to hold that use of tracking device to monitor the location of a defendant’s vehicle constituted a search necessitating a warrant).
117. McIver, 186 F.3d at 1133-34 (Kleinfeld, J., concurring) (finding the installation to be an unreasonable seizure, thus, making the search unreasonable); United States v. Butts, 729 F.2d 1514, 1522 (5th Cir. 1984) (Goldberg, J., dissenting); Michael, 645 F.2d at 260-70 (Tate, J., dissenting, with seven other judges joining the dissent).
118. The Court declined to address whether a warrantless tracking search, which involves a trespass, is reasonable under the Fourth Amendment where an officer has reasonable suspicion or probable cause to believe that the target of the search is engaged in ongoing criminal activity. United States v. Jones, 132 S. Ct. 945, 954 (2012) (concluding that Government forfeited argument by not raising it below).
looked for but did not find in Olmstead v. United States. By taking this tack, though, Scalia’s opinion declined to address whether continual and technologically based surveillance violated the Katz v. United States reasonable expectation of privacy test. This leaves two questions: 1) at what point, if any, does an individual have a recognizable privacy interest in his or her course of movement, and 2) what protection exists where government uses new technology not necessitating a trespass, such as drones, to track suspects in an unconfined dragnet-style manner?

Perspective is essential to understanding the differing rationales in Jones. The majority’s reliance on property rights emanates from Scalia’s characterization of the search and the significance he ascribed to the trespass. Rather than labeling the property intrusion as minimal or incidental, the Court started its substantive analysis by announcing that “[i]t is important to be clear about what occurred in this case: The Government physically occupied private property for the purpose of obtaining information.” Infringements of this more significant nature were central to English case law that inspired the drafting of the Fourth Amendment, such as Entick v. Carrington. Entick, cited by the Jones’ majority in the opening salvo of its argument, put forth the absolutist view that “law holds the property of every man so sacred, that no man can set his foot upon his neighbor’s close without his leave.” This influential role of property rights carried into the text of the Fourth Amendment in that the Amendment grants protection to specified items of property, rather than just providing for a right.

By restoring an independent property rights prong for establishing a Fourth Amendment violation, the majority first addressed and distinguished three sets of cases: 1) those relying on the reasonable expectation of privacy test which had accompanying language seemingly minimizing the significance of property rights such as Katz, 2)

120. 277 U.S. 438 (1928).
121. 389 U.S. 947 (1967).
122. United States v. Jones, 132 S. Ct. 945, 954 (2012). “It may be that achieving the same result through electronic means, without an accompanying trespass, is an unconstitutional invasion of privacy, but the present case does not require us to answer that question.” Jones, 132 S. Ct. at 954.
123. 132 S. Ct. 945 (2012).
125. 95 Eng. Rep. 807 (C.P. 1765).
128. Jones, 132 S. Ct. at 949. “The text of the Fourth Amendment reflects its close connection to property, since otherwise it would have referred simply to ‘the right of the people to be secure against unreasonable searches and seizures’; the phrase ‘in their persons, houses, papers, and effects’ would have been superfluous.” Id.
the beeper cases of *United States v. Knotts*¹²⁹ and *United States v. Karo*¹³⁰ involving government interferences with property to effectuate searches, and 3) open field doctrine cases, including *Oliver v. United States*,¹³¹ holding a trespass insufficient for finding a violation. The *Jones* Court distinguished the *Katz* line of cases by declaring *Katz*’s reasonableness rule an additional rule intended for situations not involving a trespass.¹³² To support this proposition, the *Jones* majority, quoting *Soldal v. Cook County*,¹³³ read *Katz* as not “snuff[ing] out the previously recognized protection for property.”¹³⁴ The Court further stated that a reasonable expectation of privacy “embodie[s the] preservation of past rights” as the expectation “has a source outside of the Fourth Amendment, either by reference to concepts of real or personal property law or to understandings that are recognized and permitted by society.”¹³⁵

The Court took a different tack in distinguishing *Knotts* and *Karo*. *Knotts* was distinguished based on its reservation of the question of whether the installation of the beeper device was a trespass sufficient to declare the search unreasonable because the petitioner did not challenge the search directly on the basis of the trespass.¹³⁶ Arguably, however, this distinction was somewhat made in haste. First, it overlooked strong language, albeit dicta, indicating that a breach of property rights was a non-starter for finding a Fourth Amendment violation.¹³⁷ Second, by claiming that a reasonable expectation of privacy encompasses freedom from trespass when distinguishing *Katz*, a disconnect existed because a lack of reasonableness was asserted in *Knotts*. If property rights are truly part of the reasonableness calculus, the trespass accompanying the search should have laid a proper basis for finding the search unreasonable.

Unlike *Knotts*, *Karo* touched the trespass issue. The trespass in *Karo*, however, presented itself differently as the tracking device was attached prior to the defendant taking ownership and possession of the device-containing item.¹³⁸ This timing difference allowed the

¹³² *Jones*, 132 S. Ct. at 951.
¹³⁴ *Jones*, 132 S. Ct. at 951 (quoting *Soldal v. Cook Cnty.*, 506 U.S. 56, 64 (1992)).
¹³⁷ *Knotts*, 460 U.S. at 285 (describing “notions of physical trespass based on the law of real property” as “not dispositive” of a Fourth Amendment claim).
Jones majority to distinguish Karo by separating property right violations into two categories: \textsuperscript{139} category one being nothing more than a slight unobtrusive deprivation of property caused by the tracking device being on/in an object that defendant possesses \textsuperscript{140} and category two being cases where not only a category one deprivation exists but also a trespass occurred since installation happened while defendant owned the object. \textsuperscript{141} Through this distinction, Karo is preserved and only the second category of property rights' violations constitutes a basis for finding a Fourth Amendment violation.

Finally, the Court distinguished Jones from the open fields doctrine, iterated in Oliver, by limiting the universe of trespass relevant for Fourth Amendment purposes to those trespasses on an enumerated property interest listed in the text of the Fourth Amendment. \textsuperscript{142} This distinction follows traditional Fourth Amendment jurisprudence limiting the scope of the constitutional protection to those categories of property named in the Amendment. \textsuperscript{143}

When introducing technology into the equation, curious practical results follow, creating doubts whether a pure property-based theory for finding violations—with the open fields doctrine carve out—is logical and sustainable. For instance, police currently could enter a defendant’s open field and mount a camera in the grass to monitor a field where police suspect marijuana is growing without committing a meaningful enough trespass to violate the Fourth Amendment. Similarly, police could station a small drone over the open field \textsuperscript{144} or mount cameras on a utility pole peering into an individual’s property. \textsuperscript{145} Yet they could not attach a small camera to a soil tiller or vehicle sitting out in that field. Were a reasonableness test in accordance with Justice Alito’s concurrence applied to these situations, a more consistent practical result replaces the formalistic result. With commercially available technology advancing past the protection of-

\begin{itemize}
\item \textsuperscript{139} See Jones, 132 S. Ct. at 952 (stating that “Jones, who possessed the Jeep at the time the Government trespassorily inserted the information-gathering device, is on much different footing”).
\item \textsuperscript{140} Id.
\item \textsuperscript{141} Id.
\item \textsuperscript{142} Id at 953. “The Government’s physical intrusion on such an area—unlike its intrusion on the ‘effect’ at issue here—is of no Fourth Amendment significance.” Id.
\item \textsuperscript{143} Jack Wade Nowlin, The Warren Court’s House Built on Sand: From Security in Persons, Houses, Papers, and Effects to Mere Reasonableness in Fourth Amendment Doctrine, 81 Miss. L.J. 1017, 1032 (2012).
\item \textsuperscript{144} See Florida v. Riley, 488 U.S. 445 (1989); but see Kyllo v. United States, 533 U.S. 27, 34-35 (2001) (requiring search enhancing technology to be “in general public use” for the warrantless use of such technology to be reasonable under Katz).
\item \textsuperscript{145} United States v. Moore, No. 14-20206-CR, 2014 WL 4639419, at *3 (S.D. Fla. Sept. 16, 2014) (concluding that eight months of police surveillance using a network of cameras mounted on utility poles did not violate Fourth Amendment partially because no physical trespass occurred in mounting the cameras).
\end{itemize}
ferred by the *Jones* majority’s reasoning, one must look at Justice Alito’s reasoning and ask whether a fifth vote, if pressed, is forthcoming.

C. JUSTICE ALITO’S CONCURRENCE

The Alito concurrence advanced Justice Harlan’s *Katz v. United States*¹⁴⁶ test into the world of twenty-first century technology. Responding to the majority, Justice Alito called their choice to pigeonhole the holding into a property rights theory “unwise” and “highly artificial.”¹⁴⁷ From Alito’s standpoint, eighteenth century property-centric theories of Fourth Amendment law ill adapt to twenty-first century technology such that no analogy can be drawn between searches during the Founders’ lifetimes and GPS tracking searches.¹⁴⁸ Instead of focusing on trespass, Alito focused on the duration of the tracking search.¹⁴⁹ Without identifying the durational point at which a reasonable search turns unreasonable, the Alito concurrence concluded that a four-week search was “prolonged” and that an individual has a reasonable expectation that society will objectively recognize against the government knowing his or her every movement over that time period.¹⁵⁰

Justice Alito’s approach also reconciled prior tracking search case law from *United States v. Knotts*.¹⁵¹ Just as *Knotts* reserved judgment on the installation/trespass issue,¹⁵² it reserved judgment on prolonged tracking searches by saying that “there will be time enough then to determine whether different constitutional principles may be applicable” if new technology made “twenty-four hour surveillance of any citizen of this country” possible.¹⁵³

Alito’s approach excels by integrating the key Fourth Amendment focus on the intrusiveness and intimacy of a search when judging reasonableness. The likelihood that a search will reveal intimate details about the individual goes to the intrusiveness of that search and can dictate the search’s constitutionality.¹⁵⁴ By compiling all locations an individual visits, police learn intimate details about the individual’s life.¹⁵⁵ “[B]y easy inference,” life details including “our associations—political, religious, amicable and amorous” and “the pattern of our pro-

¹⁴⁸ *Jones*, 132 S. Ct. at 958.
¹⁴⁹ *Id.* at 964.
¹⁵⁰ *Id.*
¹⁵³ *Knotts*, 460 U.S. at 283-84.
¹⁵⁵ People v. Weaver, 909 N.E.2d 1195, 1199-1200 (N.Y. 2009).
essional and avocational pursuits" are all ascertainable through studying our movements.\textsuperscript{156}

The intrusiveness of tracking searches substantially increases with new technology allowing for twenty-four hour, seven-day-a-week surveillance. While an individual may be assumed to have exposed his movements to the public over a short period of time, where the search stretches on for weeks, it is no longer the case that an individual has knowingly and constructively exposed his or her movements to the world.\textsuperscript{157} This is "because the likelihood anyone will observe all those movements is effectively nil."\textsuperscript{158} These characteristics, distinguishable from Knotts and Karo,\textsuperscript{159} provide ample reason to apply Katz, especially given the ongoing imminent influx of new technology.

By applying Katz, Justice Alito openly anticipated and highlighted several of the majority rationale's shortfalls. First, he forecasts that Jones\textsuperscript{160} provides no protection against trespass-free, prolonged tracking searches, including those that utilize pre-installed GPS devices, roadside assistance devices, cellular and wireless historical tower data, or stolen vehicle recovery systems.\textsuperscript{161} Second, he views a tracking search as a search of the targeted individual's internal movements rather than a search of the vessel housing the GPS device, thus diminishing issues of standing where the targeted individual lacks a property interest in the vessel housing the tracking device.\textsuperscript{162} By viewing the search as probing the targeted individual's internal movements and judging the search under the Katz reasonableness test, Alito's approach eliminates resort to state-specific property law as the basis for determining whether a trespass and a Fourth Amendment violation occurred.\textsuperscript{163} In so doing, Alito's approach not only negates Karo's lasting focus on when installation occurs\textsuperscript{164} but

\textsuperscript{156} Weaver, 909 N.E.2d at 1199-1200.
\textsuperscript{157} United States v. Maynard, 615 F.3d 544, 558 (D.C. Cir. 2010).
\textsuperscript{158} Maynard, 615 F.3d at 558.
\textsuperscript{159} 468 U.S. 705 (1984).
\textsuperscript{160} 132 S. Ct. 945 (2012).
\textsuperscript{161} See Jones, 132 S. Ct. at 961-63 (Alito, J., concurring in judgment).
\textsuperscript{162} See id. at 961-62 (attaching greater significance to the "use of GPS for the purpose of long-term tracking" than the "relatively minor" trespass and noting that the majority's holding provides no protection in situations where the tracking device is installed before the targeted individual takes possession of the vehicle because the individual will lack a property rights interest in the vehicle at the time of installation, thus depriving the individual of standing to challenge the search based on the trespass).
\textsuperscript{163} Id.
\textsuperscript{164} Compare id. at 961 (criticizing the majority approach wherein the targeted individual acquiring keys after a tracking device is installed "would have no claim for trespass—and, presumably, no Fourth Amendment claim either"). with United States v. Karo, 468 U.S. 705, 711 (1984) (holding that the installation of a tracking device prior to the defendant gaining possession of a vessel containing the tracking device deprived defendant of a "legitimate expectation of privacy" against tracking search).
also produces consistent results regarding the constitutionality of tracking searches across states with varying laws governing the ownership of property.\textsuperscript{165} Finally, a reasonableness test counters efforts by police to adapt search techniques to Jones by finding ways of installing tracking devices at a time and place where the search target lacks an ownership interest.\textsuperscript{166}

D. **Justice Sotomayor: A Future Fifth Vote for Applying Katz?**

Significant indicators in Justice Sotomayor’s concurrence suggest she would provide a fifth vote for applying Katz v. United States\textsuperscript{167} in a future trespass-free prolonged surveillance case. Although joining the majority and not squarely reaching whether Katz applies, Justice Sotomayor, through, certain language in her concurrence, demonstrates thinking mirroring that of Alito.\textsuperscript{168} Sotomayor noted the “unique attributes of GPS surveillance,” placing particular focus on GPS technology’s ability to produce “recorded and aggregated” data revealing intimate details about the individual.\textsuperscript{169} In her words, documenting an individual’s movements “enables the Government to ascertain, more or less at will, their political and religious beliefs, sexual habits, and so on.”\textsuperscript{170}

For Justice Sotomayor, claims that an individual exposes his movements when traveling in public, which dominated United States v. Knotts\textsuperscript{171} and United States v. Karo,\textsuperscript{172} may not derail a tracking search challenge.\textsuperscript{173} More tellingly, the fact that police are capable of “obtain[ing] the fruits of GPS monitoring through lawful conventional surveillance techniques” was not dispositive of the constitutional question if addressed from a Katz reasonableness standpoint.\textsuperscript{174} Thus, while Sotomayor joined the majority because of her belief that

\textsuperscript{165} See Jones, 132 S. Ct. at 961-62 (Alito, J., concurring in judgment) (noting that state marital property laws will impact whether both parties, as opposed to only one party, to a marriage has an ownership interest over a vehicle at the time a tracking device is installed).

\textsuperscript{166} See id.

\textsuperscript{167} 389 U.S. 347 (1967).


\textsuperscript{169} Jones, 132 S. Ct. at 955-56.

\textsuperscript{170} Id. at 956.

\textsuperscript{171} 460 U.S. 276 (1983).

\textsuperscript{172} 468 U.S. 705 (1984).

\textsuperscript{173} See Jones, 132 S. Ct. at 956-57 (stating that the individual’s exposure of their movements to the public and the police’s ability to observe the movements through routine in-the-field surveillance techniques, which controlled the Fourth Amendment analysis in Knotts and Karo, are not dispositive factors when police employ new-age technology to track an individual).

\textsuperscript{174} Id.
Katz did not extinguish a separate property rights inquiry,\footnote{Id. at 955.} the essence of her independent concurrence reads far more closely to Alito’s concurring opinion than the majority opinion. It remains to be seen whether this forecast proves accurate but based on how lower courts are applying Jones,\footnote{132 S. Ct. 945 (2012).} it is likely we will find out.

IV. IMPLEMENTATING JONES’ PROPERTY RIGHTS THEORY

A. LOWER COURTS’ READINGS OF JONES

Since United States v. Jones,\footnote{139 S. Ct. 945 (2012).} defendants have used both rationales to exclude evidence obtained through tracking searches. The split configuration provides a two-pronged avenue of attack against most GPS tracking searches. Courts, in addition to the trespass analysis, are consistently proceeding through a more comprehensive analysis of the Katz v. United States\footnote{389 U.S. 347 (1967).} test rather than automatically accepting United States v. Knotts\footnote{460 U.S. 276 (1983).} and United States v. Karo\footnote{468 U.S. 705 (1984).} as fully controlling.\footnote{See United States v. Barraza-Maldonado, 879 F. Supp. 2d 1022, 1026-29 (D. Minn. 2012) (proceeding to analyze tracking searches with the reasonable expectation of privacy test in mind even after concluding that the tracking device was installed on a vehicle operated by the defendant at a time when the defendant did not have a possessory interest in the vehicle).} Other courts, however, take a cautious approach when applying Jones.\footnote{United States v. Guerrero, 768 F.3d 351, 361 (5th Cir. 2014) (noting “spirited academic debate” in Jones and the split concurrences therein but refusing to “read tea leaves” to predict future case results on non-trespass based tracking searches); Am. Civil Liberties Union v. Clapper, 959 F. Supp. 2d 724, 730, 752 (S.D.N.Y. 2013) (refusing to read anything into the concurrences in Jones and permitting the National Security Agency (“NSA”) to collect metadata from cell phones even where the data gives the NSA “a comprehensive record of people’s association with one another”); United States v. Graham, 846 F. Supp. 2d 384, 394 (D. Md. 2012) (noting that the Jones majority was willing to accept that “surveillance over time can implicate an individual’s reasonable expectation of privacy” but concluding that “factual differences between the GPS technology considered in [Jones] and . . . historical cell site location data” requires application of other more on-point precedents).}

Acknowledging the official vote breakdown in Jones, some courts addressing continual tracking searches echo and quote reasoning from Sotomayor’s concurrence when applying the Katz test, finding protracted surveillance unreasonable. In addition to the earlier-discussed statements in Sotomayor’s concurrence,\footnote{Supra notes 167-76 and accompanying text.} Justice Sotomayor pointedly stated, “I agree with Justice Alito that, at the very least, longer term GPS monitoring in investigations of most offenses impinges on
expectations of privacy.” ¹⁸⁴ In reviewing prolonged tracking searches using a variety of technologies to gather the locational data at issue, lower courts have taken considerable notice of this statement. ¹⁸⁵ Specifically, lower courts found it easier to rely on this statement in Sotomayor’s concurrence where Sotomayor gave life to her “at the very least”¹⁸⁶ phrasing by thinking beyond the facts in Jones when suggesting that “it may be necessary to reconsider the premise that an individual has no reasonable expectation of privacy in information voluntarily disclosed to third parties.” ¹⁸⁷ Combining these two statements, decisions to probe the constitutionality of GPS searches against more than just a trespass theory, by also applying Katz, are justifiable. ¹⁸⁸

B. OBSTACLES TO EFFECTIVE APPLICATION OF JONES AND ACCOMPANYING NEED FOR A NON-TRESPASS-BASED SOLUTION

Two doctrines accompanying Fourth Amendment exclusionary challenges limit a defendant’s reliance on United States v. Jones¹⁸⁹ for excluding evidence gathered through warrantless tracking searches. First, the doctrine of standing severely complicates and limits Jones because of the trespassory nature of the majority holding. Second, the

¹⁸⁵. See State v. Zahn, 812 N.W.2d 490, 498 (S.D. 2012) (quoting Justice Sotomayor’s statement in support of the conclusion that twenty-six day warrantless tracking search was unreasonable in duration); Graham, 846 F. Supp. 2d at 394 (quoting Justice Sotomayor’s statement before stating that “it appears as though a five justice majority is willing to accept the principle that government surveillance over time can impair an individual’s reasonable expectation of privacy” but not making such a finding in the case at hand since cell tower data and not GPS-installed tracking data was at issue).
¹⁸⁷. Id. (emphasis added); see also United States v. Cooper, No. 13-cr-00693-SI-1, 2015 WL 881578, at *7-8 (N.D. Cal. Mar. 2, 2015) (citing Justice Sotomayor’s concurrence in support of conclusion that Government must have probable cause to gather historical cell site data for 60 days); Tracey v. State, 152 So. 3d 504, 519-23 (Fla. 2014) (concluding that Jones concurrences support the contention that a warrant is required for historical cell site searches despite the lack of trespass); Commonwealth v. Augustine, 4 N.E.3d 846, 863 n.35 (Mass. 2014) (citing changes in technology as basis to overcome third-party disclosure doctrine for cellphone tracking data searches pursuant to Smith v. Maryland, 442 U.S. 735, 744-45 (1979), and grant individuals privacy interest in locational data gathered from cellular phones).
"objective reasonable reliance" doctrine from *Davis v. United States*\(^{190}\) actively delays the implementation of new Fourth Amendment rules because the deterrent nature of the exclusionary rule is not satisfied where evidence is discovered by police before a new constitutional rule is announced.\(^{191}\) A tour through these two doctrines as applied by lower courts interpreting *Jones* underscores the need to adopt a legislative solution that effectively applies a *Katz*\(^{192}\) reasonableness standard when judging tracking searches.

1. **Standing Doctrine Within the Trespass Theory Setting**

In reviewing post-*United States v. Jones* vehicle-tracking search cases, lower courts have not applied traditional standing requirements to roadside vehicle searches. Instead, defendants frequently face a stricter ownership-based standing standard for alleging a violation. Where a trespass provides the basis for deeming a search unreasonable, the defendant traditionally must show not only a personal interest but also a sufficient possessory interest in the area trespassed.\(^{193}\) Showing some relationship to, or even a temporary but non-lasting presence in, the area trespassed falls short of satisfying the standing bar for raising a Fourth Amendment challenge under *Jones*.\(^{194}\)

Specific to automobiles, this trespass-based possessory interest requirement is satisfied where a defendant shows an ownership interest in the vehicle through holding title to the vehicle, being a bailee over the vehicle, being the exclusive driver of the vehicle, or being a renter of the vehicle under a valid rental contract.\(^{195}\) A non-owner who is merely a frequent passenger or occasional driver in an automobile receives no protection from *Jones*, resulting in GPS-produced evi-

\(^{190}\) 131 S. Ct. 2419 (2011).

\(^{191}\) *See supra* note 96.

\(^{192}\) 389 U.S. 347 (1967).

\(^{193}\) *United States v. Riazco*, 91 F.3d 752, 754 (5th Cir. 1996).

\(^{194}\) *See United States v. Hanna*, No. 11-20678-CR, 2012 WL 279435, at *3 (S.D. Fla. Jan. 30, 2012) (holding that the defendant lacked standing to challenge the constitutionality of a tracking search of a vehicle shared by multiple individuals in a robbery conspiracy where defendant neither owned the vehicle through a valid title nor occupied the vehicle at the time the GPS device was installed); *see also United States v. Lewis*, 24 F.3d 79, 81-82 (10th Cir. 1994) (detailing that a passenger in a rental car lacked standing to challenge admissibility of evidence gathered during search of rental car); *United States v. Boruff*, 909 F.2d 111, 117 (5th Cir. 1990) (holding that the defendant lacked standing to challenge admissibility of evidence gathered during the search of a vehicle he operated where the vehicle was a rental car and defendant's name was not on the rental contract); *United States v. Obregon*, 748 F.2d 1371, 1373-74 (10th Cir. 1984).

\(^{195}\) *See United States v. Jones*, 132 S. Ct. 945, 949 n.2 (2012) (identifying several bases for establishing standing to challenge the warrantless installation of tracking device on a vehicle).
dence being admissible against him or her. Even a sole operator of a vehicle will lack standing where he is operating a vehicle with the permission of the lessee or renter of the vehicle but is not named on the lease or rental agreement. This is true even if he or she was the intended target of the tracking search. Additional complications under the standing doctrine make the trespass theory far more limited than the Katz v. United States reasonable expectation of privacy standard. As the Fourth Amendment right hinges on a defendant’s property interest in the automobile, resort to state property law is necessary to determine if a defendant satisfies the requirements for being an owner, bailee, or renter. Presuming the continued vitality of United States v. Knotts and United States v. Karo, the defendant must hold this possessory interest over the car trespassed upon at the moment of trespass. If police install a GPS tracker onto a vehicle before the target of the search borrows the vehicle, qualifying him as a bailee, or before he signs a rental contract, taking temporary and complete possessory control over the vehicle, then there is no unreasonable search as against the defendant. The installation predated the defendant’s ownership interest such that the defendant, albeit unknowingly, accepted possession of the property with the tracking device as part of the automobile.

Two hypothetical scenarios put a face to the above summary. First, if law enforcement wishes to gain tracking information on a drug kingpin who routinely travels by the same limo, police could attach a GPS device to the limo and the drug kingpin would lack standing to challenge any data produced by the GPS device. This is because the drug kingpin neither owns the vehicle nor rents or borrows it in such a fashion as to have sufficient control over it to assert a property interest in the vehicle. By placing the device on the vehicle before the drug kingpin’s contracted ride in the vehicle begins, police avoid the possibility of having gathered evidence excluded. Their search is identical to that in Karo in that the trespass occurs before THE defendant

199. See Jones, 132 S. Ct. at 961-62 (Alito, J., concurring in judgment) (arguing that state property law will define who owns property held by married couples such that both individuals in a marriage may be owners in one state regardless of the title registration while only the title-holder might be considered an owner, and covered by Jones, in another state).
202. See Jones, 132 S. Ct. at 961.
has a property interest, with THE defendant taking the property in an as-is form.203

Second, consider a situation where multiple individuals in a conspiracy share a vehicle. In this scenario, the titled owner loses his standing to challenge a warrantless GPS search at all times he is not an occupant in the car even if the device was installed while he had a technical possessory interest in the car by way of his ownership of the car.204 Further, the owner’s co-conspirators also lack standing because none of them owned the vehicle and their sharing and intermittent use of the vehicle deprives any individual conspirator of establishing exclusive possession over the vehicle for a long enough period of time to satisfy the possessory threshold for standing.205 In other words, where an owner frequently permits his co-conspirators to operate the vehicle, he has essentially opened his vehicle up to the public, diluting his property interest such that a Jones-based challenge may be untenable.

These hypotheticals show a disconnect between the method and purpose of the search. What is searched is an abstract part of the target individual rather than the car that serves only as a conduit for executing the search. Accordingly, using principles of property rights suitable for determining a physical item and applying those principles to the vehicle facilitating the Jones-style search entirely ignores the information for which police are actually searching when they attach a GPS device. In so doing, notions of reasonable expectations of privacy are swallowed up by issues of standing. Three scenarios underscore the issues surrounding standing under the trespass theory. Any effort to challenge a search immediately dissipates if the tracking device 1) is an intended part of property owned by defendant at the time of purchase, i.e., GPS devices within cell phones or automobile On-Star-type systems, 2) is installed at a location not falling within Fourth Amendment protection, i.e., installed in a location not within the “persons, houses, papers, and effects”206 protected categories, like in an

203. That said, even an installation during the period of time the drug kingpin has contracted for use of the vehicle may not constitute a trespass as against the kingpin’s property rights as the kingpin does not demonstrate true control or possession over the vehicle where the vehicle is operated by an employee of the company from which the kingpin contracts the vehicle.

204. United States v. Gibson, 708 F.3d 1256, 1276-77 (11th Cir. 2013).

205. See United States v. Gordon, No. 11-cr-20752, 2013 WL 791622, at *5-6 (E.D. Mich. Mar 4, 2013) (providing that only the defendant who owned the vehicles used by the defendants in the conspiracy could challenge the GPS search even though the individual defendants tended to drive the same car for month-long blocks during the course of the conspiracy); see also United States v. Shephard, 495 F. App’x 553, 558 (6th Cir. 2012) (reasoning that the defendant lacked standing to challenge GPS installation in co-conspirators’ vehicles where he did not own or drive the vehicle).

206. U.S. CONST. amend. IV.
open field or on a telephone pole, or 3) requires no installation, i.e., drones.

The issues defendants face in satisfying standing requirements do not predominate the Fourth Amendment reasonable search analysis under Justice Alito's rationale. Under Alito's reasoning, what is being searched—the person's movements—is something in which the person necessarily has an interest. This highlights the assertion that, in application, the trespass theory provides far more limited protection than the Katz test. When combined with the imminent likelihood of trespass-free searches, the need for a legislative solution addressing GPS searches is magnified.

2. Davis v. United States: Challenges Posed by the "Objective Reasonable Reliance" Doctrine

A second frequent obstacle to exclusion for defendants asserting Fourth Amendment challenges is the "objective[ ] reasonable reliance" doctrine. In Davis v. United States, the United States Supreme Court found that the defendants were unable to assert claims and gain exclusion under new rules of Fourth Amendment law announced after the violation occurred where law enforcement objectively and reasonably relied upon then-prevailing circuit precedent to engage in the now unconstitutional investigatory practice. With circuit courts necessarily weighing in on difficult questions of constitutional law before the Supreme Court addresses the issue, Davis causes a lag between the creation of the new rule/protection and its implementation/enforcement within the court system. This is a product of the exclusionary rule's purely deterrent grounding that would not be served by penalizing the government for conduct law enforcement believed complied with the law.

Prior to the Supreme Court's ruling in United States v. Jones, the United States Courts of Appeals for the Fifth, Seventh, Eighth, Ninth, Eleventh, and D.C. Circuits weighed in on the issue of whether warrantless prolonged tracking searches were unconstitutional where the search was conducted using a device installed on the target's vehicle. All but the D.C. Circuit approved such warrantless searches as constitutional. Additionally, the United States Court of Appeals for the

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209. See supra notes 113, 115. Note, first, that the Eighth Circuit ruling left open the possibility that reasonableness under Katz could be the source of a violation where the device was used for an unreasonably long duration of time. Second, while the Eleventh Circuit opinion was not precedential, the Fifth Circuit ruling was decided before the Eleventh Circuit was split off from the Fifth Circuit and thus was binding precedent.
Sixth Circuit concluded that the warrantless use of any electronic device to track a defendant’s public movements did not pose a Fourth Amendment problem\(^\text{210}\) and the Sixth Circuit has read this ruling as giving police an objective reasonable basis to believe that the installation of a GPS device on a vehicle did not present a Fourth Amendment issue.\(^\text{211}\) Accordingly, in the twenty-nine states falling within these circuits, the protection afforded by \textit{Jones} was automatically incapable of providing any relief to the numerous defendants searched before the \textit{Jones} ruling was issued.\(^\text{212}\) Two years post the ruling in \textit{Jones}, defendants continue to have their exclusionary motions denied by district courts on this ground.\(^\text{213}\)

The blocking effect of \textit{Davis}, however, extends past those circuits. Courts within other circuits point to \textit{Knotts} and \textit{Karo} as having rejected the role of property rights in tracking searches.\(^\text{214}\) With \textit{Jones} within the Eleventh Circuit. \textit{See} \textit{Bonner} v. City of Prichard, 661 F.2d 1206, 1207 (11th Cir. 1981) (announcing that decisions of the Fifth Circuit issued before September 30, 1981 are binding precedent in the Eleventh Circuit).

\(^\text{210}\) United States v. Forest, 355 F.3d 942, 951-52 (6th Cir. 2004).

\(^\text{211}\) See United States v. Fisher, 745 F.3d 200, 204-05 (6th Cir. 2014) (holding that circuit precedent from \textit{Forest}, 355 F.3d 942, permitting “pinging” of cell phones to acquire locational data gave officers an objective reasonable basis to believe that the use of an installed GPS device to acquire locational data without a warrant did not violate the Fourth Amendment).


\(^\text{214}\) United States v. Hohn, No. 14-3030, 2015 WL 1452877, at \#2-3 (10th Cir. 2015) (expounding that the installation of a GPS device on the defendant’s truck was objectively reasonable in light of United Supreme Court precedent from \textit{Knotts} and \textit{Karo}); United States v. Katzin, 769 F.3d 163, 174-177 (3d Cir. 2014) (en banc) (relying on precedent found in both \textit{Knotts} and \textit{Karo} and that those cases “discredited” the trespass doctrine within the Fourth Amendment); United States v. Stephens, 764 F.3d 327, 333 (4th Cir. 2014) (stating that “\textit{Knotts} was considered to be the ‘foundational Supreme Court precedent for GPS related cases’ prior to \textit{Jones}” (quoting United States v. Cuevas-Perez, 640 F.3d 272, 273 (7th Cir. 2011)); United States v. Baez, 744 F.3d 30, 35-36 (1st Cir. 2014) (347-day warrantless GPS search objectively reasonable under \textit{Knotts});
distinguishing Knotts and Karo, those cases presumably survive Jones regarding the constitutionality of tracking searches conducted absent a trespass. From this, should a future United States Supreme Court find prolonged tracking searches absent a trespass unreasonable under Katz, one would expect Knotts and Karo to support a finding of objective reasonable reliance by police and prevent exclusion of the unconstitutionally obtained evidence.

While the aforementioned circuit cases were overturned by Jones on property rights grounds, they too continue to stand for the proposition that an individual lacks a reasonable expectation of privacy in his or her public movements. This will delay the full implementation of future United States Supreme Court rulings, leaving another group of defendants without any effective remedy. Given the evolutionary nature of technology and its way of adapting to new legal rules, Davis presents a reoccurring obstacle for defendants seeking relief from tracking searches. Challenges to each new technology will produce new precedent, each of which is subject to Davis-delay. This not only supports the proposition that Jones represented the narrow- est of possible protections because it makes future Davis-delays inevitable but also highlights why the recurrence of Davis’s application can only be addressed through a legislative approach not subject to a Davis-style delay.

C. UNITED STATES SUPREME COURT’S RELIANCE ON JONES

Despite the arguable narrowness of the majority’s rationale in United States v. Jones, the United States Supreme Court has twice reaffirmed the prevailing property rights reasoning advanced in Jones. In the first of these cases, the Court relied on Jones to hold that where police enter the curtilage of the home, they commit a trespass and engage in a “search” for purposes of the Fourth Amendment. In so holding, the Court not only took the natural step of extending Jones to real property but also lauded the property rights theory’s ability to “keep[] easy cases easy” when determining whether a search occurred. Based on Jardines, we can expect lower

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215. Supra note 30.
218. Jardines, 133 S. Ct. at 1417.
courts to focus first on whether the questioned investigatory action by police infringed on the defendant's property rights before considering whether an alternate rationale—the defendant's reasonable expectation of privacy or the use of technology "not in general public use" to gather evidence—compels the conclusion that the police action constituted a search.\textsuperscript{220}

More recently, the United States Supreme Court relied on \textit{Jones} to hold that the placement of a GPS device in an ankle monitoring bracelet that the petitioner was compelled, by state statute, to permanently wear constituted a trespass on his person and a search within the meaning of the Fourth Amendment.\textsuperscript{221} As in \textit{Jardines}, the Court emphasized that the search target need not have a reasonable expectation of privacy over the evidence or data the government hopes to gather where the government action implicates the target individual's property rights and can only be accomplished through a trespass.\textsuperscript{222} The unanimity of the Court's concurrence-free, summary reversal of the state court's decision that no search occurred\textsuperscript{223} serves as a strong indication that \textit{Jones}' property rights theory will remain a permanent fixture in Fourth Amendment law. Conversely, \textit{Grady}'s\textsuperscript{224} unblemished reliance on property rights represents another missed opportunity for the United States Supreme Court to tackle the issue of whether the prolonged aspect of a locational tracking search presents an issue under the Fourth Amendment. However, as technology continues to become more sophisticated, such that police no longer need to invade a target individual's property rights to acquire the desired locational tracking data, the Court may no longer be able to avoid confronting the issue of whether an individual has a reasonable expectation of privacy in their movements over prolonged periods of time. Conflicts in rulings from lower courts regarding the constitutionality of tracking searches utilizing ever-developing technologies are already sprouting up.\textsuperscript{225}

\textsuperscript{220} See id. (noting no need to decide whether defendant had a reasonable expectation of privacy against the use of a drug-detection dog on his porch or whether a drug-detection dog is generally accessible to the public because these issues were "irrelevant" where the dog's presence on the porch constituted a trespass).


\textsuperscript{222} Grady, 135 S. Ct. at 1368-69.


\textsuperscript{225} \textit{Infra} notes 226-39 and accompanying text.
D. PREDICTING FUTURE TRACKING SEARCH CASES: TECHNOLOGICAL
SOPHISTICATION AS THE CENTERPIECE

Disputes amongst lower courts over the continuing strength of
United States v. Knotts and United States v. Karo already exist
and are fueled by the weight courts place on advancements in technol-
ogy when judging reasonableness. Lower courts, not attributing suffi-
cient significance to the advanced sophistication of present-day
tracking technology, sustain Knotts's and Karo's place even in deter-
mining the reasonableness of sophisticated and intimate GPS
searches. In doing so, these courts give full force to Scalia's reason-
ning for distinguishing Knotts and Karo, a distinction that did not ana-
lyze changes in technological capabilities. Similarly, lower courts,
although often acknowledging the concurrences in United States v.
Jones, ultimately view Jones's narrow, trespass-based holding as
not contravening Smith v. Maryland, which established the third-
party doctrine and permits the government warrantless access to infor-
mation that individuals convey to third-party telecommunication
companies. Accordingly, the majority of lower courts refuse to ex-
clude historical locational data gathered from cellular telephone tow-
ers because individual cell phone users voluntarily convey their
locational position to their cellular phone provider by choosing to pos-
sess a cellular phone.

Conversely, other lower courts attribute considerable significance
to changes in the method of installation, elimination of the need for

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228. See United States v. Sparks, 711 F.3d 58, 66 (1st Cir. 2013) ("[W]e think the
fact that the device was a GPS tracker rather than a beeper does not render Knotts
inapplicable. Certainly, a GPS tracker is more capable than a beeper, but nothing inheres
in the technology to take it out of Knott's holding," (internal quotation marks and
footnote omitted)).
229. Sparks, 711 F.3d at 66.
232. United States v. Guerrero, 768 F.3d 351, 359-61 (5th Cir. 2014); United States
v. Gomez, 575 F. App'x 84, 87 (3d Cir. 2014) (lower courts bound by Smith until majority
of Supreme Court adopts Justice Sotomayor's position); United States v. Rogers, 13 CR
10cr4246 JM, 2013 WL 6079518, at *7-8 (S.D. Cal. Nov. 18, 2013); but see United States
ing that the Government needed probable cause to conduct 60-day historical cellsite
data search); Tracey v. State, 152 So. 3d 504, 519-22 (Fla. 2014) (determining that the
Jones concurrences support the conclusion that a warrant is required for historical cell-
site searches despite lack of trespass); Commonwealth v. Augustine, 4 N.E.3d 846, 863
n.35 (noting that changes in technology to overcome third-party disclosure doctrine for
cellphone tracking data searches is based on reasoning in Smith).
233. Guerrero, 768 F.3d at 359-61; Gomez, 575 F. App'x at 87; Rogers, 2014 WL
5152543, at *3-4; Maolin, 2013 WL 6079518, at *7-8.
physical surveillance in tandem with using tracking technology, and increased sophistication of the device and data produced by GPS technology over beeper technology.234 With some courts holding firm to Knotts and KARO and others whistling away at them, it is only a matter of time before the United States Supreme Court will once again take up the issue of prolonged tracking searches, presumably involving technology more sophisticated than a vehicle-mounted GPS device. The notable sentiments of the Alito rationale and Sotomayor’s concurrence only increase this certainty. Based on the earlier discussion of ongoing technological advancements, this split could be enhanced as newer technology, such as drones, becomes the tracking device of choice.

Should such a case reach the United States Supreme Court, the Court will be presented with at least two grounds—the intimate nature of the surveillance and the duration of the search—for finding the search unreasonable. The choice the United States Supreme Court makes will go a long way in shaping the technology law enforcement is permitted to use and the development of new technology for law enforcement purposes.235 For instance, if the pinpoint, 100% accurate, detailed nature of the search proves determinative, it follows that technological research into improving informational capabilities of tracking devices, i.e., drones, marketed to domestic law enforcement agencies would decrease. Law enforcement would, instead, adapt its

234. See Klayman v. Obama, 957 F. Supp. 2d 1, 31-32 (D.D.C. 2013) (pointing to the Jones’s concurrences and the fact that metadata is far more sophisticated than the technology detailed in Knotts, KARO, and SMITH, such that NSA cell phone warrantless tracking searches violate Fourth Amendment); United States v. Robinson, 903 F. Supp. 2d 766, 766, 785 (E.D. Mo. 2012) (suggesting that Knotts and KARO cannot be assumed to continue to control review of tracking searches when current-day tracking searches deal “with different technology, . . . installed in a different fashion, . . . permit[ting] a different degree of intrusion.”); United States v. Ortiz, 878 F. Supp. 2d 515, 531 (E.D. Pa. 2012) (suggesting that Knotts and KARO are inapplicable to current-day technology because beeper technology is only functional “in conjunction with simultaneous visual surveillance.”); United States v. Martinez, No. CR F 10-339 (JJO, 2012 WL 1378491, at *2 (E.D. Cal. Apr. 19, 2012) (reading Jones to have “overturned” Knotts); United States v. Lee, No. 6:11-CR-65-ART-HAI, 2012 WL 1880636, at *13 (E.D. Ky. Mar. 22, 2012) (suggesting that the limited and qualified nature of Knotts in relation to more sophisticated technology suggested the general inapplicability of Knotts given current technology, especially in light of Jones that did not announce the same “unequivocal” rule found in Knotts); see also People v. Weaver, 909 N.E.2d 1195, 1199 (N.Y. 2009) (finding beeper technology “very primitive” when compared to GPS technology, “a vastly different and exponentially more sophisticated and powerful technology” such that GPS technology does not fall squarely within the rule from Knotts).

practices and seek out lower-tech devices still capable of tracking a suspect but dialed down to provide only basic and generalized data.

If the prolonged durational aspect proves central, an inverse shift in technological demands will occur. A premium on improving information capabilities to maximize data point volume and the accuracy of information gathered would dominate. Conversely, investments in extending the device's battery life and reducing maintenance needs would prove counterproductive and unnecessary in the domestic law enforcement setting given that current capabilities would outlast any projected durational reasonableness limitation. Further, if self-piloted, image-recognition tracking drones become available, one would expect law enforcement to program these drones to physically follow the target object for a prolonged duration but to only record and relay information for several short-set intervals, e.g., every Tuesday and Thursday between 10 a.m. and 10 p.m. for a month rather than every minute of every day for that month. 236 This would address the durational concerns by the time-tailored nature of the drone's use, as the drone's use matches the time investment a police officer, private investigator, or nosy member of the public might make by following the suspect around. 237

Regardless of the reasoning employed in future litigation, the majority's choice to decide Jones on the narrower property rights ground delayed the answer as to whether an individual ever holds a reasonable expectation of privacy in his/her public movements. This delay is important. A ruling based on whether the use of specific technology is reasonable partially depends on how widely used and embraced the

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236. Note that programming drones to record and relay data during a preset time period differs greatly from programming drones to record and relay data whenever the target object or vehicle is within a preset geographical area; the data received in the latter case are far more dependent on the drone's continual tracking in that if the drone did not continually track the target object or vehicle, it would not know when the target object or vehicle entered the desired preset geographic area. In the preset time scenario, if police learn, through personal observation, that an individual typically leaves his residence at a set time and program the drone to activate its recording and relay capabilities shortly before that time, the constant tracking by the drone merely puts the drone in the proper place to conduct effective surveillance (much like an officer driving to the location before starting surveillance).

237. This option would likely only be possible with self-piloting drones because, absent self-piloting, a governmental agent would be conducting a search of sorts merely by constantly piloting the drone in pursuit of the target object or individual. While procedures could be enacted to eliminate any possible investigative advantage from the constant radio-controlled piloting, even if the remote radio-controlled drone was set to only record or relay information at certain times and the pilot was separated from the rest of the investigative team, an unreasonable search would still occur. The evidence produced would be integrally related to and stemming from the unconstitutional search, such that absent the search, the evidence would not have been obtainable. See Wong Sun v. United States, 371 U.S. 471 (1963).
technology is in society.\textsuperscript{238} With GPS becoming more popular in everyday technology we buy, the window for finding GPS tracking searches unreasonable may close. Technically, the point of public saturation defeating a reasonableness challenge will be reached at the same time regardless of whether a defendant gets a favorable ruling before this future point in time. However, if a defendant reaches the United States Supreme Court and obtains a favorable reasonable expectation of privacy ruling, the protection gains a foothold that likely extends the time that the protection will apply for practical purposes. An individual lower court may hesitate significantly to make a landmark finding that a technology became widely used and popular enough to eliminate a protection blessed by the United States Supreme Court. As GPS devices are more commonly implanted into technology bought and used in everyday life and as drone technology further increases in popularity within commercial settings, it may not be long before we have to accept that the technology we apply for our own uses will be applied by police to track us. This conundrum dissipates if a legislative solution is adopted, a solution Justice Alito posits as the practical and likely approach based on how prior conflicts between evolving technology, the Fourth Amendment, and Supreme Court jurisprudence have resolved themselves.\textsuperscript{239}

V. A LEGISLATIVE PROPOSAL AND SOLUTION

As the above discussions of technology, the ruling in United States v. Jones,\textsuperscript{240} and the implementation and obstacles to invoking Jones demonstrated, a legislative solution presents several advantages in regulating tracking searches. First, even assuming that Justice Sotomayor provides a fifth vote for protecting prolonged searches, the cert process is slow and unpredictable. Vehicle problems typical of Fourth Amendment search cases only aggravate the delay before the United States Supreme Court revisits this issue. Second, the fact-in-


One can reasonably doubt that in 1967 Justice Harlan considered an aircraft within the category of future 'electronic' developments that could stealthily intrude upon an individual's privacy. In an age where private and commercial flight in the public airways is routine, it is unreasonable for respondent to expect that his marijuana plants were constitutionally protected from being observed with the naked eye from an altitude of 1,000 feet. The Fourth Amendment simply does not require the police traveling in the public airways at this altitude to obtain a warrant in order to observe what is visible to the naked eye.


\textsuperscript{240} 132 S. Ct. 945 (2012).
tensive nature of Fourth Amendment claims tends to limit their holdings such that they do not always apply to new technology in the way that a statutory scheme could. As a corollary to this point, when newly developed technology falls outside the legislative scheme, it is likely that the legislature will move to amend the existing provisions faster than the United States Supreme Court will receive and accept a case involving each new technology. Third, the enactment of legislation need not be accompanied by a Davis v. United States-based lag in implementation nor would its protections need to be plagued by issues of standing.

Legislative protection of Fourth Amendment rights against the use of new technology is not a foreign concept. Within the scope of wire and telephone communications data, Congress passed legislation establishing a warrant process for obtaining such data from phone carriers. This legislation created a legislative warrant requirement where no constitutional requirement existed. A legislative scheme exceeding announced constitutional protections is also warranted in response to increasingly prevalent tracking searches.

Several states passed legislation restricting the use of GPS tracking devices and/or requiring law enforcement to obtain a warrant when conducting tracking searches. While most of these statutes focus on installation-based tracking searches, they, combined with the federal wired and telephonic data statute, provide a strong starting point for proposing model uniform legislation. Key issues the statute needs to address include what form of tracking requires a warrant, when a search becomes “prolonged” necessitating a warrant, the standard for obtaining a warrant, the scope of the warrant as it relates to the person(s) and object(s) against whom evidence gathered can be used, jurisdictional and territorial limitations of the warrant, dura-

243. See Smith v. Maryland, 442 U.S. 735, 742 (1979) (finding no constitutional violation where police obtained individual call records through a pen registry because the individual had shared this information with a third party, the phone company).
244. FLA. STAT. § 934.42 (1989); HAW. REV. STAT. § 803-44.7 (2006); MINN. STAT. ANN. §§ 626A.35-37 (West 1988); OKLA. STAT. tit. 13, § 177.6 (2007); 18 PA. CONS. STAT. ANN. § 5761 (West 2012); S.C. CODE ANN. § 17-30-140 (2002); TEX. CRIM. PROC. CODE ANN. § 14 (West 2011).
245. Unlike the gathering of phone data, where an interstate element is obviously inherent to the device used and industry holding the information, placing a GPS device on a vehicle or using a drone to track a suspect within a single state does not clearly involve interstate commerce. For this reason, Congress's power to regulate state law enforcement action and establish a standard potentially more protective than the Constitution, absent use of its Spending Clause powers combined with agreement by the states, is doubtful. Accordingly, legislative action by Congress to cover federal law enforcement and by states to cover state law enforcement is needed. For this reason, I have termed the proposal a “model uniform proposal.”
tional limitations of the warrant, and the court through which to obtain a warrant.

A. **Forms of Tracking Requiring a Warrant**

The ideal statute would require a warrant whenever police seek to gather data from prolonged tracking searches. In selecting this standard, the model statute adopts Justice Alito's rationale. With movements integral to the person moving, the method of conducting the search—installation of a device on the target's property—would no longer be the only reason necessitating judicial pre-approval for the search. The statute would cover both tracking through GPS devices installed on any property and non-attachment-based tracking searches, including drone use. The model statute also covers retrieval searches of data stored on or through devices possessed by the individual.

B. **Durational Point at Which a Warrant Is Required**

Drawing a durational limit on warrantless tracking searches from legal sources is particularly difficult. As installation rather than duration serves as the triggering factor for needing a warrant under the majority of state statutes, the statutes do not provide a guide from which to work. Similarly, case law provides little guidance, with very wide and diffuse guide points, as no case has ever required the United States Supreme Court to draw a clean line. The three-day intermittent search from *United States v. Knotts* did not raise this issue. Piecing together the concurrences, the month-long continuous search from *United States v. Jones* seemingly crosses the constitutional line.

With societal norms as the centerpiece of Fourth Amendment reasonableness, one must determine the amount of surveillance the average citizen is willing to pay for or tolerate. Within the private setting, everyday citizens employ private investigators to perform surveillance on and detail the movements and actions of others in society. If one

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246. **FLA. STAT.** § 934.42(1) (1989); **MINN. STAT. ANN. §§ 626A.35(1) (West 1988); 18 PA. CONS. STAT. ANN. § 5761(a) (West 2012); S.C. CODE ANN. § 17-30-140(A) (2002); **TEX. CRIM. PROC. CODE ANN. § 14(a) (West 2011).**


249. 132 S. Ct. 945 (2012).

250. *See United States v. Jones*, 132 S. Ct. 945, 955-57 (2012) (Sotomayor, J., concurring) (suggesting that prolonged monitoring of a suspect's location would present a Fourth Amendment issue under Katz's reasonable expectation of privacy test); *Jones*, 132 S. Ct. at 964 (Alito, J., concurring judgement) (concluding that the prolonged monitoring of a suspect's location constitutes a search within the meaning of the Fourth Amendment).
looks at the average amount of money/hours of surveillance purchased, these figures establish a baseline for what degree of tracking society is willing to accept. Full legislative hearings to determine these figures are needed. If the following data are true – 1) the average private investigator retainer for serious matters such as surveillance connected to divorce or criminal cases is $3,500 to $5,000 and 2) private investigators normally make $60 to $65 an hour\textsuperscript{251} - then, factoring in expenses, one can conclude society is willing to purchase approximately fifty-five to eighty hours of surveillance (albeit likely in non-continuous form). From this, the line for when a search becomes "prolonged" could be set for both continuous searches and intermittent searches. The model statute would require obtaining a warrant for continuous searches planned for four days or more and for non-continuous searches planned for seven days or more, with twelve hours or more of surveillance on any day.

A second possible way of measuring societal expectations is to assess how much surveillance society was willing to tolerate before the use of GPS technology. One could look at police records from beeper technology cases and set the reasonableness limit based on the amount of time police actually followed beepers from a distance. Presuming the discoverability of these data, median police surveillance hours could be averaged with the above private investigator data. This merges the degree of tracking the society previously tolerated with the degree of tracking for which society currently pays.

C. **Standard for Obtaining a Warrant**

The model statute must choose between reasonable suspicion and probable cause when setting the standard for obtaining a warrant. Much discrepancy exists within legal authority on this question. The United States Supreme Court in *United States v. Jones*\textsuperscript{252} specifically left open the question of whether reasonable suspicion or probable cause absent a warrant could satisfy the reasonableness requirements in place of a warrant.\textsuperscript{253} Federal district and state courts alike recognize the unresolved nature of this question.\textsuperscript{254} A split between requiring reasonable suspicion versus probable cause for granting an order/


\textsuperscript{252} 132 S. Ct. 945 (2012).

\textsuperscript{253} *United States v. Jones*, 132 S. Ct. 945, 954 (2012) (stating that the Supreme Court had "no occasion to consider" the reasonable suspicion versus probable cause argument since the government failed to raise a reasonable suspicion basis for the search before the circuit court).

warrant authorizing a search exists within state statutes. Amongst judicial authority, some courts now find that there is a strong presumption that the installation of a tracking device is unreasonable in the absence of a warrant. Others read the Supreme Court’s mentioning of the unpursued reasonable suspicion or probable cause sans a warrant argument as support for their conclusion that one of those lower standards satisfies constitutional requirements for installing a tracking device.

Judicial authorities requiring only reasonable suspicion compare the intrusion imposed by a tracking search to that imposed by a Terry Stop and Frisk and cite Terry v. Ohio in support of requiring mere reasonable suspicion. This view, while in line with the narrowness of the Jones holding, focuses too much attention on the physical intrusion, overlooking the disparity between the information gathered through a Terry Stop and Frisk versus a tracking search. Whereas a Terry Stop and Frisk allows police to search and seize items resembling a weapon, a GPS tracking search provides police with intimate information about the suspect’s comings and goings well beyond the intrusion imposed by a Terry Stop and Frisk. The limited items able to be seized during a Terry Stop and Frisk do not provide the detailed picture of an individual’s life that prolonged tracking reveals. Police unable to rifle through a suspect’s wallet during a Terry Stop and Frisk, turning up business cards of locations—potentially intimate in nature—visited by the suspect, should not obtain similar information from a tracking search where only reasonable suspicion supports the search. The extended length of the intrusion


258. 392 U.S. 1 (1968).


In Terry the Court first recognized ‘the narrow authority of police officers who suspect criminal activity to make limited intrusions on an individual’s personal security based on less than probable cause.’ In approving the limited search for weapons, or ‘frisk,’ of an individual the police reasonably believed to be armed and dangerous . . . .

Id. (citation omitted).

261. Supra notes 49-53.

262. See supra notes 49-53, 169-70 and accompanying text.

263. See supra notes 49-53, 169-70, 260 and accompanying text.
imposed by a tracking search is in stark contrast to the brevity of a Terry Stop and Frisk.264

Apart from direct comparison to Terry Stop and Frisks, the government, post Jones, argues that the intrusion cost is minimal when balanced against law enforcement’s need to perform these searches.265 Similar to addressing the Terry Stop and Frisk comparison, courts found the intrusion far greater than the physical space occupied by a tracking device, calling the intrusion a “significant intrusion on Fourth Amendment privacy rights.”266 The earlier exposed technological differences between simplistic beeper devices and GPS technology is a key distinguishing factor for courts discounting the government’s minimal personal-intrusion claim.267 These differences between Terry Stop and Frisks—the standard bearer for a reasonable suspicion test—and GPS tracking searches and the existence of a “significant” privacy intrusion help explain why the majority of lower courts adopt a probable cause standard over reasonable suspicion.268 As the stronger of the two standards matches the majority statutory position, the model statute will adopt the traditional probable cause standard as the threshold for a search to be permissible under the statute.

The question remains whether, absent a warrant, a post search showing of probable cause makes a tracking search reasonable. All existing statutory provisions require police to first seek a judicial order/warrant authorizing the search.269 Reliance on ex post judicial probable cause review is treated with skepticism in United States Su-


265. See United States v. Ortiz, 878 F. Supp. 2d 515, 530-33 (E.D. Pa. 2012) (rejecting the Government’s argument that intrusion and trespass are minimal when compared to the important evidence a tracking search can yield such that an exception to the warrant requirement is appropriate where police have reasonable suspicion to believe warrantless installation of a tracking device will yield evidence of a crime).

266. Ortiz, 878 F. Supp. 2d at 531-32; see also United States v. Hermiz, 42 F. Supp. 3d 856, 866 (E.D. Mich. 2014) (requiring a warrant for GPS tracking search to be reasonable).


268. See Ortiz, 878 F. Supp. 2d at 530-33 (identifying a different investigatory purpose behind Terry stops and the use of tracking devices and the greater intrusion accompanying tracking searches to reject proposition that tracking search is reasonable under the Fourth Amendment when predicated on reasonable suspicion); Ford, 2012 WL 5366359, at *11-12; Fisher, 2012 WL 6913429, at *14; see also United States v. Lee, 862 F. Supp. 2d 560 (E.D. Ky. 2012); State v. Zahn, 812 N.W.2d 490, 494-99 (S.D. 2012).

preme Court Fourth Amendment jurisprudence.\textsuperscript{270} To avoid obtaining a warrant, a search must fall under one of the recognized exceptions to the warrant requirement.\textsuperscript{271} While an outlier case may require instantaneous attachment, the government is hard-pressed to argue that it is significantly burdened by obtaining a warrant when the police in \textit{Jones} secured a warrant but merely failed to follow the warrant’s confines.\textsuperscript{272} Courts addressing the government’s burden contention note the parallel between GPS installation and the installation of other surveillance equipment in public, e.g., video cameras, where police routinely obtain warrants without great burden.\textsuperscript{273}

Failing to prevail on a burden-based argument, the government also claims the automobile exception to the warrant requirement permits stand-alone probable cause to satisfy Fourth Amendment reasonableness.\textsuperscript{274} This overlooks the rationale behind the automobile exception and what is being searched when tracking technology is employed. An automobile may be searched absent a warrant where probable cause exists because of the vehicle’s mobile nature as absent the probable cause-based search, the evidence in the vehicle may disappear once the car leaves police control.\textsuperscript{275} With GPS searches, the fruit of the search is neither a tangible object nor a destroyable object within the car but is the movements of the individuals who operate or travel in the vehicle. While there is a risk that police are unable to locate the vehicle after obtaining the warrant, given police success in finding the vehicle in the first instance before obtaining a warrant and DMV registry information, the likelihood of this possibility is not sufficient to support general application of the automobile exception to tracking searches.

Furthermore, the argument for applying the automobile exception to tracking searches is circular in that probable cause of an ongoing or future crime will include information about where and when that crime will occur. Certainly, as discussed below, the government should be able to provide some territorial scope for its GPS search so that movements and activities unquestionably unrelated to the criminal investigation are not caught up by the search, i.e., if the suspect leaves the geographical area where police have probable cause to believe a crime will occur, then the model statute would compel that the tracking search be suspended until the suspect re-enters the geographical area of interest. Where these locational data are necessary

\textsuperscript{270} Mincey v. Arizona, 437 U.S. 385, 393-94 (1978).
\textsuperscript{271} Mincey, 437 U.S. at 393-94.
\textsuperscript{272} Jones, 132 S. Ct. at 948 n.1.
\textsuperscript{273} Ortiz, 878 F. Supp. 2d at 532.
\textsuperscript{274} \textit{Id.} at 534.
\textsuperscript{275} Carroll v. United States, 267 U.S. 132 (1925).
to probable cause for setting the scope of the search, law enforcement necessarily has an idea of where the automobile will be in the future such that fears of evidence loss underlying the automobile exception are not obviously applicable. 276 With the majority of courts adopting a probable cause warrant requirement by rejecting the application of exceptions to the warrant requirement or reading Jones to per se require a warrant, and with several state statutory schemes also adopting the probable cause standard, the model statute will follow suit and require reasonableness be met through a warrant supported by probable cause.

D. Scope of Individuals Protected by Warrant Requirement

Where this proposal deviates most from the existing statutes is in whom the warrant requirement seeks to protect. The majority of state statutes focus on the object facilitating the search and it is only a secondary requirement that individuals with an ownership interest in the property be named in the warrant request.277 One state goes slightly further, requiring the warrant application to name all individuals “likely to have a reasonable expectation of privacy” in the object facilitating the search.278

Focusing on the individual being tracked, the model statute requires a probable cause finding specific to the targeted individual. In this respect, the model statute closely resembles statutes from Hawaii and Minnesota, which require warrant applications to name all individuals targeted by the search.279 A layer of additional protection is needed by focusing the probable cause analysis on each of those individuals targeted and conferring standing upon any individual chal-

276. Potentially, situations may arise where police seek to use GPS for an extremely short-term search. Possibly, an exception to the warrant requirement should be included in the statute for such single-use, short-term situations. This will likely come down to a judgment call regarding whether manual surveillance imposes too great a burden in those situations and whether such an exception would be open to abuse by police either through repeated use by police against the same target individual or by police attaching the device under the short-term exception and then applying for a warrant when it becomes apparent that longer-term surveillance would be beneficial. As this scenario presents more of a fine nuance within the statutory scheme rather than an item central to the statute, I will opt not to undertake performing that balancing test past suggesting that both approaches appear rational.


lenging “intentionally gathered” data tracking their own movements through technological means.

Admittedly, violating the statutory warrant requirement when gathering evidence would not create a constitutional basis for exclusion. This shift in focus to the individual, however, would be coupled with a statutory provision requiring exclusion where the government seeks to admit “intentionally gathered” evidence against any individual not named in the tracking search warrant request. Focusing on the individual will protect targeted individuals from searches using a pre-implanted GPS device found in current day technology owned by the targeted individual. It also has the benefit of protecting against the use of installation-free tracking searches, including those relying on drones.

E. JURISDICTIONAL AND TERRITORIAL LIMITATIONS ON WARRANTS

The model statute would limit the territory in which police may attach and monitor a tracking device. One of the issues with the actual installation in United States v. Jones was that the installation occurred outside of the jurisdiction in which the warrant was issued. That is, the warrant was issued in the District of Columbia and authorized installation only in D.C., but installation occurred in Maryland. With much of the statutory action needing to occur on the state level, territorial limitations on the installation and tracking must be considered. This is particularly true given recent district court decisions concluding that the installation of a tracking device outside of the territorial limits in a warrant does not render the collection of tracking data inadmissible even when the installation may violate the laws of a neighboring state. Regulating the place of installation, however, is consistent with the statute’s goal of regulating tracking rather than just the trespass produced by installation.

Existing state statutes governing mobile tracking devices uniformly place territorial limitations on where installation of the device may be completed, such that the installation must occur within the jurisdictional area of the court issuing the order or warrant. As to

280. “Intentionally gathered” is defined as information purposefully sought by police at the onset of their search. Drawing from the plain view doctrine, movement-based information on a secondary individual that police happen to come upon while executing a valid warrant against a target individual would not be excludable.
285. Supra note 244.
monitoring, a few statutes do not speak to any territorial limitations, thus implicitly allowing monitoring outside of the state so long as installation occurs within the state.\textsuperscript{286} However, the majority of statutes expressly speak to limiting permissible monitoring to within the state in which the order or warrant was issued.\textsuperscript{287}

Even under Jones's narrow trespass theory, the trespass is not isolated to the moment of installation and instead lasts for the duration of time that the device remains attached to the vehicle.\textsuperscript{288} Statutes read to permit monitoring outside of the order/warrant-issuing state effectively authorize a trespass in another state. A warrant pursuant to one state's statute should not counteract the laws of another state by authorizing a trespass in that second state. Aside from this important issue, by not applying a territorial limit on monitoring, the focus of the statute necessarily defaults to the installation of the GPS device. In doing so, the statute would have little force past the protection already granted by Jones, defeating the goal of proposing a statute covering non-installation-based tracking searches. Accordingly, the territorial scope of a search warrant issued by a state court pursuant to the statute should not exceed the territorial boundaries of the state.\textsuperscript{289}

This limitation on state warrant authority would not eliminate a law enforcement agency's ability to obtain a multi-jurisdiction warrant. Obviously, criminal activity often crosses state lines. This is especially true when investigating drug trafficking, which is most likely to rely on tracking searches to yield valuable evidence.\textsuperscript{290} Where such occurs, the earlier concern of limited congressional power to provide for warrants\textsuperscript{291} disappears because an interstate element is present. Keeping that in mind, a comprehensive scheme, including both state and federal legislation, is highly optimal so that state law enforcement seeking to investigate an individual whose expected travel plans in-


\textsuperscript{288} Note that this is not to be conflated with the complete absence of a trespass where the attachment occurs before the individual takes possession of the vehicle, accepting the vehicle as is with the tracking device.

\textsuperscript{289} Of course, the boundaries set out in any given search warrant should be narrower than the entirety of the issuing state's territory where probable cause is limited to a sub-area of the state, rather than the entirety of the state.


\textsuperscript{291} Supra note 244.
clude entry into another state could apply to a federal court for an interstate warrant.

The fact that a suspect will travel in a state or across multiple states does not eliminate conversation regarding the territorial scope of warrants. Just like police must specify precise areas to be searched when applying for non-tracking search warrants, it follows that they must specify a set territorial area when applying for tracking-based search warrants. Under the model statutes, police must identify the territorial area in which they have probable cause to collect tracking data on the suspect. This requirement will focus the search on those activities and movements of the suspect connected to the criminal activity being investigated. This constraint avoids intruding on other aspects of the suspect's life unrelated to the criminal activity, e.g., an out-of-state family vacation or a Sunday morning trip to church. In this respect, not only should there be a jurisdictional limitation on the effect of the warrant but also the warrant request must specify the territorial areas where there is probable cause to believe the target individual's movements are connected to and will provide evidence of a crime.

F. Expiration of Warrants

Where police obtain a warrant through a territory-specific probable cause showing, some outer constraint or expiration date should be placed on the warrant. Existing statutes differ on the maximum time limit for which a warrant remains valid. Statutes opt for either a sixty- or ninety-day outer limit. These time limits are typically, but not always, specifically subject to continued extensions based on the reaffirmation of probable cause. Further, the clock does not usually begin to run until the device has been installed and activated rather than from the date the initial warrant was issued.

Concerns about the prolonged nature of the search are vastly different where the search is approved by a court, per a probable cause determination, rather than without judicial oversight at the whim of police. Unlike in the latter situation, where a warrant is obtained, probable cause requirements already confine the duration of the inva-


294. Supra note 293.
sion. If probable cause exists to believe that a crime will be ongoing for the next month, then a thirty-day warrant is appropriate; if for the next three months, then a ninety-day warrant is appropriate. While having some time limit and a renewal provision is necessary, the specifics of these limitations are highly discretionary. So long as the time period selected for each warrant issued under the statute matches the period of time over which police establish probable cause in the case, the maximum statutory time period for a warrant represents a policy choice not implicating constitutional concerns. The key to such a provision is that the outer limit does not unnecessarily confine or burden law enforcement interests.

G. COURT FOR OBTAINING A TRACKING WARRANT

The model statute must delegate warrant-issuing authority to existing courts of competent jurisdiction or create special courts to hear tracking search warrant applications. State statutes and federal wire and telephone record and domestic wiretap statutes allocate, by a strong majority, authority to grant a warrant to existing courts of competent jurisdiction. An exception to this position exists in Hawaii, where the state supreme court designates a circuit judge to handle mobile tracking device warrant requests.295 The example of international surveillance where special Foreign International Surveillance Courts have been established to handle these specialized warrant requests represents a second exception.296

Much like setting a durational limit, determining the court or judge to which requests are addressed is a discretionary policy matter that does not carry with it significant constitutional concerns. Given the complexity and always-evolving nature of technology, benefits flow from judges reviewing applications having specialized knowledge. Concentrated review of warrant applications by select judges furthers this advantageous approach. However, a determination of whether there is a sufficient volume of warrant applications to produce this result is needed. Support for the formation of a special court to hear warrant requests depends on if, or when, a critical mass of applications exist. As states and federal domestically oriented tracking warrant statutes have favored assigning warrant requests to courts of general jurisdiction, the model statute will adopt this approach but keep an eye toward a more specialized system in the future.

295. HAW. REV. STAT. § 803-44.7(a)-(b).
VI. CONCLUSION

Justice Scalia writing for the Court in *Jones*\(^{297}\) revived property rights as a basis for finding a Fourth Amendment violation. Many saw this as a revolutionary and broad approach to Fourth Amendment law. However, in the face of evolving technology, the rebirth of property rights actually serves as the narrowest, least effective, and short-lived means of protecting an individual against government efforts to obtain a detailed, twenty-four hour, seven-day-a-week recording of a person’s movements. As knowing a person’s precise location every minute of the month provides police with highly intimate knowledge regarding the person’s “political and religious beliefs, sexual habits, and so on,”\(^{298}\) a broader rationale is required for when a warrant, or at least warrantless probable cause, is needed. This is particularly true given the additional obstacles presented by the standing doctrine when property rights serve as the sole determinate regarding whether a warrantless tracking search is reasonable or unreasonable under the Fourth Amendment. Accordingly, with the evolution of new technologies, one might be optimistic that a future case will cause the United States Supreme Court to adopt Justice Alito’s concurring rationale. However, as Fourth Amendment cases typically produce narrow, fact and technology specific holdings, technological developments appear certain to outpace Supreme Court jurisprudence. Therefore, the surest way to protect individuals against wide-ranging, dragnet-style tracking searches is to adopt comprehensive legislation that is more able to predict the future developments of technology and is more readily suited to modification and amendment as technology advances in the field of tracking searches.

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