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Keeping Up With Officer Jones: A Comprehensive Look at the Fourth Amendment and GPS Surveillance

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NOTES

KEEPING UP WITH OFFICER JONES: A COMPREHENSIVE LOOK AT THE FOURTH AMENDMENT AND GPS SURVEILLANCE

*Kaitlyn A. Kerrane**

Each day, individuals use technological devices to make their lives easier. One such device is the Global Positioning System (GPS), which has increasingly gained popularity in recent years. Police use of GPS in robbery, drug, murder and other investigations has also increased. Several high profile cases have brought the law enforcement uses of GPS into the public eye and elicited a public response. Warrantless installation and monitoring of these devices for up to months at a time have been challenged as unreasonable Fourth Amendment searches.

The U.S. Supreme Court has not decided on the constitutional issues raised by police GPS monitoring. Recent cases such as United States v. Maynard *and* United States v. Pineda-Moreno *illustrate the lack of consistency in the federal courts' approach in addressing the Fourth Amendment implications raised by these devices. This Note examines the Fourth Amendment issues surrounding both the installation and monitoring of GPS units. It examines the disagreement among the courts in dealing with the warrantless installation of the GPS device, as well as the federal circuit split regarding monitoring.*

This Note asserts that a reasonable expectation of privacy exists in both the installation and monitoring of a GPS unit in light of several considerations: property interests, public exposure, the nature of the police intrusion, and the type and quantity of information obtained. The differences between the former and current technology also point to a reasonable expectation of privacy. Ultimately, this Note advocates a warrant requirement for both the installation and monitoring of GPS devices to uphold the protections of the Fourth Amendment. A clear warrant requirement developed by the Supreme Court or Congress would protect individual rights while providing appropriate guidance to law enforcement officers moving forward.

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TABLE OF CONTENTS

INTRODUCTION

Washington, D.C.: Law enforcement officers attached a Global Positioning System (GPS) device to Antoine Jones' Jeep without a warrant or his consent,[1] monitoring his movements twenty-four hours a day for one month.[2]

Portland, Oregon: Drug Enforcement Agency (DEA) agents installed GPS surveillance devices onto Juan Pineda-Moreno's Jeep on at least seven occasions.[3] Once, they attached a device at his place of work.[4] At least three times, the agents installed the device at the curb of Pineda-Moreno's home.[5] Twice, they entered his driveway to attach the device.[6] Over four months, law enforcement officers recorded and tracked Pineda-Moreno's movements.[7]

Lebanon, Pennsylvania: DEA agents installed a GPS device onto Edward Jesus-Nunez's Mercedes without a warrant.[8] One month later, agents attached an additional GPS device onto another of Jesus-Nunez's vehicles.[9] Police monitored the devices for over ten months without any warrants.[10]

Santa Clara, California: College student Yasir Afifi found a GPS device attached to his vehicle.[11] His acquaintance posted its likeness on the internet to determine the device's purpose.[12] The FBI then arrived at his apartment complex, retrieved its device, and indicated that Yasir was under surveillance.[13]

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1. United States v. Maynard, 615 F.3d 544, 566–67 (D.C. Cir.), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *and cert. denied*, 131 S. Ct. 671 (2010).
2. *Id.* at 558.
3. United States v. Pineda-Moreno, 591 F.3d 1212, 1213 (9th Cir.), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 20, 2010) (No. 10-7515).
4. *See* Petition for Writ of Certiorari at 3, *Pineda-Moreno*, No. 10-7515 (Nov. 20, 2010).
5. *Pineda-Moreno*, 591 F.3d at 1213; *see also* Petition for Writ of Certiorari, *supra* note 4, at 3.
6. *Pineda-Moreno*, 591 F.3d at 1213; *see also* Petition for Writ of Certiorari, *supra* note 4, at 3.
7. *Pineda-Moreno*, 591 F.3d at 1213.
8. United States v. Jesus-Nunez, No. 1:10-CR-00017-01, 2010 WL 2991229, at *1–2 (M.D. Pa. July 27, 2010).
9. *Id.* at *1.
10. *Id.* at *1–2.
11. Kim Zetter, *FBI Allegedly Caught Using GPS To Spy on Student*, CNN.COM (Oct. 08, 2010), http://articles.cnn.com/2010-10-08/tech/fbi.tracks.student.wired_1_device-gps-fbi?_s=PM:TECH.
12. *Id.*
13. *Id.*

Latham, New York: State police agents climbed underneath Scott Weaver's van in the early morning to attach a GPS device.[14] This device could identify both the speed of the van and its location to within thirty feet.[15] Police monitored his movements continuously for sixty-five days.[16]

Across the country, police utilize GPS surveillance as an investigative tool.[17] Many police departments will not comment on the extent of the use of this technology, but the evidence indicates an increase in general law enforcement use.[18] Often law enforcement officials lack a valid warrant to install or monitor the device.[19]

The Federal Circuits and state courts of last resort have split on whether law enforcement use of GPS surveillance constitutes a search under the Fourth Amendment.[20] The U.S. Supreme Court has not yet decided the validity of warrantless installation or monitoring of a GPS unit under the Fourth Amendment, but it has been asked to consider the issue.[21]

This Note discusses both the constitutionality of the installation and monitoring of a GPS device to fully illustrate the potential Fourth Amendment implications of GPS surveillance. Courts have typically only focused on monitoring, but both aspects implicate the Fourth Amendment. Though installation and monitoring are closely linked, and obviously rely on one another for functionality, this Note addresses them separately for clarity since the analyses have slightly different considerations. This Note provides a comprehensive overview of the constitutional issues and current debate.

Part I discusses the current GPS technology and how law enforcement uses the devices. The discussion also includes an overview of the Fourth Amendment and the reasonable expectation of privacy. Part I continues by

14. People v. Weaver, 909 N.E.2d 1195, 1196 (N.Y. 2009).

15. *Id.*

16. *Id.* at 1195–96.

17. *See generally* Ben Hubbard, *Police Turn to Secret Weapon: GPS Device*, WASH. POST, Aug. 13, 2008, at A1, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2008/08/12/AR2008081203275.html (discussing use generally, and specifically by Virginia police departments); Brian Smith, *Without Warrants, Police Use Trackers To Follow Suspects*, RICH. REG., Sept. 27, 2009, at A1, *available at* http://richmondregister.com/homepage/x546339112/Without-warrants-police-use-trackers-to-follow-suspects (reporting on an investigation into GPS use in Richmond, Virginia); *Morning Edition: GPS Devices Do the Work of Law Enforcement Agents*, (National Public Radio broadcast Oct. 27, 2010), *available at* http://www.npr.org/templates/story/story.php?storyId=130851849 [hereinafter *GPS Devices*] (interview of Carol Johnson by Steven Inskeep regarding the general increase in use of GPS devices by law enforcement agencies).

18. Hubbard, *supra* note 17 (stating that the police have various surveillance techniques they do not want to disclose to the public); Smith, *supra* note 17 (reporting the Richmond Police Chief refused to comment on investigative techniques including GPS).

19. *See, e.g.*, United States v. Sparks, No. 10-10067-WGY, 2010 WL 4595522, at *2 (D. Mass. Nov. 10, 2010).

20. *See* Petition for Writ of Certiorari, *supra* note 4, at 8–13 (summarizing the federal and state level splits).

21. *See id.* at 1.

analyzing how the Supreme Court has treated the constitutionality of both the installation and monitoring of older types of tracking devices in the past to provide a framework for the modern debate.

Part II explores the current federal circuit split as to whether the installation and monitoring of GPS devices constitutes a Fourth Amendment search. It also identifies select legislative responses to GPS installation and monitoring. Part III asserts that an individual has a reasonable expectation of privacy in her vehicle and its movements, which is violated by GPS installation and monitoring. Ultimately, this Note advocates a warrant requirement for installing and utilizing GPS devices for police tracking purposes.

I. UNDERSTANDING GPS TECHNOLOGY AND HOW THE FOURTH AMENDMENT IS APPLIED

The jurisprudence of the Fourth Amendment must constantly evolve to adapt to changing societal expectations and technological capabilities. This section discusses current GPS devices, past tracking technology, and the Fourth Amendment. Part I.A presents information on the current state of GPS technology. Part I.B provides a historical background of the Fourth Amendment and its basic requirements. Part I.C discusses the mechanics of a Fourth Amendment analysis and outlines the considerations used in its application. Part I.D analyzes how the Supreme Court has dealt with the installation and monitoring of tracking devices in the past.

A. GPS: Understanding the Technology and Its Current Use

An understanding of the workings and capabilities of GPS technology shows how its use by law enforcement officers could potentially violate the Fourth Amendment. This section explains the basics of GPS technology, discusses how police utilize the technology, and identifies the differences between GPS technology and past law enforcement tracking devices.

1. GPS: How It Works and What It Can Do

All GPS devices work in essentially the same manner. GPS satellites transmit information to GPS receiver devices on the ground.[22] The receiver then estimates its distance from a particular satellite to determine its general surface location.[23] By connecting with four satellites, the receiver can determine its latitude, longitude, and elevation.[24] GPS accuracy depends on the type of receiver, but the government reports that typical precision is

22. *See* Dorothy J. Glancy, *Privacy on the Open Road*, 30 OHIO N.U. L. REV. 295, 308–09 (2004).

23. *How Does GPS Work?*, SMITHSONIAN NAT'L AIR & SPACE MUSEUM, http://www.nasm.si.edu/gps/work.html (last visited Feb. 23, 2010).

24. *Do You Know Where You Are?—The Global Positioning System*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. NAT'L OCEAN SERV. EDUC. (Mar. 25, 2008), http://oceanservice.noaa.gov/education/kits/geodesy/geo09_gps.html.

within eight meters.[25] In addition, by taking varied readings, GPS trackers can provide information about the speed and direction of the targeted vehicle, as well as the time spent at a location.[26]

GPS functions in all weather systems.[27] The current technology works equally well indoors and out.[28] GPS technology gets more advanced every year and will undoubtedly continue to do so.[29]

Originally designed by the military in the 1970s, GPS use has steadily increased.[30] Private use GPS units became increasingly common throughout the 1990s and 2000s as the government upgraded and increased the number of satellites.[31] Private use continues to increase and the Department of Defense plans to launch an additional block of satellites in 2011 to accommodate more users.[32]

2. Law Enforcement Uses for GPS Technology

The GPS system satisfies many law enforcement needs. The police can easily obtain, attach, and monitor the units.[33] The new technology costs significantly less than the human monitoring necessary to physically track a suspect.[34] The devices can record extensive information that police can

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25. *Frequently Asked Questions*, NAT'L COORDINATION OFF. FOR SPACE-BASED POSITIONING, NAVIGATION & TIMING, http://www.gps.gov/support/faq/ (last visited Feb. 23, 2010) (reporting "accuracy of 7.8 meters" with "95% confidence"); *see also* Hubbard, *supra* note 17 (describing the abilities of typical law enforcement GPS systems). Some types of devices have even better accuracy. *See* Glancy, *supra* note 22, at 309 (noting that differential GPS has accuracy of up to one meter); Renée McDonald Hutchins, *Tied Up In* Knotts*? GPS Technology and the Fourth Amendment*, 55 UCLA L. REV. 409, 420 (2007) (noting the European Galileo GPS satellite system can achieve one meter accuracy).

26. *See* John S. Ganz, Comment, *It's Already Public: Why Federal Officers Should Not Need Warrants To Use GPS Vehicle Tracking Devices*, 95 J. CRIM. L. & CRIMINOLOGY 1325, 1328–29 (2005) (reporting typical accuracy within two miles per hour); Hubbard, *supra* note 17 (discussing the use of the speed element to arrest a slow moving individual in residential neighborhoods where abductions were occurring).

27. *See* Hutchins, *supra* note 25, at 418 (stating that precipitation, fog, and sand do not affect the GPS).

28. *See id.* at 420.

29. *See* Susan J. Walsh & Ivan J. Dominguez, *Privacy and Technology: Law Enforcement's Secret Use of GPS Devices*, CHAMPION MAG., May 2009, at 29, *available at* http://www.nacdl.org/public.nsf/0/6666338cb48c6cf9852575e600629c0c?OpenDocument (noting that today's technology has improved from only a few years ago and is always increasing in capability while simultaneously decreasing in cost).

30. *The GPS Revolution—GPS: A New Constellation*, SMITHSONIAN NAT'L AIR & SPACE MUSEUM, http://www.nasm.si.edu/gps/revolution.html (last visited Feb. 23, 2010).

31. *Id.*; *see also* Hutchins, *supra* note 25, at 414 (noting a 2005 increase to twenty-nine satellites); Hubbard, *supra* note 17 (describing an increase in use and decrease in cost since civilian use began in 1996).

32. *See* Jim Garamore, *Lynn Discusses Budget Priorities for Space*, U.S. DEPT. OF DEFENSE (Apr. 14, 2010), http://www.defense.gov/News/NewsArticle.aspx?ID=58751.

33. Ganz, *supra* note 26, at 1329 (discussing low costs and small size); *see also* Hutchins, *supra* note 25, at 419 (describing a GPS device that "measures just 2.56 inches by 1.7 inches by 1.1 inches and weighs just over three ounces"); Smith, *supra* note 17 (describing the local drug task force's GPS units as "small, lightweight, ruggedized, reliable, easy-to-use and easy-to-install" (internal quotation marks omitted)).

34. 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.

only otherwise obtain by constant physical surveillance, an unlikely reality for law enforcement.[35] The recordings provide more accurate and undistorted information to the police.[36] In addition, remote GPS tracking removes the safety risk to police officers who physically track suspects.[37] Law enforcement has access to progressively more advanced GPS surveillance devices to track subjects, which compounds these benefits.[38]

Police departments can use GPS units in a variety of law enforcement contexts.[39] Police used the technology in the high profile Scott Peterson murder trial to show visits by the defendant to the crime scene.[40] A Virginia police department utilized the technology to track a man suspected of abducting and sexually assaulting women.[41] Police often use the technology in drug investigations, robbery investigations, and probation contexts to monitor the movements of the suspects.[42] The GPS also has implications for catching terrorist suspects.[43]

3. Beepers v. GPS: Similarities and Differences

Law enforcement agents have used tracking devices for decades. In the 1970s and 1980s, police used radio transmitter (beeper)[44] technology.[45]

1349, 1374–75 (2004) (discussing how new technology decreases time and monetary costs); Ganz, *supra* note 26, at 1357 (comparing the few hundred dollar costs of GPS technology with the $1920 cost of a typical physical tail of the suspect).

35. *See* Glancy, *supra* note 22, at 300 (discussing how high manpower costs and the reactions of individuals being physically watched severely limit long-term physical tracking); Recent Case, United States v. Garcia, *474 F.3d 994 (7th Cir. 2007)*, 120 HARV. L. REV. 2230, 2233–34 (2007) (noting that constant physical surveillance was cost prohibitive and GPS allows for "cost efficient fishing expeditions"); *GPS Devices*, *supra* note 17 (describing GPS as a "failsafe" way to track).

36. Ganz, *supra* note 26, at 1355–56 (discussing the higher accuracy of technological evidence).

37. *Id.* at 1356.

38. *Compare* United States v. Knotts, 460 U.S. 276, 277 (1983) (primitive beeper technology), *with* People v. Weaver, 909 N.E.2d 1195, 1196 (N.Y. 2009) (Q-ball GPS device—a GPS device that is battery operated), *and* Hutchins, *supra* note 25, at 418–19 (describing GPS "darts" that police can shoot at passing cars to provide instantaneous tracking). Generally, the use of all types of GPS devices have been increasing. *See* Smith, *supra* note 17 (reporting that local budgets and expenditure reports reflect the purchase of additional GPS units); *GPS Devices*, *supra* note 17 (discussing the Department of Justice's increasing use of GPS).

39. *See* Ganz, *supra* note 26, at 1330–32; Hubbard, *supra* note 17 (stating that Virginia police used GPS in robbery, narcotics, and homicide investigations).

40. Ganz, *supra* note 26, at 1329–30; *see also* Hutchins, *supra* note 25, at 447–48 (describing use of GPS to find a victim's body by tracking the suspect to the site).

41. Hubbard, *supra* note 17.

42. Ganz, *supra* note 26, at 1330–32; *see* United States v. Pineda-Moreno, 591 F.3d 1212, 1213 (9th Cir.) (drug trafficking), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515); United States v. Garcia, 474 F.3d 994 (7th Cir. 2007) (drug manufacturing); United States v. Sparks, No. 10-10067-WGY, 2010 WL 4595522, at *7 (D. Mass. Nov. 10, 2010) (bank robbery).

43. *See* Zetter, *supra* note 11 (discussing an FBI ongoing investigation of an American citizen with known ties to Egypt).

44. This Note will use the term "beeper" to discuss any tracking device that is not a GPS unit.

While some analogize this more primitive location tracking technology to GPS tracking, the technologies do not function identically.[46]

The technologies have similarities. Beepers and GPS devices serve essentially the same purpose: determining location.[47] In order to do so, police must physically attach both types of tracking devices to the object.[48] Neither device transmits pictures or visual recordings of locations.[49]

Despite these similarities, beepers and GPS devices vary in terms of the amount and sophistication of information obtained by the device.[50] Beepers employed in the past emitted periodic radio signals that could be detected by radio receivers.[51] Beepers do not use satellite technology, but could convey location by way of these electronic pulses.[52] Police needed to be in a relatively close distance in order to obtain these readings.[53] By contrast, GPS devices do not require constant monitoring or close proximity to obtain information.[54] GPS devices can also convey information about latitude, longitude, elevation, speed, and direction.[55]

The two technologies also differ significantly in regard to the retention of the tracking information. Beepers function passively and do not store any data,[56] whereas GPS devices record location and movement information,[57] allowing law enforcement officials to review and utilize that recorded information remotely or at a later time.[58] Some devices do not even require removing the device to retrieve the information.[59]

B. Understanding the Fourth Amendment: History and Current Analysis

The preceding overview of GPS technology clearly indicates the potential of the technology not only to increase the efficacy of law

45. *See* United States v. Karo, 468 U.S. 705, 707 (1984); United States v. Knotts, 460 U.S. 276, 277 (1983).

46. Tarik N. Jallad, Recent Development, *Old Answers to New Questions: GPS Surveillance and the Unwarranted Need for Warrants*, 11 N.C. J.L. & TECH. 351, 354 (2010).

47. *Id.* at 356–57.

48. *Id.* at 357. There are other forms of technology to determine location that do not have to be attached. *See* Glancy, *supra* note 22, at 306, 309–13 (discussing toll tag transponders, telematic technology and wireless devices).

49. Jallad, *supra* note 46, at 357.

50. *Id.*; *see also* United States v. Maynard, 615 F.3d 544, 556 (D.C. Cir.), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010).

51. United States v. Karo, 468 U.S. 705, 707 n.1 (1984) (citing United States v. Knotts, 460 U.S. 276, 277 (1983)); Ganz, *supra* note 26, at 1328 (explaining the beeper's value lies in the police's ability to track it); Jallad, *supra* note 46, at 354–55.

52. *See* Ganz, *supra* note 26, at 1328.

53. *See* Jallad, *supra* note 46, at 358.

54. *See* Adam Koppel, Note, *Warranting a Warrant: Fourth Amendment Concerns Raised By Law Enforcement's Warrantless Use of GPS and Cellular Phone Tracking*, 64 U. MIAMI L. REV. 1061, 1065 (2010) (discussing the remote tracking capabilities of the GPS).

55. *See supra* notes 24–28 and accompanying text.

56. Ganz, *supra* note 26, at 1328.

57. *Id.* at 1328–29.

58. Koppel, *supra* note 54, at 1065.

59. *See* People v. Weaver, 909 N.E.2d 1195, 1196 (N.Y. 2009) (noting the Q-ball device used permits "drive-by" downloading).

enforcement departments, but also to violate individual privacy rights.[60] The question of whether the Constitution protects individuals from this type of government surveillance arises under the Fourth Amendment. This section explains the purpose of the amendment and its modern application in order to elucidate the current debate regarding constitutionality of the installation and monitoring of a GPS unit.

Part I.B.1 provides a historical understanding of the Fourth Amendment. Part I.B.2 explains the basic analysis courts use to decide whether the Fourth Amendment applies to a particular situation.

1. The Fourth Amendment: Protection from Unreasonable Search and Seizure

The historical background of the Fourth Amendment provides insight into how the modern analysis works. Under British rule, soldiers commonly issued general warrants allowing arrests without wrongdoing, searches without particularity, and seizures at whim.[61] The Founders sought protection from these types of unreasonable governmental intrusions when creating the Bill of Rights.[62] The drafters wrote the Fourth Amendment to "end the abuse[s] of general exploratory searches" and "empower the federal courts to enforce the Fourth Amendment as a legal guarantee."[63] The text of the Fourth Amendment encompasses protections against searches, seizures, and arrests:

> The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.[64]

The Fourth Amendment fails to explicitly define when a court must require warrants, which has led to varied textual interpretations.[65] Scholars have

60. *See generally* Blitz, *supra* note 34 (discussing privacy concerns raised by various new technology); Glancy, *supra* note 22 (discussing privacy issues on the open road); Kate Bolduan, *Is GPS a High-Tech Crime-Fighting Tool or Big Brother?*, CNN.COM (Aug. 18, 2008), http://articles.cnn.com/2008-08-18/justice/gps.tracking_1_gps-receiver-crimes-and-track-gps-evidence?_s=PM:CRIME (discussing both security and privacy concerns).

61. *See* PHILLIP A. HUBBART, MAKING SENSE OF SEARCH AND SEIZURE LAW: A FOURTH AMENDMENT HANDBOOK 21–22 (2005) (noting that British writs of assistance allowed for broad searches of "houses, vessels, warehouses, shops, and all other places for uncustomed goods" for the lifetime of the current sovereign plus six months); *see also* THOMAS N. MCINNIS, THE EVOLUTION OF THE FOURTH AMENDMENT 17–18 (2009) (describing the general warrants and writs of assistance used in the colonies).

62. *See* HUBBART, *supra* note 61, at 60–67 (discussing the ratification debates and amendments regarding unreasonable search and seizure in Pennsylvania, Maryland, Virginia, New York, and North Carolina); MCINNIS, *supra* note 61, at 19 (discussing ratifying conventions that proposed amendments to bar unreasonable searches).

63. HUBBART, *supra* note 61, at 75–82.

64. U.S. CONST. amend. IV.

65. *See* JACOB W. LANDYNSKI, SEARCH AND SEIZURE AND THE SUPREME COURT: A STUDY IN CONSTITUTIONAL INTERPRETATIONS 42 (1966) (identifying possible interpretations). The Supreme Court itself has recognized that its interpretation varies. *See*

extensively debated the phraseology and relationship between the clauses.[66] Regardless of the original intent of the words chosen, the Supreme Court has professed "a strong preference for warrants" because they serve as a "more reliable safeguard against improper searches."[67] Thus, the Court typically requires a warrant prior to a search and seizure.[68] In order to obtain a warrant, police need to show probable cause that the location to be searched will lead to evidence of a crime.[69]

2. Meeting the Qualifications for Fourth Amendment Protection

The text and background of the Fourth Amendment suggests a preference for warrants prior to a search.[70] However, this preference only applies when the activity in question qualifies as a Fourth Amendment search.[71] A search occurs when an act infringes on a reasonable expectation of privacy that "society is prepared to consider reasonable."[72] The infringement analysis has two prongs.[73] First, a governmental actor must carry out the activity alleged to violate the Fourth Amendment.[74] Second, the complaining party must have a reasonable expectation of privacy in the

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California v. Acevedo, 500 U.S. 565, 582 (1991) (Scalia, J., concurring) ("[O]ur jurisprudence [has] lurched back and forth between imposing a categorical warrant requirement and looking to reasonableness alone.").

66. Little legislative history exists regarding the language of the Fourth Amendment and its ratification, making a definitive original understanding next to impossible. *See* THOMAS K. CLANCY, THE FOURTH AMENDMENT: ITS HISTORY AND INTERPRETATION 40–42 (2008); HUBBART, *supra* note 61, at 86 ("[Terms] have no obvious self-executing meaning and often excite considerable debate in given cases."); LANDYNSKI, *supra* note 65, at 42 ("The search and seizure provision . . . ha[s] both the virtue of brevity and the vice of ambiguity."). It is beyond the scope of this Note to determine the "correct" interpretation of the original language. Instead, this Note will simply apply the presumptions utilized by the Supreme Court in its analyses.

67. United States v. Leon, 468 U.S. 897, 913–14 (1984); Katz v. United States, 389 U.S. 347, 361 (1967) (Harlan, J., concurring) (stating that a search of a protected area or interest is "presumptively unreasonable" without a search warrant); *see also* HUBBART, *supra* note 61, at 161–67 (discussing the development and application of the search warrant requirement rule in a number of different Fourth Amendment contexts).

68. There are a few long-standing criminal exceptions to this warrant requirement. *See generally* HUBBART, *supra* note 61, at 249–80 (discussing the rationales and applications of the search incident to lawful arrest, stop and frisk, automobile, consent, and exigent circumstances exceptions).

69. CLANCY, *supra* note 66, at 476 (defining probable cause); *see also* BLACK'S LAW DICTIONARY 1321 (9th ed. 2009) (defining probable cause as "[a] reasonable ground to suspect that a person has committed or is committing a crime or that a place contains specific items connected with a crime).

70. *See supra* notes 64–69 and accompanying text.

71. *See* California v. Greenwood, 486 U.S. 35, 39–40 (1988) (determining that inspection of garbage is not a search and thus no warrant required); United States v. Knotts, 460 U.S. 276 (1983) (finding that no warrant is required for a tracking device because the monitoring was not a search); *see also* HUBBART, *supra* note 61, at 129 (discussing how these questions arise only in instances of first impression).

72. United States v. Jacobsen, 466 U.S. 109, 113 (1984); *see also infra* Part I.C.

73. HUBBART, *supra* note 61, at 131.

74. *See* Burdeau v. McDowell, 256 U.S. 465, 475 (1921) (holding the Fourth Amendment's restraints are on government agencies only).

location or activity being searched.[75] If the activity meets both of these prongs, then a search has occurred, the protection of the Fourth Amendment applies, and courts require a warrant.[76] If the activity does not meet both prongs, then the amendment's protections do not apply and police do not require a warrant.[77]

The Court has traditionally considered law enforcement officials to be governmental actors under the first prong of the "search" analysis.[78] Accordingly, much of the Fourth Amendment jurisprudence focuses on whether the police activity represents an invasion of the reasonable expectation of privacy.[79] The analysis of the reasonable expectation prong has not been straightforward or predictable.[80] It includes many potential considerations that will be discussed extensively in Part I.C.3.

The Fourth Amendment has a procedural component as well. A defendant must have standing in order to challenge the activity.[81] Mere presence in a location such as a house or car does not automatically convey standing.[82] Instead, an individual has to show that her individual rights were violated because the police searched her property.[83] A person cannot challenge evidence found against her if the search violated a third party's rights or occurred with third-party consent.[84] The courts address the standing issue as separate from the question of whether a search has occurred, but it can function to severely limit which law enforcement activities are challenged.

Fourth Amendment protections can have high stakes for the government and an individual accused of a crime. Where a court finds that the police obtained evidence by unconstitutional means, it generally excludes the

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75. HUBBART, *supra* note 61, at 131.

76. *Id.*

77. *See* CLANCY, *supra* note 66, at 7–8.

78. *See* United States v. Knotts, 460 U.S. 276, 276 (1983) (applying Fourth Amendment protections to acts by Minnesota law enforcement); Smith v. Maryland, 442 U.S. 735, 737 (1979) (applying Fourth Amendment protections to acts by Baltimore city police); HUBBART, *supra* note 61, at 117 ("The Fourth Amendment applies to all state, federal and local law enforcement officials in the United States and its territories.").

79. HUBBART, *supra* note 61, at 132–33 (noting that intent, physical location, ability of others to similarly intrude, and general societal expectations are some of the considerations important in the analysis).

80. The Supreme Court has often disagreed on how to implement this test in various factual circumstances. *See* Kyllo v. United States, 533 U.S. 27 (2001) (5–4 decision); Dow Chem. Co. v. United States, 476 U.S. 227 (1986) (same); California v. Ciraolo, 476 U.S. 207 (1986) (same); *Knotts*, 460 U.S. at 276 (same).

81. *See* Rakas v. Illinois, 439 U.S. 128, 133–34 (1978) (overturning the former "target" theory of standing); *see also* CLANCY, *supra* note 66, at 96–98 (discussing the procedure and ramifications of the current standing doctrine).

82. *See Rakas*, 439 U.S. at 132–34.

83. *See id.* at 134; *see also* Rawlings v. Kentucky, 448 U.S. 98, 105–06 (1980) (holding that an individual could not challenge the search of another's purse even if it held the individual's contraband); HUBBART, *supra* note 61, at 112 (explaining that the individual making the claim must show that the activity violated her interests and not those of a third party).

84. HUBBART, *supra* note 61, at 112.

evidence to deter future police misconduct.[85] This "exclusionary rule" has a few exceptions, but functions to keep illegitimately obtained evidence out of criminal proceedings.[86]

C. The Supreme Court and the Difficulty In Defining "Reasonable Expectations"

A violation of the Fourth Amendment has the potential to exclude evidence, which could jeopardize the prosecution's case-in-chief. Thus, courts carefully apply its protections. The constitutionality of a search under the Fourth Amendment relies on the definition of a reasonable expectation of privacy.[87] To determine whether a defendant had a reasonable expectation of privacy, courts employ a complicated analysis with many considerations and few bright-line rules.

Part I.C.1 explores the modern reasonable expectation of privacy test. Parts I.C.2 and I.C.3 discuss property interests and other common considerations utilized to determine reasonable expectations of privacy in modern cases. These considerations include property interests, public exposure, the nature of the law enforcement intrusion, the kind of information obtained, and the quantity of information obtained.

1. The *Katz* Test: Development and Current Application

Prior to 1967, the "reasonable expectation" analysis focused on whether police invaded a private location—essentially equating the Fourth Amendment analysis to the law of trespass.[88] The Warren Court, in *Katz v. United States*,[89] shifted Fourth Amendment analysis from the protection of only individual places to protection against intrusions on the individual's privacy—even in public[90]—by holding that, "the Fourth Amendment protects people, not places."[91]

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85. *See* CLANCY, *supra* note 66, at 610–11. The Court often engages in a cost-benefit analysis that balances the loss of pertinent evidence with the likelihood of future deterrence. *See id.* at 611.

86. *Id.* at 610. There is some debate over the continued applicability of the exclusionary rule and whether it serves a constitutional function. *See id.* at 612 (citing Hudson v. Michigan, 547 U.S. 586 (2006)).

87. *See supra* notes 72–77 and accompanying text.

88. *See* MCINNIS, *supra* note 61, at 223–24 (discussing the shift of focus in the *Katz* decision); Thomas K. Clancy, *What Is a "Search" Within the Meaning of the Fourth Amendment*, 70 ALB. L. REV. 1, 17–20 (2006) (comparing the *Olmstead* "literal view" and the intangible interests protected by *Katz*). *Compare* Olmstead v. United States, 277 U.S. 438, 466 (1928) (utilizing physical invasion to determine existence of Fourth Amendment searches), *with* Katz v. United States, 389 U.S. 347, 347 (1967) (purporting to shift the focus).

89. 389 U.S. 347 (1967).

90. *Id.* at 350 (protecting Katz's privacy from electronic listening in a public telephone booth).

91. *Id.* at 351. Legal scholars debate whether this shift was ever actually realized. *See* CLANCY, *supra* note 66, at 69 (comparing the liberal Court's intentions with the conservative Court's later restrictions of the Fourth Amendment); MCINNIS, *supra* note 61, at 225–26 (discussing whether *Katz* has lived up to its potential); Tracey Maclin, Katz, Kyllo, *and Technology: Virtual Fourth Amendment Protection in the Twenty-First Century*, 72 MISS.

To determine what qualifies as a "reasonable expectation of privacy" the Court asks two questions: (1) whether there is a subjective expectation of the individual that her action will be private and (2) whether such expectation is one "that society is prepared to recognize as 'reasonable.'"[92] The Court has recently focused more on the objective expectations.[93] The Court still considers the subjective aspect in decisions, but has made it clear that personal desires for privacy do not automatically trigger a reasonable expectation of privacy.[94] Therefore, much of the Court's determination of individual privacy rights falls under the "objective reasonableness" prong of the standard.[95]

2. The Fourth Amendment Still Protects Property Interests

Katz focuses Fourth Amendment protection on individual privacy rights, but that does not mean that the Fourth Amendment no longer protects property interests.[96] In fact, property interests still play a significant role in Supreme Court Fourth Amendment jurisprudence[97] since they serve as a

L.J. 51, 81–83 (2002) (describing canine sniff and aerial surveillance cases to emphasize the physical intrusion analysis and the "impotence" of *Katz*).

92. *Katz*, 389 U.S. at 361 (Harlan, J., concurring). The Court utilizes the concurring opinion's language because Justice Potter Stewart's majority opinion failed to define the term "privacy" and proved difficult to apply. *See* CLANCY, *supra* note 66, at 59 n.68 (discussing the extensive use of the term "privacy" with little clarification on what was protected). This Note will not discuss various conceptualizations of privacy. For an in-depth discussion of privacy, see Daniel J. Solove, *Conceptualizing Privacy*, 90 CALIF. L. REV. 1087 (2002).

93. There are a number of possible reasons for the subjective prong's subordination. *See* HUBBART, *supra* note 61, at 134–35 (rationalizing the emphasis because constitutional rights are not defined by subjective intent); Renée McDonald Hutchins, *The Anatomy of a Search: Intrusiveness and The Fourth Amendment*, 44 U. RICH. L. REV. 1185, 1192 (2010) ("[T]he diminished focus on subjective expectations is driven by the practical reality that individuals rarely engage in criminal conduct without taking at least nominal efforts to avoid detection.").

94. Hutchins, *supra* note 25, at 428.

95. Hutchins, *supra* note 93, at 1191–92.

96. *See* Orin S. Kerr, *Four Models of Fourth Amendment Protection*, 60 STAN. L. REV. 503, 516 (2007) ("[P]rotection for property under the Fourth Amendment remains a major theme of the post-*Katz* era . . . ." (internal quotation omitted)). In addition, the Fourth Amendment also protects personal property by prohibiting unreasonable seizures. Seizures do not normally implicate privacy concerns, but rather deprive the individual of dominion over her property. *See* HUBBART, *supra* note 61, at 216 & n.143. This Note will not address Fourth Amendment seizures, since GPS does not typically interfere with the possession or use of the object. *See* Soldal v. Cook Cnty., 506 U.S. 56, 61 (1992) (requiring "meaningful interference" with possessory interests to constitute a seizure).

97. *See* Minnesota v. Olson, 495 U.S. 91, 96–97 (1990) (extending the reasonable expectation of privacy to overnight guests in the home because they had been given a property interest in the home); United States v. Ross, 456 U.S. 798, 822–23 (1982) (holding that a person has a reasonable expectation of privacy in personal, private "containers"). Professor Orin S. Kerr argues that even *Katz* could be read as employing property-based interests in applying Fourth Amendment protections. *See* Orin S. Kerr, *The Fourth Amendment and New Technologies: Constitutional Myths and the Case for Caution*, 102 MICH. L. REV. 801, 823 (2004) (calling the installation of the electronic bug on the property used by *Katz* an invasion of Katz's temporary property interest in the telephone booth).

clear indicator of a reasonable expectation of privacy.[98] An individual also typically has a reasonable expectation of privacy in her personal property, such as bags or boxes.[99] Generally, where an individual has a legitimate property interest in a location or item, unauthorized access to that property violates the reasonable expectation of privacy one has in her property.[100] That individual loses her property rights, including the right to exclude others, when the property is invaded.[101] Ultimately the connection to the personal property must be substantial enough to indicate a reasonable expectation of privacy.[102]

The Supreme Court has held that individual privacy rights extend to certain places, including dwellings and automobiles. First, an individual has a reasonable expectation of privacy in her home and its curtilage, defined as the "area immediately surrounding" the dwelling.[103] Second, the owner, or an individual with a significant connection to an automobile, typically has a reasonable expectation of privacy in it, though it may be a lesser expectation of privacy than in a home.[104] The Court has unanimously agreed that stopping vehicles on a public road qualifies as a seizure.[105] In 2009, the Supreme Court reiterated the legitimate objective expectation of privacy in a vehicle.[106] Some argue that individuals' personal activities in their cars also engender a subjective expectation of privacy as well.[107]

3. Other Considerations in the Reasonable Expectations Analysis

The Court conducts a more complicated analysis in situations where the individual's property interest is unclear or insubstantial. The Court utilizes

98. Hutchins, *supra* note 25, at 430 (noting that a subjective expectation of privacy can be supported as reasonable by property law concepts).

99. HUBBART, *supra* note 61, at 149–50.

100. Kerr, *supra* note 96, at 516 (discussing the property interest consideration as an example of the "positive law model" of Fourth Amendment analysis).

101. CLANCY, *supra* note 66, at 77–83 (discussing the right to exclude).

102. HUBBART, *supra* note 61, at 150–51. There is some indication that when the government engages in even a minor physical intrusion of a protected area or property to obtain information, the intrusion can violate the Fourth Amendment. *See* United States v. Knotts, 460 U.S. 276, 286 (1983) (Brennan, J., concurring) (citing Silverman v. United States, 365 U.S. 505, 509–12 (1961)). For a discussion of the factors contributing to substantiality, see *infra* Part I.C.3.

103. *See* United States v. Dunn, 480 U.S. 294, 300–01 (1987) (extending protection to the curtilage and stating that the proximity from the home, uses of the land, and steps taken to protect the area from others determines the curtilage); Oliver v. United States, 466 U.S. 170, 178 (1984) (highlighting the sanctity of the home under the Fourth Amendment); HUBBART, *supra* note 61, at 139–46 (discussing open fields and curtilage analysis as well as the Fourth Amendment protections extended to these areas).

104. *Id.* (citing Delaware v. Prouse, 440 U.S. 648, 662–63 (1979)).

105. Glancy, *supra* note 22, at 298 (citing Illinois v. Lidster, 540 U.S. 419 (2004)).

106. Arizona v. Gant, 129 S. Ct. 1710, 1720 (2009) (recognizing a lesser, but "nevertheless important and deserving of constitutional protection," reasonable expectation of privacy in vehicles).

107. Glancy, *supra* note 22, at 295 n.3.

various considerations to determine reasonableness in these situations.[108] Generally, the considerations do not function independently and often overlap in practice.[109] The Supreme Court's analysis of reasonable expectation of privacy considerations illustrates how it might decide in the future. This section explores four commonly used considerations: public exposure, nature of the government intrusion, type of information obtained, and quantity of information obtained.

a. Public Exposure: Can It Be Seen In Public?

The public exposure consideration looks at both the voluntary nature of the exposure and whether a private actor would have access to the information in question. Typically, when an individual voluntarily exposes information to the public, this effectively undermines any potential reasonable expectation of privacy in that information.[110] A basic correlation has developed in the jurisprudence: the higher the public accessibility of the information or area, the less likely the privacy of the item or act will be protected.[111]

The Court has utilized this consideration in a number of factual circumstances. For example, individuals have no legitimate reasonable expectation of privacy in land that "usually [is] accessible to the public and the police."[112] The Court has held that open areas of land, even if privately owned, are not subject to the warrant requirement because the land is effectively exposed to the public.[113] The Court has found no reasonable expectation of privacy in locations that can be openly viewed by the public, even if only by aerial visual surveillance.[114] The Fourth Amendment does

108. *See* Oliver v. United States, 466 U.S. 170, 178 (1984) (identifying original intent, societal understanding, and location as considerations in determining whether a location requires constitutional protection); CHRISTOPHER SLOBOGIN, PRIVACY AT RISK 59 (2007) (identifying a series of past considerations).

109. *See* California v. Ciraolo, 476 U.S. 207, 212–15 (1986) (looking at public exposure and nature of the police intrusion); CLANCY, *supra* note 66, at 64–66 (identifying governmental regulations, technological advances, and empirical observations as examples of considerations utilized by the Supreme Court in its reasonable expectation of privacy analysis); Kerr, *supra* note 96, at 507 ("Most Supreme Court opinions feature multiple models [and considerations] to varying degrees, and they often switch from model to model without recognizing the change.").

110. *See* Katz v. United States, 389 U.S. 347, 351 (1967) (holding that whether the information has been exposed to the public significantly affects the expectation of privacy analysis); CLANCY, *supra* note 66, at 83–84 (discussing the public exposure consideration).

111. CLANCY, *supra* note 66, at 84–85; *see also* Kerr, *supra* note 96, at 508–09 (noting that when the likelihood is high that another will be able to pry into an individual's affairs, courts will not likely find a reasonable expectation of privacy).

112. *Oliver*, 466 U.S. at 179.

113. *See id.* at 173; CLANCY, *supra* note 35, at 123–25 (discussing the "open fields doctrine"). The phrase "open fields" refers more generally to undeveloped or unutilized land outside of the curtilage. *Oliver*, 466 U.S. at 180 n.11.

114. MCINNIS, *supra* note 61, at 233–38 (collecting aerial view cases, and arguing that this consideration has a limiting effect on Fourth Amendment protections).

not provide protection unless an individual takes measures to guard her land from aerial surveillance.[115]

The Supreme Court has also held that when members of the public can likely access information, an individual could not claim Fourth Amendment protections.[116] For instance, when an individual leaves garbage at the curb for pickup, she has no reasonable expectation of privacy in the items searched for and seized by the police from the trash.[117] The public exposure consideration remains a strong force in determining reasonable expectations of privacy.[118]

b. Nature of the Police Intrusion: How Are the Police Obtaining the Information?

The Supreme Court has asserted that in Fourth Amendment analysis, "means [of search] do matter."[119] The consideration of the nature of the police intrusion serves as a "critical element" in determining objective reasonableness, especially in the case of enhanced law enforcement surveillance.[120] Generally, where the Court finds that the government activity was only a "trivial intrusion," the activity does not breach a reasonable expectation of privacy[121] or qualify as a search under the Fourth Amendment.[122]

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115. *Id.*; *see also* SLOBOGIN, *supra* note 108, at 54–56 (discussing the development of the "naked eye exception").

116. *See* United States v. Knotts, 460 U.S. 276, 282–83 (1983) (noting that since the movements could be readily observed there was no search). There has been debate over the appropriateness of allowing third party observers, both actual and hypothetical, to preclude Fourth Amendment protection. *See* John M. Junker, *The Structure of the Fourth Amendment: The Scope of the Protection*, 79 J. CRIM. L. & CRIMINOLOGY 1105, 1128–30 (1989) (arguing that the allowance of hypothetical observers undermines the Fourth Amendment protections).

117. California v. Greenwood, 486 U.S. 35, 40–41 (1988) (holding that since the garbage was "readily accessible to animals, children, scavengers, snoops, and other members of the public," the defendants had no legitimate expectation of privacy).

118. *See* United States v. Pineda-Moreno, 591 F.3d 1212, 1215 (9th Cir.), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515); *see also* discussion *infra* Parts II.B.1.a, II.B.3.a.

119. United States v. Maynard, 615 F.3d 544, 566 (D.C. Cir.) (holding that the fact that alternative means could be employed does not legitimize violative means (citing Kyllo v. United States, 533 U.S. 27, 35 n.2 (2001))), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010). Not all commentators agree on the relevance of this consideration. *See* CLANCY, *supra* note 66, at 319–21 (arguing that this considerations undermines the Fourth Amendment because it allows police to get otherwise unobtainable information, regardless of the minimal nature of the intrusion); MCINNIS, *supra* note 61, at 243 (arguing this consideration completely disregards the extent to which a person has tried to create an expectation of privacy, thereby undermining *Katz*).

120. Hutchins, *supra* note 25, at 430 (citing United States v. Jacobsen, 466 U.S. 109, 122–23 (1979)).

121. *See* Hutchins, *supra* note 93, at 1197–98 (identifying dog sniffs, narcotics tests and not detailed aerial photographs as minimally intrusive governmental activities not requiring warrants).

122. *Id.*

The Court considered the "physically nonintrusive manner" of flyover surveillance of privately owned lands in determining that no reasonable expectation of privacy existed.[123] It has also held that "expecting some sort of privacy invasion does not mean expecting all [privacy invasions]."[124] The Court differentiates between the more intrusive tactile search and the less intrusive visual search of the same item. The increased level of intrusion breaches the individual's reasonable expectation of privacy.[125] The nature of the intrusion remains a viable consideration in determining reasonable expectations of privacy.[126]

c. The Kind of Information Obtained: What Do Police Now Know?

The Court can also consider the kind of information that the police have collected in addition to how officers went about collecting it.[127] This factor contemplates whether the information obtained is personal, private, or in need of particular protection.[128]

The Court uses this consideration when deciding whether the use of a new technological device violates a reasonable expectation of privacy.[129] The Court classifies the device as "sense augmenting" or "extrasensory" by looking at the kind of information the device obtains.[130] Classification based on the kind of information is typically dispositive in cases addressing new technology, making this consideration significant in determining whether a reasonable expectation of privacy exists.[131]

Devices that provide the same kind of information as an officer could obtain via his five senses without technological assistance are "sense

123. California v. Ciraolo, 476 U.S. 207, 213–14 (1986) (illustrating that the Court often uses multiple considerations by discussing the kind of information consideration, as well as the public exposure of flyover surveillance).

124. Andrew E. Taslitz, *The Fourth Amendment in the Twenty-First Century: Technology, Privacy and Human Emotions*, 65 LAW & CONTEMP. PROBS. 125, 147 (2002).

125. *Id.*

126. *See, e.g.*, Amaechi v. West, 237 F.3d 356, 363–64 (4th Cir. 2001) (finding cavity searches more intrusive than visual strip searches, and so a reasonable expectation of privacy existed only in the former); United States v. Nerber, 222 F.3d 597, 601–03 (9th Cir. 2000) (finding the video surveillance violated the reasonable expectation of privacy of individuals videotaped in another's hotel room due to the intrusive nature of videotaping).

127. *See* Kerr, *supra* note 96, at 512–13 (identifying this analysis as the "private facts" model which focuses on the actual information collected instead of the method of collection).

128. *Id.* at 506; *see also* United States v. Jacobsen, 466 U.S. 109, 123 (1984) ("[G]overnmental conduct that can reveal whether a substance is [illicit], and no other arguably 'private' fact, compromises no legitimate privacy interest."); Katz v. United States, 389 U.S. 347, 352 (1967) (holding that the actual words spoken by an individual should not be "broadcast to the world" as this was too intrusive).

129. Hutchins, *supra* note 93, at 1199 (discussing how the Supreme Court favors this kind of information analysis); Koppel, *supra* note 54, at 1070–71 (examining the classification of various technology by the Court in this manner).

130. Hutchins, *supra* note 25, at 432.

131. *Id.* (arguing that the Court's emphasis on kinds of information has linked Fourth Amendment protection to the classification of devices as "sense augmenting" or sense enhancing).

augmenting."[132] The Court does not require a warrant for information that could be obtained without a special device because the individual has no reasonable expectation of privacy in that kind of information.[133] On the contrary, the Court has suggested that extrasensory technology, which "reveals information otherwise indiscernible to the unaided human senses," requires a different analysis.[134] The Court applied this reasoning in *Kyllo v. United States*—where police searched a house by using a thermal imaging gun to determine excessive heat sources within the home—because this information could not be obtained without the device.[135] The kind of information obtained by an extrasensory device requires a warrant.[136]

d. Quantity of Information Obtained: How Much Information Does the Police Method Convey?

While the kind of information obtained by the governmental activity undoubtedly speaks to the reasonable expectations of the people involved, the Court is also concerned about the sheer quantity of information that the police activity will obtain.[137] The Supreme Court has indicated that where information "is noteworthy for its potential volume or detail, constitutional protections may be required."[138] However, the Court allows warrantless search activity where it finds "tightly circumscribed" information.[139] In a simple example, the Court considers the quantity of information in "binary searches"—where the police only look for the presence of contraband.[140] Since the testing conveys *only* the illicit nature of the contraband, it does not qualify as a search.[141]

The Supreme Court indicated that the volume of information could intrude on personal privacy in *U.S. Department of Justice v. Reporters Committee for the Freedom of the Press*.[142] The Court held that public disclosure of criminal "rap sheet[s]"—aggregates of an individual's criminal activity—creates an intrusion on personal privacy despite the fact

132. *Id.* at 432–33.

133. Even significantly increased efficiency achieved by using "sense augmenting" devices does not warrant additional protection. *See* United States v. Knotts, 460 U.S. 276, 284 (1983) (holding the Fourth Amendment does not prohibit law enforcement from improving their senses with technology).

134. Hutchins, *supra* note 25, at 433; *see also* HUBBART, *supra* note 61, at 156 (discussing "sense-enhancing" technological devices).

135. Kyllo v. United States, 533 U.S. 27, 29 (2001).

136. *Id.* at 40.

137. *See Knotts*, 460 U.S. at 283–84 (recognizing that twenty-four hour surveillance involves a significant quantity of information as compared to that gathered by a beeper).

138. Hutchins, *supra* note 25, at 440.

139. *Id.* at 438 (discussing the relevance of the quantity of information in extrasensory technological devices).

140. *Id.* at 441–42 (citing United States v. Place, 462 U.S. 696 (1983)).

141. *Id.* Binary searches provide a good example of how these reasonable expectation considerations interact: The court often highlights the limited type of information in addition to the low quantity of information provided. *See supra* note 128.

142. 489 U.S. 749 (1989).

the public record includes each individual event.[143] The ruling indicates that though "[p]ublic disclosure of public facts is not an invasion of privacy," a compilation of public facts could be.[144]

Reporters arose not under the Fourth Amendment, but under the Freedom of Information Act.[145] Commentators disagree as to whether the analysis can be applied to Fourth Amendment searches.[146] However, in at least one federal circuit and a number of state courts, the aggregate amount of information obtained by police surveillance implicated a violation of a reasonable expectation of privacy of information.[147] The viability of *Reporters* in the context of Fourth Amendment searches remains to be seen, but the quantity of information remains a consideration in the reasonable expectation of privacy analysis.[148]

D. The Fourth Amendment and Tracking Devices: Past Analyses

The American legal system operates under a system of stare decisis, which requires courts to respect past precedent in order for the law to develop predictably and consistently.[149] Thus, in attempting to understand how the Supreme Court might rule on a particular investigative technique in the future, one must look at not only the generic Fourth Amendment analysis, but also the holdings of cases with the most similar technologies. This section discusses the only Supreme Court rulings regarding tracking devices and the Fourth Amendment: *United States v. Knotts*[150] and *United States v. Karo*.[151] This discussion includes the Court's rulings on the constitutionality of both the installation and the monitoring of the tracking devices.

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143. *Id.* at 764 (recognizing the different privacy implications between "scattered disclosure" of information that has to be located and compiled and "a single clearinghouse of information").

144. Richard C. Balough, *Global Positioning System and the Internet: A Combination with Privacy Risks*, CBA REC., Oct. 2001, at 28, 31 (citing *Reporters*, 489 U.S. 749).

145. *Reporters*, 489 U.S. at 751 (arising under the Freedom of Information Act, 5 U.S.C. § 552 (1982)).

146. *Compare* Blitz, *supra* note 34, at 1409–11 (discussing how video surveillance undermines privacy when police view the information it collects "in the aggregate" especially with ongoing recordings being maintained), *with* Orin Kerr, *D.C. Circuit Introduces the "Mosaic Theory" of Fourth Amendment, Holds GPS Monitoring a Fourth Amendment Search*, THE VOLOKH CONSPIRACY (Aug. 6, 2010, 2:46 PM), http://volokh.com/2010/08/06/d-c-circuit-introduces-mosaic-theory-of-fourth-amendment-holds-gps-monitoring-a-fourth-amendment-search/ (arguing *Reporters* does not apply in privacy cases). Commentators have also argued that the aggregation of information should be a search because it undermines the practical obscurity provided when each piece of information has to be individually identified and compiled. *See* WAYNE R. LAFAVE ET AL., CRIMINAL PROCEDURE § 3.2(j) n.77 (5th ed. 2009) (citing *Reporters*, 489 U.S. at 749).

147. *See* United States v. Maynard, 615 F.3d 544, 561–62 (D.C. Cir.) (collecting cases and examining the differences in information obtained between prolonged and short-term surveillance), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010).

148. *See supra* notes 137–41 and accompanying text.

149. *See* Payne v. Tennessee, 501 U.S. 808, 827 (1991).

150. 460 U.S. 276 (1983).

151. 468 U.S. 705 (1984).

1. Examining the Installation of the Tracking Device

In *Knotts*, police placed a beeper within a drum of chloroform with consent of the owner prior to its transfer to the defendant.[152] Law enforcement officials monitored the beeper for approximately three days and tracked it to a private, rural residence.[153] The defendant in *Knotts* never challenged the installation of the device because of a perceived lack of standing.[154]

In *Karo*, agents installed a beeper in a can of ether and monitored the movement of the can between private residences and commercial storage facilities intermittently over a period of four months.[155] Again, the Court found no constitutional issue with the installation of the tracking device since the DEA owned the can of ether at the time of attachment.[156]

The defendants' lack of property interest in the item tracked forced the Court in both cases to ignore the constitutionality of installing the tracking device on the defendant's personal property.[157] In neither instance did the Court address whether the placement of a tracking device on private property constituted a violation of the Fourth Amendment.[158] These precedents leave the installation question unanswered.[159]

2. Examining the Monitoring of the Device

Both *Knotts* and *Karo* addressed whether a reasonable expectation of privacy exists in information obtained by monitoring the tracking device. Ultimately, *Knotts* found that the police's warrantless monitoring did not violate a reasonable expectation of privacy in the information the beeper provided.[160] *Karo* agreed, but stated that the monitoring of a tracking device within the home did require a warrant.[161]

The Court utilized a number of the considerations discussed in Part I.C.3 to find that no Fourth Amendment search existed. These two cases provide an interesting illustration of how courts can use the same considerations to

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152. *Knotts*, 460 U.S. at 278, 286.

153. *Id.* at 278–79.

154. *Id.* at 279 n.*. The concurrence in *Knotts* did note that it would be a more difficult case had the installation occurred on the personal property of the defendant. *Id.* at 286 (Brennan, J., concurring). *See* discussion *infra* Part II.A.2.

155. Maclin, *supra* note 91, at 118.

156. *Karo*, 468 U.S. at 711 ("[B]y no stretch of the imagination could it be said that respondents then had any legitimate expectation of privacy in [the DEA's can of ether]."). In addition, the Court found a sufficient exception to the warrant requirement due to the informant's consent to switch the can with the tracking device for an untainted can. *Id.*

157. *Id.* at 712–13; *Knotts*, 460 U.S. at 279 n.*.

158. *Karo*, 468 U.S. at 712–13; *Knotts*, 460 U.S. at 279 n.*.

159. Lower courts face both issues. *See* United States v. Jones, 625 F.3d 766, 770 (D.C. Cir. 2010) (Kavanaugh, J., dissenting) (denial of rehearing en banc); Petition for Writ of Certiorari, *supra* note 4, at i (including a question presented regarding installation).

160. *Knotts*, 460 U.S. at 285.

161. *Karo*, 468 U.S. at 715–16. Neither decision was unanimous. *See Knotts*, 460 U.S. at 277 (5–4 decision); Maclin, *supra* note 91, at 119 (noting that seven Justices in *Karo* agreed that the home was off limits for the use of beeper technology, but the Court split on the more difficult question of whether or not monitoring of other facilities constituted a search).

either expand or limit Fourth Amendment protections. In both instances, the Court focused on the public exposure and kind of information considerations.

a. Public Exposure Consideration

In *Knotts*, the Court found that the beeper monitoring amounted only to following an individual in a car on public streets.[162] The Court identified that a motor vehicle has a lessened expectation of privacy because "'[i]t travels public thoroughfares where both its occupants and its contents are in plain view.'"[163] No reasonable expectation of privacy existed where the individual's movements were in the public view and accessible by any individual.[164]

However, the Court has used the same consideration to provide protection. The *Karo* Court distinguished its holding because the *Knotts* information was "voluntarily conveyed"[165] while the information obtained in *Karo* "could not have been visually verified" as it occurred within the home.[166] In other words, the movements had not been exposed to the public and thus retained their reasonable expectation of privacy.

b. Nature of Police Intrusion Consideration

The *Knotts* Court classified the tracking beeper as a minimal intrusion.[167] The beeper's intrusion equated to standard visual surveillance and therefore no reasonable expectation of privacy existed.[168] By contrast, the *Karo* Court found that police obtaining information about the inside of the home qualified as a much higher intrusion.[169] The Court found that the police's use of a *less* intrusive search method did not justify monitoring within the home.[170] The beeper violated the reasonable expectation of privacy that exists within the home and thus the Court saw it as a much more significant intrusion.[171]

c. Kind of Information Consideration

The Supreme Court, in both *Knotts* and *Karo*, took into consideration the kind of information the beeper obtained in determining whether or not a

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162. *Knotts*, 460 U.S. at 281.
163. *Id.* (quoting Cardwell v. Lewis 417 U.S. 583, 590 (1974)).
164. *Id.*
165. *Id.* at 281–82 ("When [defendant] traveled over the public streets he voluntarily conveyed to anyone who wanted to look the fact that he was traveling over particular roads in a particular direction, the fact of whatever stops he made, and the fact of his final destination when he exited from public roads onto private property.").
166. *Karo*, 468 U.S. at 715.
167. *Knotts*, 460 U.S. at 284 (noting the police's limited use of the device).
168. *Id.* at 283–85.
169. *Karo*, 468 U.S. at 717 (rejecting the argument that a beeper was a "minuscule intrusion").
170. MCINNIS, *supra* note 61, at 240 (quoting *Karo*, 468 U.S. at 715).
171. *Karo*, 468 U.S. at 714–15.

reasonable expectation of privacy existed.[172] The *Knotts* Court found that the defendant had no expectation of privacy to be violated in the first place because the beeper merely enhanced the visual abilities that law enforcement officials already possessed.[173] The Court emphasized the minimal sophistication of the device and the fact that the beeper did not "reveal information . . . that would not have been visible to the naked eye from outside the cabin."[174] The Court classified the beeper as a sense augmenting device, the use of which did not require a warrant.[175]

The *Karo* Court also emphasized the kind of information the search technique obtained, though it classified the beeper differently. The Court held that when the kind of information acquired cannot be obtained through normal visual surveillance—here because of the sanctity of the home—the monitoring required a warrant.[176]

d. Quantity of Information Consideration

Neither *Karo* nor *Knotts* discussed the quantity of information as a consideration in the reasonable expectation of privacy analysis. This oversight could be because the beeper technology utilized in the cases provided only a limited amount of location information.[177]

However, the *Knotts* Court left open future discussion regarding increased quantities of information by suggesting that its holding would not allow for unrestricted twenty-four hour surveillance of any citizen.[178] The Court stated that "if such dragnet-type law enforcement practices . . . occur, there will be time enough then to determine whether different constitutional principles may be applicable."[179]

II. DISAGREEMENT AMONG THE COURTS REGARDING THE INSTALLATION AND MONITORING OF GPS DEVICES

The reasonable expectation of privacy test explored in Part I.C is indefinite. Courts struggle to reconcile the test with the constant advances

172. *Id.*; *Knotts*, 460 U.S. at 285.
173. *Knotts*, 460 U.S. at 285.
174. *Id.*
175. MCINNIS, *supra* note 61, at 239 ("In effect, [the Court found that] the beeper simply enhanced the ability of the police to perform visual surveillance."); Hutchins, *supra* note 25, at 435.
176. *Karo*, 468 U.S. at 714–15 (finding that the less intrusive nature of the search did not change the fact that the government obtained information they could not have otherwise obtained without a warrant).
177. *Id.* at 708 (explaining that the beeper technology was not accurate enough to determine in which storage locker the drum was located); *Knotts*, 460 U.S. at 278 (noting that the beeper provided limited information and that the signals were lost periodically).
178. *Knotts*, 460 U.S. at 283.
179. *Id.* at 284. Some argue that this time has now arrived. *See* Blitz, *supra* note 34, at 1386 (stating that the future the Court identified in *Knotts* may be upon society).

of surveillance technology.[180] The type of surveillance and information obtained can vary greatly between past technology and the new, improved devices—making the considerations even more difficult to apply. In addressing GPS technology, some courts try to apply the precedent of the more primitive technology in *Knotts* and *Karo*.[181] Others seek to find a different way to measure objective expectations of privacy in the face of new technology.[182] In recent years, the use of GPS has caused a divide in the courts. Although the courts tend to focus on whether the monitoring of information violates a reasonable expectation of privacy, the installation question presents important Fourth Amendment implications as well.

Part II.A examines how different courts currently evaluate whether the physical installation of a GPS device constitutes a Fourth Amendment search. Part II.B analyzes the split regarding GPS monitoring. It discusses the reasonable expectation of privacy considerations utilized by different courts in determining the Fourth Amendment implications of GPS tracking. Part II.C addresses the current legislative responses to GPS surveillance.

A. How Did That Get There? Installation of GPS Units on Private Property

This section looks at the different ways of approaching the constitutionality of the installation of a GPS unit. The courts have not clearly split on this issue because most courts do not explicitly address this question. However, varied approaches exist and there are no definitive answers.[183] The lack of clear Supreme Court precedent also complicates the issue.[184]

Courts analyze the installation of a tracking device by determining whether the information obtained by the installation of a GPS violates a reasonable expectation of privacy.[185] Courts typically focus on whether the individual has a property interest in the property to be tracked or the land on which the property is located.[186]

This section discusses two approaches to the installation question. First, a minority of circuit courts have explicitly held that the installation does not require a warrant.[187] These courts have focused on the lack of a reasonable expectation of privacy in the location of the car during installation. Other

180. *See The Supreme Court, 2009 Term—Leading Cases*, 124 HARV. L. REV. 179, 184 n.58 (2010) (discussing the Court's recent struggles with applying precedent to new technology).

181. *See, e.g.*, United States v. Pineda-Moreno, 591 F.3d 1212, 1216–17 (9th Cir.), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515); *see also supra* Part I.D.2 (discussing the considerations applied in *Knotts* and *Karo*).

182. *See, e.g.*, United States v. Maynard, 615 F.3d 544, 559–61 (D.C. Cir.), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010); People v. Weaver, 909 N.E.2d 1195, 1199–1200 (N.Y. 2009).

183. United States v. Garcia, 474 F.3d 994, 997 (7th Cir. 2007) (collecting cases).

184. *See supra* Part I.D.1.

185. *See infra* Part II.A.

186. *See supra* Part I.C.2.

187. *See, e.g.*, United States v. McIver, 186 F.3d 1119, 1126–27 (9th Cir. 1999).

courts indicate that tracking devices may require a warrant or probable cause where the individual's property interest in the car itself is violated.[188]

1. Extension of the Reasonable Expectation of Privacy Considerations: Installation Is Not a Search Based on the Location of the Vehicle

Some courts, including the U.S. Court of Appeals for the Ninth Circuit, focus the installation analysis on the location of the car when the device was installed. For example, the Ninth Circuit has held that when the police find a car in an open field, public street, or parking lot, officers could install GPS units without a warrant.[189] These circuits hold that no reasonable expectation of privacy or search activity exists where the cars are voluntarily and publicly exposed.[190]

These courts look mostly at the public exposure consideration in determining whether a reasonable expectation of privacy existed at the time of installation.[191] In *United States v. McIver*,[192] law enforcement officers attached both GPS and electronic beeper devices to Christopher McIver's vehicle in his driveway.[193] The parties conceded that the curtilage of the home did not include this driveway.[194] Since the police had not entered a private or hidden area, the court did not consider the installation of the GPS device to be a search.[195] The court found the defendant's asserted objective expectation of privacy to be insufficient.[196] *McIver* went on to suggest that an issue might arise if the police "commit[] a trespass."[197]

In *United States v. Marquez*,[198] DEA agents installed a GPS device on a vehicle and revisited the device seven times to replace batteries.[199] The

188. *See, e.g.*, United States v. Shovea, 580 F.2d 1382, 1388 (10th Cir. 1978) (finding that officers had sufficient probable cause to attach tracking device and thus the attachment did not violate the Fourth Amendment); United States v. Moore, 562 F.2d 106, 112–13 (1st Cir. 1977) (holding warrantless attachment of tracking device "only if the officers have probable cause at the time").

189. *See* United States v. Pineda-Moreno, 591 F.3d 1212, 1215 (9th Cir.), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515); *see also infra* Part II.A.1.

190. *See, e.g.*, United States v. Marquez, 605 F.3d 604, 610 (8th Cir. 2010); *McIver*, 186 F.3d at 1126–27.

191. *See supra* Part I.C.3.a (discussing the public exposure consideration); *see also Marquez*, 605 F.3d at 610; *Pineda-Moreno*, 591 F.3d at 1215; *McIver*, 186 F.3d at 1126–27.

192. 186 F.3d 1119 (9th Cir. 1999).

193. *Id.* at 1123. The GPS unit actually malfunctioned after three days and all monitoring of location was completed via the beeper technology. *Id.*

194. *Id.* McIver also addressed the idea that placing the unit on the car itself was a search, but still focused on public exposure. *Id.* at 1126. The undercarriage of the car was publicly exposed and thus no reasonable expectation of privacy existed. *Id.*

195. *Id.* at 1127; *see also* United States v. Sparks, No. 10-10067-WGY, 2010 WL 4595522, at *11 (D. Mass. Nov. 10, 2010) (finding that installation occurring on a public street did not require a warrant).

196. *See supra* notes 188–90 and accompanying text.

197. *McIver*, 186 F.3d at 1126.

198. 605 F.3d 604 (8th Cir. 2010).

199. *Id.* at 607. The court held that the appellant did not have standing to bring the suppression motion, but nonetheless spoke about the Fourth Amendment implications of the GPS device. *Id.* at 609–10.

U.S. Court of Appeals for the Eighth Circuit also suggested that police do not need a warrant when installation occurs in a "public place".[200] The court in *United States v. Pineda-Moreno*[201] also focused on the location of the car during the installation.[202] Agents installed devices on seven separate occasions: four on public streets, one in a public parking lot, and twice in the driveway a few feet from Pineda-Moreno's trailer.[203] The Ninth Circuit found that the defendant lacked a reasonable expectation of privacy, even in the driveway.[204] The government conceded that the car "*was* parked within the curtilage of his home when the agents attached the tracking device," but this concession was not enough.[205] *Pineda-Moreno* found that the defendant had not protected the car from passersby and so police could access it as well.[206]

Each of these circuits focused only on the location of the car during installation. Since any individual could have attached something to the car, the police did not require a warrant to do so. These courts do not consider the ownership of the vehicle in the analysis at all.

2. Looking Beyond Location: Property Interests Suggest that Installation Should Require a Warrant

None of the circuit courts has explicitly stated that an installation requires a warrant, but some older cases suggest another way to consider the

200. *Id.* at 610. The U.S. District Court for the Western District of Kentucky recently agreed that a placement on a public street was not invalid, but that "[a]n entirely different conclusion might have resulted if . . . the officers had unlawfully trespassed onto private property to attach the devices." United States v. Williams, 650 F. Supp. 2d 633, 668 (W.D. Ky. 2009).

201. 591 F.3d 1212 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515).

202. *Id.* at 1215.

203. *Id.* at 1213.

204. *Id.* at 1215. Not all the circuit judges agreed with this reasoning in considering the petition for a rehearing en banc. *See* United States v. Pineda-Moreno, 617 F.3d 1120, 1121–26 (9th Cir. 2010) (Kozinski, J., dissenting) (arguing that the denial for rehearing en banc was inappropriate).

205. *Pineda-Moreno*, 591 F.3d at 1215.

206. *Id.* (finding that the defendant had not put up "special features" like a wall or signs to reasonably preserve his privacy). This disregard for the curtilage has been challenged on appeal. *See* Petition for Writ of Certiorari, *supra* note 4, at 21–24. Professor Kerr has also questioned its validity. Orin Kerr, *Petition for Certiorari Filed in* Pineda-Moreno*, The Ninth Circuit GPS Case*, THE VOLOKH CONSPIRACY (Nov. 22, 2010, 3:00 PM), http://volokh.com/2010/11/22/petition-for-certiorari-filed-in-pineda-moreno-ninth-circuit-gps-case/ ("The government's concession [that the driveway was a part of the curtilage] should have lost the case for them, and the Ninth Circuit was wrong to bend over backwards to undo the concession."). However, Professor Kerr also notes that courts do not typically consider the driveway within the curtilage, which may have affected this court's decision. *Id.*

constitutionality of the installation of a GPS device.[207] These cases look at the property interest that an individual has in her vehicle.[208]

Justice William Brennan, in his *Knotts* concurrence, suggested that installation might be an issue where a defendant has a property interest in the property outfitted with a tracking device.[209] Justice Brennan cited *Silverman v. United States*[210] for the proposition that when the government engages in physical intrusion of a protected area or property to obtain information, such an intrusion can violate the Fourth Amendment.[211] In *Silverman*, the Court held that an eavesdropping device planted on a heating duct in an apartment building was "an unauthorized physical penetration into the premises occupied by the petitioners," which violated Fourth Amendment protections.[212] The Court found that when police planted devices in a way that physically encroached upon a constitutionally protected area, the physical invasion constituted an unreasonable search under the Fourth Amendment.[213] Likewise, the concurrence in *Knotts* suggested that the usurpation of a car by attaching a tracking device to private property constitutes a similar violation.[214]

The court in *United States v. Shovea*[215] stated that the installation of a tracking device on a motor vehicle "[a]t a minimum . . . is an actual trespass" without a warrant.[216] The court found that despite the minimal nature of the intrusion, it raised Fourth Amendment concerns.[217] However, the court did not reach the question of whether the installation of the device qualified as a search because it found probable cause for the installation.[218] At least one court has required reasonable suspicion for installation instead.[219]

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207. *See* Silverman v. United States, 365 U.S. 505, 509–12 (1961); United States v. Shovea, 580 F.2d 1382, 1387 (10th Cir. 1978); United States v. Moore, 562 F.2d 106, 111 (1st Cir. 1977). These cases precede *Knotts* and *Karo*, but failed to explicitly address the issue of installation. *See supra* Part I.D.1.

208. *See supra* notes 104–07 and accompanying text.

209. United States v. Knotts, 460 U.S. 276, 285–86 (1983) (Brennan, J., concurring).

210. 365 U.S. 505 (1961).

211. *Knotts*, 460 U.S. at 286 (Brennan, J. concurring) (citing *Silverman*, 365 U.S. at 509–12).

212. *Silverman*, 365 U.S. at 509. The Court later noted that, "the officers overheard the petitioners' conversations only by usurping part of the petitioners' house or office . . . a usurpation that was effected without their knowledge and without their consent." *Id.* at 511.

213. *Id.* at 512 (calling the placement of the microphone an "actual intrusion into a constitutionally protected area"). The Fourth Amendment still protects such property interests post-*Katz*. *See supra* notes 96–98 and accompanying text.

214. *Knotts*, 460 U.S. at 286 (Brennan, J., concurring).

215. 580 F.2d 1382 (10th Cir. 1978).

216. *Id.* at 1387.

217. *Id.* Other courts have suggested that the minimal invasiveness of the attachment of the device did not warrant special protection. *See, e.g.*, United States v. Burton, 698 F. Supp. 2d 1303, 1307–08 (N.D. Fla. 2010) (discussing *Knotts*, but not addressing *Silverman*).

218. *Shovea*, 580 F.2d at 1387. The court in *United States v. Moore*, 562 F.2d 106, 112–13 (1st Cir. 1977), also suggested that an installation could be a search, but failed to reach the question since it found probable cause for the installation.

219. United States v. Michael, 645 F.2d 252, 257 (5th Cir. May 1981). Reasonable suspicion is a lower threshold than probable cause. *Compare* BLACK'S LAW DICTIONARY 1385 (9th ed. 2009) (defining the term as "[a] particularized and objective basis, supported

More recently, it has again been suggested that the *Silverman* logic could be applied to tracking devices.[220] The Court provides Fourth Amendment protections to a personal vehicle.[221] Where the police physically interact with a defendant's personal property in a way that can be characterized as "unauthorized physical encroachment within a constitutionally protected area," "usurping part of the petitioners' house or office," or "actual intrusion into a constitutionally protected area," then the individual's property interest has been breached and the Fourth Amendment has been violated.[222] Essentially, the physical contact with personal property could qualify as a violation of the Fourth Amendment when used to obtain information about the individual not otherwise obtainable.[223]

B. Watching Every Move You Make: The Federal Circuit Split Regarding the Monitoring of GPS Units

No consensus exists on the installation question and the courts also disagree on whether monitoring GPS devices constitutes a search under the Fourth Amendment. The split essentially arises between courts that focus on the similarities between beeper devices and GPS units, and the courts that focus on the differences.[224]

This section first discusses the reasonable expectation of privacy analysis of the U.S. Court of Appeals for the Seventh Circuit, as well as the Ninth Circuit. These circuits find that law enforcement officials do not need a warrant to monitor a GPS tracking device. Part II.B.2 explains the Eighth Circuit's dicta that monitoring does not qualify as a search unless the activity meets particular qualifications. These courts all equate the GPS technology in question to *Knotts* beeper technology.

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by specific and articulable facts, for suspecting a person of criminal activity"), *with supra* note 69 and accompanying text.

220. United States v. Jones, 625 F.3d 766, 770–71 (D.C. Cir. 2010) (Kavanaugh, J., dissenting) (denying rehearing en banc).

221. *See* Arizona v. Gant, 129 S. Ct. 1710, 1720 (2009); Delaware v. Prouse, 440 U.S. 648, 663 (1979) ("[P]eople are not shorn of all Fourth Amendment protection when they step from their homes onto the public sidewalks. Nor are they shorn of those interests when they step from the sidewalks into their automobiles." (citing Adams v. Williams, 407 U.S. 143, 146 (1972))).

222. Silverman v. United States, 365 U.S. 505, 510–12 (1961); *see also Jones*, 625 F.3d at 770–71 (Kavanaugh, J., dissenting) (denying rehearing en banc).

223. Some argue that the installation of the GPS device constitutes a Fourth Amendment seizure when it interferes with the possessory interests of the individual's vehicle. *See* United States v. McIver, 186 F.3d 1119, 1133–34 (9th Cir. 1999) (Kleinfeld, J., concurring); Commonwealth v. Connolly, 913 N.E.2d 356, 369 (Mass. 2009) (finding a seizure under the Massachusetts Constitution where installation required opening the car and utilizing its electrical system).

224. *Compare* United States v. Maynard, 615 F.3d 544, 556 (D.C. Cir.) (highlighting the differences between the technologies), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010), *with* United States v. Pineda-Moreno, 591 F.3d 1212, 1216 (9th Cir.) (applying the *Knotts* beeper device analysis to GPS units), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515).

This Note then discusses the recent U.S. Court of Appeals for the District of Columbia case, *United States v. Maynard*,[225] which found that such monitoring qualifies a search under the Fourth Amendment. The *Maynard* court identified and highlighted the differences between new and old technology in finding a reasonable expectation of privacy in the face of GPS monitoring.

1. No Search: The Seventh and Ninth Circuits Strictly Apply *Knotts*

The Seventh and Ninth Circuits have held that GPS surveillance of the movements of motor vehicles does not qualify as a search under the Fourth Amendment.[226] Each of the analyses turned on the question of whether a "reasonable expectation of privacy" existed and utilized the various considerations set out by the Supreme Court.[227] These circuits relied predominantly on the public exposure and information type considerations in determining that an individual in a car with an attached GPS device does not have a reasonable expectation of privacy on the open road.[228]

a. Public Exposure Consideration

The Seventh and Ninth Circuits applied the public exposure analysis from *Knotts* to find no reasonable expectation of privacy in the movements of the vehicles.[229] The Seventh Circuit, in *United States v. Garcia*,[230] specified that the car had only been monitored on public thoroughfares, and not private areas where a reasonable expectation of privacy might exist.[231] Based on the same logic, the defendant in *Pineda-Moreno* conceded that monitoring was not a search.[232] Both courts applied the public exposure analysis of the *Knotts*-era beeper technology decisions to the GPS cases before them.[233]

225. 615 F.3d 544 (D.C. Cir.), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010).

226. *Id.* at 557; United States v. Garcia, 474 F.3d 994, 998 (7th Cir. 2007).

227. *See supra* Part I.C.3.

228. The analyses are very similar in their focus to that of *Karo* and *Knotts*. *See supra* Part I.D.2.

229. *Pineda-Moreno*, 591 F.3d at 1216; *Garcia*, 474 F.3d at 996; *see supra* notes 162–64 and accompanying text.

230. 474 F.3d 994 (7th Cir. 2007).

231. *Id.* at 996; *see also* Recent Case, *supra* note 35, at 2231–32 ("[The decision] relied heavily on the Supreme Court's consistent indication that there could be no reasonable expectation of privacy in activities that were publicly observable.").

232. *See Pineda-Moreno*, 591 F.3d at 1216 (discussing the defendant's concession due to the car's location on public thoroughfares and subsequent public exposure). A recent district court to speak on the subject also relied on the public exposure consideration in its analysis. *See* United States v. Sparks, No. 10-10067-WGY, 2010 WL 4595522, at *8 (D. Mass. Nov. 10, 2010) (holding that public roads do not provide drivers with any reasonable expectation of privacy).

233. *See Pineda-Moreno*, 591 F.3d at 1216; *Garcia*, 474 F.3d at 996.

b. Nature of the Police Intrusion Consideration

The circuit courts also considered the nature of the police activity.[234] The Seventh and Ninth Circuits found that GPS surveillance did not intrude more than previously approved types of physical tracking and thus did not warrant a higher level of privacy.[235] In *Garcia*, the court found that the GPS tracking device functioned as a "substitute" for police tracking of "a car on a public street" that was "unequivocally *not* a search within the meaning of the amendment."[236] The courts found that minimal intrusion did not breach a reasonable expectation of privacy.[237] Government activity classified as a minor intrusion does not breach a reasonable expectation of privacy.[238] This analysis mirrors that of the *Knotts* Court.[239]

c. Kind of Information Consideration

The Seventh and Ninth Circuits also analyzed the type of information in deciding whether a reasonable expectation of privacy exists.[240] In fact, these circuits seem to mostly focus on this issue, mirroring the Supreme Court's emphasis on this consideration in its evaluation of new technology in the past.[241]

Where the court sees the GPS as conveying the same kind of information as physical surveillance, no search exists.[242] The Seventh and Ninth Circuit courts saw no difference in the information gained by the police using an electronic beeper in *Knotts* and the current GPS technology.[243] These courts simply saw GPS technology as a more efficient form of visual surveillance or tracking.[244]

For instance, in *Garcia* the court discussed the minimal differences and vast similarities it perceived between the use of GPS technology and other police surveillance techniques, which had already been found not to be a

234. *See supra* Part I.C.3.b.

235. *See, e.g.*, *Pineda-Moreno*, 591 F.3d at 1216 (holding that the police could have obtained only the same information as by physically following the car). District courts in other circuits have also followed this logic. *See* United States v. Jesus-Nunez, No. 1:10-CR-00017-01, 2010 WL 2991229, at *3 (M.D. Pa. July 27, 2010) (holding that the use of GPS to overcome the impracticality of constant surveillance was immaterial).

236. *See Garcia*, 474 F.3d at 997.

237. *See id.* at 998; *see also Pineda-Moreno*, 591 F.3d at 1216.

238. *See supra* notes 121–22 and accompanying text.

239. *See supra* notes 167–68 and accompanying text.

240. *See supra* Part I.C.3.c (discussing this consideration).

241. *See* Recent Case, *supra* note 35, at 2233 (discussing the Seventh Circuit's focus on what is and is not public information); *see also* Hutchins, *supra* note 93, at 1199 (noting the Court's emphasis on the type of information obtained by new technology).

242. *See supra* notes 132–33 and accompanying text.

243. United States v. McIver, 186 F.3d 1119, 1125 (9th Cir. 1999). This application of prior precedent to new, potentially more intrusive technologies has been criticized as ineffective. *See* Hutchins, *supra* note 93, at 1187–88 (arguing that intrusiveness of the type and quantity of information should be considered as opposed to reflexively applying precedent only dealing with less intrusive technology).

244. *See, e.g.*, United States v. Garcia, 474 F.3d 994, 997 (7th Cir. 2007).

search.[245] The *Pineda-Moreno* court held that the fact that the same information could be obtained via more traditional surveillance trumped the fact that the new technology worked differently.[246] The newer technology provides the same kind of information as the old: the location of the suspect.[247] These courts simply saw GPS technology as a more efficient, and completely allowable, form of visual surveillance or tracking.[248]

d. Quantity of Information Consideration

The circuit courts that have found that GPS monitoring does not violate the Fourth Amendment have not explicitly addressed how the quantity of information obtained may affect an individual's reasonable expectation of privacy. However, the U.S. District Court for the District of Massachusetts, in *United States v. Sparks*,[249] has recently addressed this argument. Since the court found that GPS monitoring does not qualify as a search under the Fourth Amendment and *Knotts*, this analysis may be indicative of how other like-minded courts will address the quantity of information consideration.[250] The *Sparks* court simply accepted the factual truth that the GPS provided a "wealth of information about [the defendant's] personal preferences," but found that it had little legal significance.[251] The court held that the quantity of the information did not matter where the types of information remained the same.[252] This focus on the type, rather than the quantity, of information reflects the Seventh and Ninth Circuits' current approach.[253]

2. A Potential Middle Ground: Eighth Circuit's Qualified Dicta

The Eighth Circuit's approach mirrors that of the Seventh and Ninth Circuits, but differs slightly due to the unique procedural posture in *United States v. Marquez*.[254] In *Marquez*, the Eighth Circuit found that the petitioner did not have standing to bring a claim regarding the installation

245. *See id.* ("The only difference is that in the imaging case nothing touches the vehicle . . . . But it is a distinction without any practical difference.").

246. *See* United States v. Pineda-Moreno, 591 F.3d 1212, 1216–17 (9th Cir.), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515). The Court distinguished *Kyllo* because it provided information about the home that was otherwise unobtainable without a warrant. *Id.* at 1216. The fact that the GPS technology was new and not readily available to the public made no difference since the type of information obtained was the same. *Id*.

247. *Id.*

248. *Garcia*, 474 F.3d at 997.

249. No. 10-10067-WGY, 2010 WL 4595522 (D. Mass. Nov. 10, 2010).

250. *Id.* at *8.

251. *Id.* at *7–8.

252. *Id.* at *8 ("Although the continuous monitoring may capture quantitatively more information than brief stints of surveillance, the type of information collected is qualitatively the same."); *see also* Jallad, *supra* note 46, at 367–68 (asserting that the GPS's ability to collect large amounts of data does not indicate a larger intrusion than more primitive tracking devices when all the information is public information).

253. *See supra* Part II.B.1.c.

254. 605 F.3d 604 (8th Cir. 2010).

or monitoring of a GPS.[255] The court still opted to speak on whether monitoring of a GPS constituted a search.[256]

Much like the Seventh and Ninth Circuits, the Eighth Circuit looked at the public nature of the car on the road, finding that public exposure undermined the reasonable expectation of privacy.[257] In upholding the use of GPS, the court looked at the non-invasive nature of the police activity.[258] It also determined that the information gathered was the same as that obtained through typical physical surveillance.[259]

However, despite this similarity in analysis, the Eighth Circuit did not state its holding in the same manner as the Seventh and Ninth Circuits. The court set some limits to the constitutionality of monitoring a GPS unit:

> When electronic monitoring does not invade upon a legitimate expectation of privacy, no search has occurred. . . . Consequently, when 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.[260]

The court indicates a potential middle ground where law enforcement officials do not need a warrant for GPS monitoring, but must meet a minimal level of police accountability.[261]

3. GPS Monitoring Is a Fourth Amendment Search: D.C. Circuit Says *Knotts* Does Not Apply

In contrast to the other circuits, the D.C. Circuit found that the monitoring of a GPS unit for approximately one month was a Fourth Amendment search.[262] *Maynard* marks the first federal circuit court to

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255. *Id.* at 609.

256. *Id.* at 609–10.

257. *Id.* at 609 ("A person traveling via automobile on public streets has no reasonable expectation of privacy in his movements from one locale to another." (citing United States v. Knotts, 460 U.S. 276, 281 (1983))).

258. *Id.* at 610 (emphasizing the limited nature of the search).

259. *Id.* at 609–10 (distinguishing between information obtained by electronic surveillance in the home and in public as opposed to distinguishing between information obtained by physical and electronic surveillance).

260. *Id*.

261. Reasonable suspicion may have played a role in the Seventh and Ninth Circuits as well. *See* United States v. Pineda-Moreno, 591 F.3d 1212, 1217 n.3 (9th Cir.) (refusing to determine whether police had reasonable suspicion because there was no search), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515); United States v. Garcia, 474 F.3d 994, 996 (7th Cir. 2007) (stating that the district court found that there was reasonable suspicion for the GPS monitoring, but that the circuit court found this was not necessary).

262. United States v. Maynard, 615 F.3d 544, 566 n.* (D.C. Cir.) (noting that police had had a warrant to install the GPS, but it had expired), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010). A number of state courts have agreed with this finding. *See, e.g.*, Commonwealth v. Connolly, 913 N.E.2d 356, 370–71 (Mass. 2009) (finding warrant issued to be valid); People v. Weaver, 909 N.E.2d 1195, 1201–03 (N.Y. 2009); State v. Campbell, 759 P.2d 1040, 1049 (Or. 1988) (regarding a radio transmitter); State v. Jackson, 76 P.3d 217, 224 (Wash. 2003). Although many of the state courts decided based

state that the monitoring of a GPS unit on an individual's vehicle constitutes a Fourth Amendment search.[263] The *Maynard* court used the same considerations as the Seventh, Eighth, and Ninth Circuits, but found that they applied differently to prolonged and extensive GPS surveillance.[264]

a. Public Exposure Consideration

The *Maynard* court did not apply the *Knotts* public exposure analysis without consideration of how the new technology affected the precedent.[265] In *Maynard*, the court found that, while *Knotts* stated that an individual has no reasonable expectation of privacy on public thoroughfares, it did not stand for the premise that there was absolutely no expectation of privacy in his movements.[266] Instead, the *Maynard* court looked at the probability that an average individual would have knowledge or access to the movements.[267] In other words, it looked to see if the movements were truly "exposed."[268] The Supreme Court has utilized this probabilistic approach to public exposure in the past.[269]

The D.C. Circuit found that individuals did not publicly expose these movements over a prolonged time period "because the likelihood a stranger would observe all those movements is not just remote, it is essentially nil."[270] Individuals do not intentionally expose every movement, route, and location over the course of a month in his vehicle and no other legitimate source of surveillance could provide such exposure.[271] The court found not only that an individual would reasonably expect her movements to be private, but also that society would recognize this expectation as reasonable.[272]

b. Nature of Police Intrusion Consideration

The *Maynard* court also evaluated the nature of the police activity. It classified the constant monitoring of the GPS tracker as an intrusive investigative technique despite the minimal physical intrusion.[273] The court

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on their respective state constitutions as opposed to the U.S. Constitution, their analyses are indicative of the issues surrounding the GPS debate.

263. Kerr, *supra* note 146.

264. *See infra* Part II.B.3.

265. *Maynard*, 615 F.3d at 558.

266. *Id.* at 557.

267. *Id.* at 558–61 (citing Bond v. United States, 529 U.S. 334, 338–39 (2000); California v. Greenwood, 486 U.S. 35, 40 (1988); California v. Ciraolo, 476 U.S. 207, 213 (1986)).

268. *Id.* at 558–62.

269. *See supra* notes 116–17 and accompanying text.

270. *Maynard*, 615 F.3d at 560.

271. *Id.*

272. *See id.* at 563 (recognizing an easier case where monitored activities occurred within the home, but asserting that privacy is not completely given up once an individual leaves the threshold of his home).

273. *Id.* at 560. The court compared the difference between an undercover agent recording a conversation and a warrantless wiretap. *Id.* at 566. Although the same

compared the month-long surveillance with the relatively minimal intrusion occurring in *Knotts*.[274] It reasoned that this type of intrusion exceeds the intrusion allowable by police activity and violated the reasonable expectation of privacy.[275] The court found that the level of intrusion of the police activity—the monitoring of an individual's every movement over the course of a month—was much closer to the wholesale surveillance that *Knotts* warned against than to a limited, non-intrusive search.[276]

c. Kind of Information Consideration

Without using the terms "sense augmenting" or "extrasensory,"[277] the D.C. Circuit determined that the information obtained by the prolonged surveillance of the GPS differed greatly from the limited beeper tracking in *Knotts*.[278] The device had not simply augmented what the police could already do, but rather allowed for the atypical "visual surveillance so prolonged it reveals information not exposed to the public."[279]

The *Maynard* court also noted the private nature of the information obtained, suggesting that it warranted particular protection.[280] Specifically, the court noted that prolonged surveillance provides different types of information to police than short-term surveillance.[281] The kind of information, linked with the quantity of information discussed in the next section, indicated that a reasonable expectation of privacy existed.[282]

d. Quantity of Information Consideration

The court also considered the sheer volume of information obtained by GPS surveillance. It differentiated between prolonged and short-term surveillance, noting that the former gives much more information than the

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information is recorded, in the former method "reasonable expectation of control over personal information would not be defeated; in the latter it would be." *Id.*

274. *Id.*; *see also* People v. Weaver, 909 N.E.2d 1195, 1199 (N.Y. 2009) (focusing on the sophisticated nature of the device and the fact that the device now makes it practicable to have constant surveillance, a fact not allowed by the "primitive" *Knotts* beeper).

275. *Maynard*, 615 F.3d at 563–64; *see also* State v. Campbell, 759 P.2d 1040, 1045–46 (Or. 1988) (analogizing the intrusive GPS surveillance on public streets to a situation where a police officer could take pictures of a living room from the street, but not enter the room).

276. *Maynard*, 615 F.3d at 556 n.*.

277. *See supra* notes 129–31 and accompanying text.

278. *Maynard*, 615 F.3d at 556–68.

279. *Id.* at 565; *see also* State v. Jackson, 76 P.3d 217, 222, 231 (Wash. 2003) (requiring a warrant for GPS due in part to the enhancement of police abilities with this device both in surveillance and in volume).

280. *Maynard*, 615 F.3d at 563–64; *see also Jackson*, 76 P.3d at 223 (taking into consideration the personal and private nature of the information obtained by GPS tracking).

281. *Maynard*, 615 F.3d at 562. For a brief discussion of how this prolonged surveillance might also violate the First Amendment right to freedom of association, see Walsh & Dominguez, *supra* note 29, at 26.

282. *Maynard*, 615 F.3d at 562 ("A person who knows all of another's travels can deduce whether he is a weekly church goer, a heavy drinker, a regular at the gym, an unfaithful husband, an outpatient receiving medical treatment, an associate of particular individuals or political groups—and not just one such fact about a person, but all such facts.").

latter.[283] The *Maynard* court stated that *Knotts* inadequately addressed situations of prolonged surveillance with increased levels of information.[284] *Knotts* noted that twenty-four hour surveillance might trigger new constitutional issues in the future.[285] The D.C. Circuit felt it was time to look at the question again.[286]

The *Maynard* court chose to look at the information obtained in its aggregate form. Analogizing to *Reporters*, discussed in Part I.C.3.d, it found that the "whole reveals more—sometimes a great deal more—than does the sum of its parts."[287] Prior decisions had not considered the new ability of law enforcement officials to utilize comprehensive and continuous recording of the individual's movements to develop a profile.[288]

The fact that the police obtained information about defendant's "movements 24 hours a day for 28 days as he moved among scores of places, thereby discovering the totality and pattern of his movements from place to place to place," changed the analysis.[289] The court differentiated between the prolonged and recorded police surveillance tracking in *Maynard* and the limited and restricted tracking of *Knotts*.[290] The amount of information and time was troublesome to the *Maynard* court and required a warrant.[291]

C. Legislative Responses to the GPS Question

Congress has not yet addressed GPS surveillance explicitly.[292] Rule 41 of the Federal Rules of Criminal Procedure does provide guidelines for tracking device warrants.[293] Specifically, a magistrate judge can issue a warrant to install a tracking device within the jurisdiction and to monitor within the district and outside of it.[294] Rule 41 also requires that such a warrant specify the duration of its use, not to exceed forty-five days.[295]

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283. *Id.* at 562–63; *see also* Recent Case, *supra* note 35, at 2234–35 (asserting that courts should look at the intensity, duration, and level of detail of a search in determining reasonable expectations of privacy for new technologies).

284. *Maynard*, 615 F.3d at 557.

285. United States v. Knotts, 460 U.S. 276, 283–84 (1983).

286. *Maynard*, 615 F.3d at 557; *see also* People v. Weaver, 909 N.E.2d 1195, 1199 (N.Y. 2009) (noting that the *Knotts* beeper was only a small step beyond following a vehicle, while a GPS allows for constant, overwhelming surveillance).

287. *Maynard*, 615 F.3d at 558, 561.

288. Recent Case, *supra* note 35, at 2235.

289. *Maynard*, 615 F.3d at 558.

290. *Compare id.* (monitored constantly for twenty-eight days), *with Knotts*, 460 U.S. at 279 (monitored intermittently over three days).

291. *Maynard*, 615 F.3d at 558.

292. Hutchins, *supra* note 25, at 412 n.3 (stating that Title III of the Omnibus Crime Control and Safe Streets Act of 1968 governs the use of electronic monitoring devices, but does not apply to electronic transmitting devices that trace locations (citing 18 U.S.C. §§ 2510–2513, 2515–2522 (2000 & Supp. IV 2004))).

293. FED. R. CRIM. P. 41(b)(4).

294. *Id.*

295. *Id.* 41(e)(2)(C).

Installation must occur during the day, within ten days of the issuance of the warrant.[296]

Some states have opted to deal with both installation and monitoring GPS issues via legislation. Seven state legislatures have addressed installation and use of GPS units. Hawaii and Minnesota require court orders prior to installing or using a mobile tracking device unless the owner consents.[297] South Carolina, Utah, Oklahoma, and Florida provide guidelines for mobile tracking device authorization, but do not specifically require warrants.[298] Pennsylvania also provides guidelines for authorization for mobile tracking devices, but explicitly limits monitoring to locations without a reasonable expectation of privacy unless there are exigent circumstances or a warrant.[299]

III. RECOGNIZING A REASONABLE EXPECTATION OF PRIVACY IN GPS SEARCHES

Part II of this Note described the different approaches taken by courts in deciding whether an individual has a reasonable expectation of privacy in her vehicle and its movements when police utilize GPS surveillance. Part II.A discussed the debate surrounding the installation of a GPS. Part II.B described the circuit split among the federal courts regarding the monitoring of the GPS unit. With an understanding of these analytical divides, Part III examines the conflict described in Part II.

This Note asserts that a reasonable expectation of privacy exists in both the installation and monitoring processes. Part III.A argues that a reasonable expectation of privacy exists in light of an individual's property interest in her vehicle. Part III.B asserts that a reasonable expectation of privacy exists due to the inapplicability of *Knotts* to GPS technology.

Part III.C proposes a warrant requirement for GPS installation and monitoring and discusses the need for clear law enforcement rules. This section also dispels a common concern that requiring a warrant would eliminate the effective use of GPS technology. Finally, Part III.D suggests that a Congressional response may function best to protect privacy interests now and in the future.

A. GPS Installation Violates a Reasonable Expectation of Privacy

This part argues that courts should consider property interests in evaluating the installation of a GPS unit on private property. Part III.A.1 highlights how modern courts ignore property interests in the installation

296. *Id.* (allowing for exceptions to the daytime installation rule where police have good cause).

297. HAW. REV. STAT. § 803-42 (2010); MINN. STAT. ANN. §§ 626A.35, 626A.37, 626A.38 (West 2009).

298. FLA. STAT. § 934.42 (2010) (no specification of appropriate timeline); OKLA. STAT. ANN. tit. 13, § 177.6 (Supp. West 2011) (allowing monitoring for up to 60 days without extension); S.C. CODE ANN., § 17-30-140 (Supp. 2009) (no time limit); UTAH CODE ANN. § 77-23a-15.5 (West 2008) (60 days).

299. 18 PA. CONS. STAT. ANN. § 5761 (West 2000 & Supp. 2010).

analysis. Part III.A.2 examines how the installation of a GPS unit functions as a search in light of the reasonable expectation of privacy.

1. The Modern Installation Approach Incorrectly Ignores Property Interests

No general consensus exists among the courts about whether the installation of a GPS constitutes a Fourth Amendment search. The Supreme Court has not spoken definitively on the installation question, but it has suggested that the usurpation of individual property for police purposes violates the Fourth Amendment.[300]

The lower courts' current approaches focus only on the location of the vehicle when the police attach the GPS device[301]—ignoring the individual's property interest in her car.[302] Courts should consider whether police enter private property, but the inquiry should not stop there.[303] Some may find installation more palatable where it occurs on a public street, but this inquiry simply does not address the police's physical usurpation of protected property.

2. Application of the Property Interest Consideration Reveals a Reasonable Expectation of Privacy and a Fourth Amendment Search

Courts have failed to recognize the similarities between the GPS units in modern cases and the electronic listening devices in *Katz* and *Silverman*.[304] Though GPS cannot be said to penetrate the car, it bears striking functional resemblance to the use of the eavesdropping device in *Katz*, which was found to be a Fourth Amendment search.[305] There, the Court found that the attachment of the listening device violated the reasonable expectation of privacy within the telephone booth.[306] The case can be clearly understood in terms of property interests.[307] Katz had obtained a temporary property interest in that telephone booth which the police violated by attaching the

300. *See supra* Part I.D.1, notes 209–14 and accompanying text.

301. *See supra* Part II.A.1.

302. *See supra* notes 105–07 and accompanying text.

303. This Note would be remiss if it did not comment on the *Pineda-Moreno* decision's treatment of installation. *See supra* notes 201–06 and accompanying text. GPS surveillance should not be allowed to undercut the protection already granted to the curtilage. The Supreme Court should at the very least maintain the curtilage protections it has already provided. *See supra* note 103.

304. *See supra* Part I.C.1, notes 210–14 and accompanying text.

305. Katz v. United States, 389 U.S. 347, 353 (1967) ("The Government's activities . . . violated the privacy upon which he justifiably relied while using the telephone booth . . . . The fact that the electronic device employed to achieve that end did not happen to penetrate the wall of the booth can have no constitutional significance.").

306. *Id.* at 358–59.

307. *See supra* notes 96–97 and accompanying text; *see also* Kerr, *supra* note 97, 822–23. For a discussion of how *Katz* continues to protect property interests, and how the case may never have shifted the Court's focus from them, see *supra* notes 91, 96–97 and accompanying text.

device to commandeer it.[308] His property right to exclude others was violated.[309]

In *Silverman*, the attachment of the monitoring device on the heating duct of the home transformed the home into a microphone for police surveillance.[310] The Court reasoned that the usurpation of the premises in order to get information law enforcement officials could not otherwise have obtained violated the Fourth Amendment.[311] Other courts have extended this logic to tracking devices because the device also allows police to usurp private property indiscriminately.[312]

The Court should find similarly in the case of GPS units. The GPS monitor transforms the car into a police tool. It allows every movement of the car to be recorded and used against the individual.[313] The attachment of a GPS device to private property physically encroaches and intrudes on private property—much like the devices in *Katz* and *Silverman*.[314] It usurps the individual's vehicle.[315]

Some courts may want to focus on the lower expectation of privacy of the automobile than in the home.[316] However, more recent Supreme Court jurisprudence protects both property interests and the expectation of privacy in the automobile.[317] The warrantless attachment of a GPS unit on a vehicle violates a reasonable expectation of privacy and the Court should protect against it.[318]

B. Monitoring Also Violates a Reasonable Expectation of Privacy

An individual also has a reasonable expectation of privacy in the movements monitored by a GPS unit. Part III.B.1 argues that the *Knotts* precedent does not apply because it does not address the increased intrusiveness of GPS surveillance. Part III.B.2 focuses on one of the major differences between beeper and GPS technology—the quantity and kind of information obtained. It asserts that a reasonable expectation of privacy exists in light of the potential for law enforcement officials to obtain huge quantities of personal information. Part III.B.3 examines how the other reasonable expectation of privacy considerations—public exposure and the

308. *See supra* notes 96–97 and accompanying text; *see also* Kerr, *supra* note 97, 822–23 ("Like the hotel guest gaining Fourth Amendment rights in the hotel room during his stay, Katz acquired the owner's privacy rights in the phone booth during the period of his phone call.").

309. *See* Kerr, *supra* note 97, at 823.

310. 365 U.S. 505, 509 (1961); *see supra* notes 210–12 and accompanying text.

311. *See supra* note 212 and accompanying text.

312. *See supra* notes 215–19 and accompanying text.

313. *See supra* Part I.A.1.

314. *See supra* Part II.A.2.

315. *See supra* Part II.A.2.

316. *See supra* notes 106–07 and accompanying text.

317. *See supra* Part I.C.2.

318. *See supra* notes 104–07. Issues may arise around borrowed cars or other insubstantial property interests, but the Court will deal with these standing issues under a different analysis. *See supra* notes 81–84.

nature of police intrusion—also indicate a reasonable expectation of privacy in light of the advanced capabilities of GPS technology.

1. Reflexively Applying Past Precedent Is Insufficient: The Technology Is Too Different

Applying *Knotts* without modifying its approach in consideration of the unique characteristics of new technology serves to greatly underestimate the intrusive capabilities of GPS surveillance.[319] Even in 1983, the Court noted that it would have to treat more advanced technologies differently.[320] Since then, almost every GPS monitoring case has expressed concern over the widespread use of newer and more advanced surveillance technology.[321] Despite these concerns, the analyses of the Seventh, Eighth, and Ninth Circuits completely disregard the increased intrusiveness of GPS technology compared to the older beeper technology.[322]

This approach ignores the dissimilarities between the technologies.[323] When the Court decided *Knotts* in 1983, tracking and observing an individual, even with a tracking device, required considerable effort.[324] Today police can, and do, readily obtain GPS units.[325] Prior technology did not provide recordings of every movement, but GPS does.[326] The beepers used in *Knotts* and *Karo* could provide only limited, and sometimes incomplete, location information.[327] On the contrary, GPS units can accurately pinpoint location within meters, as well as identify elevation, speed and direction.[328] In addition, law enforcement officials typically use GPS technology over longer periods of time than past technology due to its low cost, ease of use, and advanced capabilities.[329]

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319. *See* Hutchins, *supra* note 93, at 1187–88.

320. United States v. Knotts, 460 U.S. 276, 284 (1983) (stating that when "such dragnet-type law enforcement practices" occurred, the court would deal with them).

321. *See, e.g.*, United States v. Marquez, 605 F.3d 604, 610 (8th Cir. 2010) ("It is imaginable that a police unit could undertake 'wholesale surveillance' . . . [which] would raise different concerns than the ones present here."); United States v. Pineda-Moreno, 591 F.3d 1212, 1216 n.2 (9th Cir.) (agreeing that if mass surveillance were to occur, then the Fourth Amendment applications would need to be reevaluated), *reh'g denied*, 617 F.3d 1120 (9th Cir. 2010), *petition for cert. filed*, (U.S. Nov. 10, 2010) (No. 10-7515); United States v. Garcia, 474 F.3d 994, 998 (7th Cir. 2007) ("Should government someday decide to institute programs of mass surveillance of vehicular movements, it will be time enough to decide whether the Fourth Amendment should be interpreted to treat such surveillance as a search.").

322. *See supra* Parts II.B.1, II.B.2 (discussing these circuits' approaches).

323. Hutchins, *supra* note 93, at 1187.

324. Blitz, *supra* note 34, at 1374.

325. *See supra* notes 33–38 and accompanying text.

326. *See supra* notes 56–58 and accompanying text.

327. *See supra* note 177 and accompanying text.

328. *See supra* notes 24–28 and accompanying text.

329. *Compare* United States v. Jesus-Nunez, No. 1:10-CR-00017-01, 2010 WL 2991229, at *2 (M.D. Pa. July 27, 2010) (more than eleven months), *and* People v. Weaver, 909 N.E.2d 1195, 1195 (N.Y. 2009) (sixty-five days), *with* United States v. Knotts, 460 U.S. 276, 279 (1983) (three days).

Allowing the Court's evaluation of early surveillance technology to automatically determine how the Court deals with advanced surveillance technology fails to address these greater intrusions of new technology.[330] The tracking devices of 2011 are no longer the minimal intrusions of twenty-five years ago. Limits on the warrantless use of GPS technology must reflect the realities of new technology in order to provide actual protection.[331]

2. The Reasonable Expectation of Privacy Analysis Must Seriously Consider Both the Kind and Quantity of Information GPS Can Obtain

One of the significant differences between the *Knotts* beeper technology and the GPS technology of *Pineda-Moreno* lies in the quantity and extent of the information able to be conveyed to law enforcement.[332] The Seventh, Eighth, and Ninth Circuits have failed to address this difference.[333] By contrast, the D.C. Circuit in *Maynard* noted that the kind and quantity of information provided by the GPS unit undermines the individual's subjective reasonable expectation of privacy, as well as societal expectations of privacy.[334]

The Seventh, Eighth, and Ninth Circuits classified GPS technology and the kind of information it obtained as "sense augmenting."[335] The "equating [of] electronic surveillance with what police might theoretically accomplish with [the] naked eye" severely limits the Fourth Amendment and protects little.[336] The GPS, though similar in function to other tracking devices, provides novel information.[337] The GPS accomplishes what police cannot realistically accomplish independently—constant surveillance—indicating more than just sense augmentation.[338]

The emphasis on the visual nature of information, as opposed to the vast amount of details that prolonged surveillance can provide, severely underestimates the capability of the GPS. The *Karo* court recognized that different types of information required protection from tracking.[339] This realization needs to be extended to the modern GPS technology. The GPS

330. Hutchins, *supra* note 93, at 1187.

331. United States v. Garcia, 474 F.3d 994, 997 (7th Cir. 2007) (stating that the Fourth Amendment must "keep pace with the march of science").

332. *See supra* Parts I.A.1, I.A.3.

333. *See supra* Parts II.B.1.c, II.B.1.d, II.B.2.

334. *See supra* Parts II.B.3.c, II.B.3.d; *see also* Hutchins, *supra* note 93, at 1188 (advocating intrusiveness of the technology as the "benchmark" for assessing a search).

335. *See supra* notes 132–34 (describing the sense augmenting analysis); notes 242–44 (noting that the Seventh and Ninth Circuits applied this analysis).

336. Maclin, *supra* note 91, at 85. A number of Supreme Court Justices agree. *See* CLANCY, *supra* note 66, at 313 n.149 (identifying numerous dissenting opinions in Fourth Amendment cases noting the need to provide protection in the face of advancing and intrusive technology).

337. *See supra* Part I.A.3; *see also* Clancy, *supra* note 88, at 30 (noting that technology has "dramatically increased the government's ability to obtain information").

338. *See supra* notes 34–37 and accompanying text.

339. *See supra* note 166 and accompanying text.

provides private, and potentially extensive, information and it deserves protection.

The aggregate form of this private information even more clearly conveys the need for protection. When police can monitor every movement, a feat not possible with the *Knotts* technology, the police obtain the totality and pattern of an individual's movements.[340] No individual reasonably expects to divulge the compilation of movements, the inferences drawn, and the sheer volume of information potentially obtained by GPS.[341]

However, the concern about "quantity" involves not only the aggregate form, but also the constant and unrelenting nature of the surveillance.[342] A comparison of the new technology with the intermittency of past tracking devices amplifies this concern.[343] The potential alone for this kind of information to be uncovered requires protection.

The *Maynard* approach better protects against both quantity concerns.[344] Furthermore, recognition of a reasonable expectation of privacy in the sum total of an individual's affairs would better match societal expectations[345]—the emphasized component of the *Katz* test.[346] The *Knotts* Court put off the question of twenty-four hour surveillance, but the time has come for the Court to address the realities of GPS.[347]

3. Other Considerations Also Point to a Reasonable Expectation of Privacy When Viewed In Light of the Advanced Capabilities of the GPS

The Seventh, Eighth, and Ninth Circuits generally failed to consider the difference between the current technology and the *Knotts* technology.[348] The circuits failed to do so in regards to the differences in the kind and quantity of information.[349] This section asserts that other considerations also point to the existence of a reasonable expectation of privacy in light of the increased intrusiveness of the GPS technology.

a. Public Exposure Consideration

The Seventh, Eighth, and Ninth Circuits emphasized the public exposure consideration.[350] However, they failed to consider how the technology affects this analysis. That an individual keeps a car in public does not automatically mean that she then voluntarily conveyed all her movements, especially over long periods of time.[351] No one expects her movements to

340. *See supra* notes 287–91 and accompanying text.
341. *See supra* notes 283–86.
342. *See supra* notes 53–59 and accompanying text.
343. *See supra* notes 53–59 and accompanying text.
344. *See supra* Part II.B.3.
345. Recent Case, *supra* note 35, at 2235.
346. *See supra* notes 93–95 and accompanying text.
347. *See supra* note 137 and accompanying text.
348. *See supra* Part III.B.1.
349. *See supra* Parts II.B.1.c, II.B.1.d, II.B.2.
350. *See supra* Parts II.B.1.a, II.B.2.
351. *See supra* Part II.B.3.a.

be recorded for that amount of time.[352] In addition, a member of the public would not have access to this level of information, a factor in the consideration.[353] Instead of simply noting the outdoor nature of a car, *Maynard* focused on the more difficult question of whether the individual's movements were actually exposed.[354] The lack of intentional exposure and public accessibility indicates a reasonable expectation of privacy in the movements.[355]

b. Nature of Police Intrusion Consideration

None of the courts have focused on the nature of the police activity.[356] Even still, the increased level of intrusiveness of twenty-four hour tracking for months at a time undoubtedly indicates a more intrusive act than intermittent tracking for a few days.[357] The fact that attachment of the unit to the car also intrudes on the individual's property interest, as discussed in Part III.A, also indicates the increased level of intrusion.

C. A Warrant Should Be Required for Installation and Monitoring of GPS To Uphold the Protections of the Fourth Amendment

Since a reasonable expectation of privacy exists in both aspects of GPS surveillance, as examined in Parts III.A and III.B, the Fourth Amendment applies.[358] This section advocates for a clear warrant requirement for GPS surveillance. It emphasizes the need for clear, unambiguous rules.[359] It also addresses concerns that a warrant requirement will undermine the effective use of GPS technology.[360]

1. Law Enforcement Officials Need Clear Rules

The Fourth Amendment must protect privacy, but must also provide appropriate guidelines to law enforcement agencies.[361] In order to protect against unnecessary intrusions, the police need to know what violates Fourth Amendment rights prior to taking action. Clear rules provide the necessary "ex ante guidance for police."[362]

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352. *See supra* Part II.B.3.a.
353. *See supra* note 270 and accompanying text.
354. *See supra* Part III.B.3.a; *see also* Koppel, *supra* note 54, at 1084 (arguing that GPS surveillance goes beyond basic public exposure to a level not anticipated or otherwise tolerated).
355. The movements may technically be in public, but they were previously obscured by the fact that they had to be individually identified and compiled. *See supra* note 146; *see also* United States v. Karo, 468 U.S. 705, 716. (1984) (noting a difference between information voluntarily conveyed and secretly obtained within the home).
356. *See supra* Parts II.B.1.b, II.B.2, II.B.3.b.
357. *See supra* note 290.
358. *See supra* notes 71–76 and accompanying text.
359. *See* discussion *infra* Part III.C.1.
360. *See* discussion *infra* Part III.C.2.
361. *See* Kerr, *supra* note 96, at 544.
362. *Id.*

Maynard emphasizes the differences between prolonged surveillance and does not apply the *Knotts* analysis.[363] Despite this improvement, *Maynard* fails to adequately provide a cogent holding to be applied consistently in future cases.[364] Clear warrant requirements are necessary to avoid future violations of the Fourth Amendment.

The *Maynard* holding requires a warrant because it finds one month of GPS surveillance too intrusive, but does not provide clear guidance on what is "too intrusive" for future cases.[365] Under the language of the case, the *Maynard* court could potentially accept information from a GPS unit on a car for one to two days.[366] The court relied on the aggregate of information, creating an unclear rule for police.

However, the quantity analysis is not only concerned with the aggregate.[367] The constant nature of GPS searches indicate a level of intrusiveness not yet dealt with by the Court in regards to tracking devices.[368] The emphasis moving forward should be on the reasonable expectation of privacy violated by installing and monitoring a GPS device.[369] The Fourth Amendment clearly requires a warrant in this type of situation.[370] The inadequacy of *Maynard* can be easily addressed with a definitive warrant requirement for GPS installation.

2. A Warrant Requirement Will Protect Privacy and Only Minimally Affect the Efficacy of Law Enforcement Departments

This section asserts that a warrant requirement will protect individual privacy, but will not severely limit law enforcement officials' effective use of GPS technology. The Fourth Amendment serves as a barrier between police activity and individual liberty[371]—which the law needs to respect. The Constitution presumes a warrant requirement for searches, and the Court should not allow continual sidestepping of the requirement.[372] There is no need for additional exceptions.

Warrants will not likely hinder the successful use of GPS technology by law enforcement officials. In many cases already before the courts, police had applied for and received GPS warrants.[373] The federal judiciary

363. *See supra* Part II.B.3.
364. *See* Kerr, *supra* note 146.
365. *See id.*
366. *See* United States v. Jones, 625 F.3d 766, 769 (D.C. Cir. 2010) (Sentelle, J., dissenting) (denying rehearing en banc); Kerr, *supra* note 146.
367. *See supra* notes 342–43.
368. *See generally* Hutchins, *supra* note 25 (discussing how intrusiveness based on type and quantity of information should be a major factor in determining the constitutionality of GPS searches).
369. *See supra* Parts III.A, III.B.
370. *See supra* notes 71–76 and accompanying text.
371. Hutchins, *supra* note 25, at 444.
372. *See supra* notes 67–69 and accompanying text.
373. *See* United States v. Maynard, 615 F.3d 544, 566 n.* (D.C. Cir.) (noting that police had had a warrant to install the GPS, but it had expired), *reh'g denied*, 625 F.3d 766 (D.C. Cir.), *cert. denied*, 131 S. Ct. 671 (2010); Commonwealth v. Connolly, 913 N.E.2d 356,

already has standards in place for this type of warrant.[374] These facts indicate that the standard probable cause requirement could easily be employed in other cases.

In addition, police often use GPS surveillance for a prolonged period in order for it to be useful.[375] The additional time necessary to obtain a warrant will not likely detract from the usefulness of the process. In cases where this is not true, the exigent circumstances exception already permits warrantless surveillance.[376] The other categorical exceptions to the warrant requirement will also still apply to all GPS situations.[377] The Court does not need to create an additional exception.

A warrant requirement would only affect the ability of police to engage in GPS surveillance without probable cause.[378] The Court should not condone this because allowing ongoing GPS surveillance with no probable cause undermines the intent of the Fourth Amendment to "end the abuse[s] of general exploratory searches."[379] Ultimately, the fact that police may need to apply for more warrants is not a legitimate reason to extend warrant exceptions.[380]

D. Congress May Be More Willing and Better Equipped To Create Comprehensive Installation and Monitoring Rules

Part III.C discusses the need for clear Fourth Amendment rules for law enforcement departments and advocates using the warrant requirement to reach this goal. The Court could classify GPS surveillance as a search based on the reasonable expectations of privacy that are violated.[381] However, this Note suggests that the most complete and comprehensive protection could be provided by Congress in light of the many types of GPS devices and the ever-advancing nature of the technology.

This section argues that Congress may be better equipped to comprehensively protect reasonable expectations of privacy for two basic reasons. First, as will be discussed in Part III.D.1, the Court has not been sensitive to past changes of technology and much of the concern about GPS lies in how different it is from precedent. Second, Congress has the ability to look beyond the facts of a single case to consider various forms of technology and to react to technological advances in a way that will continue to protect Fourth Amendment interests. Part III.D.2 will discuss

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370–71 (Mass. 2009) (finding warrant issued to be valid); State v. Jackson, 76 P.3d 217, 221 (Wash. 2003) (10-day warrant issued).

374. *See supra* notes 294–96 and accompanying text.

375. *See supra* notes 1–16 and accompanying text.

376. *See supra* note 68.

377. *See supra* note 68.

378. *See supra* note 69 and accompanying text.

379. HUBBART, *supra* note 61, at 75; *see supra* notes 62–67 and accompanying text.

380. *See* United States v. Karo, 468 U.S. 705, 718 (1984) ("The argument that a warrant requirement would oblige the Government to obtain warrants in a large number of cases is hardly a compelling argument against the requirement.").

381. *See supra* Parts III.A, III.B.

how Congress can create specific rules regarding the installation and monitoring of GPS devices.

1. The Court Has Not Been Sensitive to the Intrusiveness of New Technology

The Court could certainly require a warrant to protect against unreasonable GPS searches under the analysis of Parts III.A and III.B. However, a few factors hinder the ability of the Court to do so effectively.

The Court has shown itself to have difficulty dealing with new technologies.[382] The wide classification of technology as "sense augmenting," and the dispositive nature of that classification, indicate the Court's reluctance to recognize the privacy intrusions created by new technology.[383] The Court's reasonable expectation of privacy test can also be self-fulfilling. As the Court allows these increased intrusions, it lowers the supposedly objective "expectation", leading to a greater allowance of intrusive techniques under the *Katz* test.[384] This downward spiral does not adequately reflect the protection that the Fourth Amendment intended.[385]

In addition, a number of functional difficulties arise. The Court typically creates narrow rules limited to the facts of the case in front of them.[386] This prevents comprehensive protections. Stare decisis also limits the Supreme Court and does not always allow for logical changes in light of technological advancement.[387] Furthermore, delays inherent in the system have the practical effect that the Court does not address a technological issue until a newer technological device is already infringing rights.[388] These limitations, coupled with the Court's reluctance, indicate that the judicial branch may not be the most effective or expedient in providing protections from GPS surveillance.

2. Congress Can Respond Best to the GPS Problem

This Note has discussed at length the issues surrounding the installation and monitoring of GPS. In order for adequate protection, both aspects should be addressed. Congress, not the courts, is able to create rules to address both the installation and monitoring concerns holistically. Furthermore, if the Court does not adequately respond to the devastating

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382. *See supra* note 180 and accompanying text. *But see*, Katz v. United States, 389 U.S. 347, 361 (1967) (addressing electronic surveillance of public areas).

383. *See supra* notes 129–31 and accompanying text.

384. *See* Glancy, *supra* note 22, at 334 (quoting Minnesota v. Carter, 525 U.S. 83, 97 (1998) (Scalia, J., concurring)).

385. *See supra* Part I.B.1 (discussing the intent of the Fourth Amendment).

386. *See* Blitz, *supra* note 34, at 1420 (noting that Congress has more options than judges who must "resolve particular disputes with specified remedies").

387. *See supra* note 149 and accompanying text.

388. GPS technology has been used by civilians since 1996 and has not yet reached the Supreme Court. *See supra* notes 30–32. Technology continues to outpace the ability or willingness of the Court to respond.

effects of GPS on individual privacy, the Congress will have to independently protect individual's reasonable expectations of privacy.

The law should require a warrant for installation of a GPS because it violates a reasonable expectation of privacy.[389] However, requiring a warrant to install a GPS device on private property does not address every Fourth Amendment issue. Even after a device is attached, monitoring can violate a reasonable expectation of privacy.[390] Whether or not the Supreme Court decides to require a warrant, restraints on monitoring must be developed. In order to address the ambiguity issue of *Maynard*, discussed in Part III.C.1, definitive time limits for monitoring should be developed. Indefinite monitoring allows police to collect a huge amount of personal information.[391] A time frame would provide additional protection and alleviate the concerns about ongoing, relentless surveillance.[392] Congress is in a better position to develop such detailed limits.

Congress has acted in similar situations before and could easily do so in regards to GPS technology.[393] Congress can also better address GPS technology as a whole, while courtscan only address one type of device in one factual circumstance. The legislature can obtain the relevant information about various types of tracking devices and use it to develop comprehensive rules.[394]

Requirements regarding GPS surveillance will likely have to be updated since this type of technology is always advancing. For example, installation of a GPS in the current form may no longer be necessary, making even the Court's warrant requirement of questionable effectiveness.[395] Congress can better react and experiment with specific rules in response to these ongoing changes in technology.[396] Its legislation does not need to reflect past precedent and in many ways can better reflect actual "reasonable expectations of privacy." A legislative response would continue to protect individual privacy from Fourth Amendment violations in a way that the Court cannot.

CONCLUSION

Law enforcement departments can certainly benefit from the use of GPS technology to track suspects. However, this benefit cannot come at the cost of individual privacy. A reasonable expectation of privacy exists in the

389. *See supra* notes 71–76 and accompanying text.
390. *See supra* Part III.B.
391. *See supra* Part III.B.2.
392. *See supra* Part II.C (identifying legislative time frames).
393. *See supra* note 292; *see also* Omnibus Crime Control and Safe Streets Act of 1968, 18 U.S.C. §§ 2510–2513, 2515–2522 (2006); Electronic Communications Privacy Act, 18 U.S.C. §§ 2701–2711 (2006); Kerr, *supra* note 97, at 855–56 (describing both legislative reactions to Supreme Court decisions and legislative initiatives to protect privacy).
394. Kerr, *supra* note 97, at 807–08.
395. *See* Blitz, *supra* note 34, at 1386 (citing 47 C.F.R. §§ 20.3, 20.18 (2009) (noting that the FCC has also recently required all cell phone manufacturers to install tracking technology in their products to ensure that 911 responders can quickly find individuals).
396. Blitz, *supra* note 34, at 1420–21; Kerr, *supra* note 97, at 807–08.

information obtained by installing and monitoring a GPS unit. This expectation must be protected by a warrant. The courts have the opportunity to require a warrant on the basis of either the installation or monitoring of the device under the protections of the Fourth Amendment. Even so, Congress should protect the privacy of citizens from unreasonable search.