

COMMONWEALTH OF MASSACHUSETTS  
SUPREME JUDICIAL COURT  
NO. SJC-10355

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COMMONWEALTH  
Appellee

v.

EVERETT H. CONNOLLY  
Defendant-Appellant

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ON APPEAL FROM A JUDGMENT OF THE BARNSTABLE SUPERIOR  
COURT

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BRIEF OF *AMICUS CURIAE* ELECTRONIC PRIVACY INFORMATION  
CENTER (EPIC) IN SUPPORT OF APPELLANT

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## **INTEREST OF THE *AMICUS CURIAE***

The Electronic Privacy Information Center (EPIC) is a public interest research center in Washington, D.C., which was established in 1994 to focus public attention on emerging civil liberties issues and to protect privacy, the First Amendment, and other Constitutional values. EPIC has participated as *amicus curiae* in several cases before the United States Supreme Court, this Court, and other courts concerning privacy issues, new technologies, and Constitutional interests, including *Herring v. United States*, 129 S. Ct. 695 (2009); *Flores-Figueroa v. United States*, 274 Fed. Appx. 501, (8th Cir. 2008), *cert. granted*, 2008 U.S. LEXIS 7827 (U.S. Oct. 20, 2008) (No. 08-108); *Crawford v. Marion County Election Board*, 128 S. Ct. 1610 (2008); *Hiibel v. Sixth Judicial Circuit of Nevada*, 542 U.S. 177 (2004); *Doe v. Chao*, 540 U.S. 614 (2003); *Smith v. Doe*, 538 U.S. 84 (2003); *Department of Justice v. City of Chicago*, 537 U.S. 1229 (2003); *Watchtower Bible and Tract Society of N.Y., Inc. v. Village of Stratton*, 536 U.S. 150 (2002); *Reno v. Condon*, 528 U.S. 141 (2000); and *Nelson v. Salem State College*, 845 N.E.2d 338 (Mass. 2006).



EPIC has a particular interest in the impact of new surveillance technologies that have the capacity to enable warrantless, pervasive mass surveillance of the public by law enforcement agents. Such techniques offend the right of individuals to operate vehicles on public roads while maintaining privacy and their right to be free of unreasonable searches. EPIC has routinely urged regulators and courts to take meaningful steps towards protecting the privacy interests of motorists.<sup>1</sup>

The Barnstable Superior Court's determination in the present case threatens to severely restrict the privacy interests of Massachusetts drivers by allowing unchecked, continuous, surreptitious tracking and monitoring of individuals operating vehicles within the Commonwealth. The Fourth Amendment and Article 14 of the Massachusetts Declaration of Rights prohibits such tracking absent a valid warrant.

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<sup>1</sup> See, e.g. Comments of the Electronic Privacy Information Center to the National Highway Traffic Safety Administration, August 13, 2004, Docket No. NHTSA-2004-18029, available at [http://epic.org/privacy/drivers/edr\\_comm81304.html](http://epic.org/privacy/drivers/edr_comm81304.html) (supporting strong privacy safeguards for automobile Event Data Recorders (EDRs), including a clear consumer right to control the collection and dissemination of their driving data.); *Herring v. U.S.*, 129 S. Ct. 695, 708-709 (2009) (advocating for suppression of evidence discovered in search of motorist resulting from erroneous police records.).

## **SUMMARY OF THE ARGUMENT**

GPS tracking systems are a rapidly growing new technology based on data received from the Global Positioning System satellite constellation. The systems provide a wide range of benefits, including navigation, transportation, mapping, scientific research, economic planning, and public safety.

In the Commonwealth of Massachusetts, law enforcement agencies also use GPS tracking devices to monitor the activities of residents. The devices can be installed in vehicles, record data including location and velocity, and can store information indefinitely. In this particular application, GPS tracking systems transmit and store a large amount of detailed, personal information concerning an individual's movements. Typically, police covertly install GPS tracking systems in a suspect's vehicle. However, several public and private entities in the Commonwealth recently mandated the installation of GPS tracking units in vehicles for non-law enforcement purposes. Government proposals are presently pending that would effectively force the installation of GPS tracking units in every vehicle in America.

In this context, the proliferation of GPS tracking technology creates a large, and largely unregulated, repository containing detailed travel profiles of American citizens. Law enforcement access to such information raises the specter of mass, pervasive surveillance without any predicate act that would justify this activity. Constitutional protections against unreasonable searches are intended to protect individuals from this precise sort of government intrusion.

## ARGUMENT

### **I. GPS Tracking Systems Use Invasive Techniques to Collect and Store a Large Amount of Detailed, Personal Information About Individuals' Movements**

#### **A. *The Global Positioning System is a Satellite-based Service***

The Global Positioning System ("GPS") is a satellite-based service that enables individuals to determine their precise location anywhere on Earth. The U.S. government operates GPS, and provides free access to the public.<sup>2</sup> Anyone can use an electronic device, commonly called a "GPS receiver," to access GPS signals and determine their precise location, altitude, and speed.<sup>3</sup>

GPS relies on a minimum of 24 satellites configured to provide navigation and timing information worldwide on a constant 24 hour per day basis.<sup>4</sup> The U.S. Department of Defense created the system, launching the first GPS satellite in 1978.<sup>5</sup> The

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<sup>2</sup> 10 U.S.C. § 2281(b) (2009) (requiring the U.S. Dep't. of Def. to provide GPS "for peaceful civil, commercial, and scientific uses on a continuous worldwide basis free of direct user fees").

<sup>3</sup> ANITA L. ALLEN, *PRIVACY LAW AND SOCIETY* 846 (2007).

<sup>4</sup> U.S. Air Force, *Global Positioning System Fact Sheet*, <http://www.losangeles.af.mil/library/factsheets/factsheet.asp?id=5325> (last visited Apr. 16, 2009).

<sup>5</sup> Cheryl Pellerin, *United States Updates Global Positioning System Technology: New GPS satellite ushers in a range of future improvement*, U.S. Dep't of State, Feb. 3, 2006, <http://web.archive.org/web/20061001222057/http://usinfo.state.gov/xarchives/display.html?p=washfile-english&y=2006&m=February&x=200602031259281cnirellep0.5061609>.

GPS service became fully operational in December 1993.<sup>6</sup> There are currently 31 satellites, including "back-up" satellites, in the GPS constellation.<sup>7</sup> The satellites comprising the GPS network are run by the U.S. Air Force 50th Space Wing's 2nd Space Operations Squadron, located at Schriever Air Force Base in Colorado.<sup>8</sup> The satellites transmit data on two low-frequency radio bands, one reserved for military use, and the other assigned for civilian use.<sup>9</sup> Civilian GPS data is transmitted on the "L1" frequency, 1575.42 Mhz in the UHF band.<sup>10</sup> GPS satellites can provide three-dimensional location data (longitude, latitude and altitude) as well as precise velocity and timing information to an unlimited number of users simultaneously.<sup>11</sup> GPS signals "are so accurate, time can be figured to within a millionth of a second, velocity within a fraction of a mile per hour and

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<sup>6</sup> Letter from Les Aspin to Secretary of Transportation Federico Pena, (Dec. 8, 1993), available at <http://web.archive.org/web/20031116092811/http://www.navcen.uscg.gov/ftp/gps/ARCHIVES/gpsdoc/IOCLTR.TXT>.

<sup>7</sup> U.S. Coast Guard, Navigation Center, <http://www.navcen.uscg.gov/navinfo/Gps/ActiveNanu.aspx> (last visited Apr. 16, 2009).

<sup>8</sup> Global Positioning System Fact Sheet, *supra* note 4.

<sup>9</sup> Garmin, What is GPS?, <http://www8.garmin.com/aboutGPS/> (last visited Apr. 16, 2009).

<sup>10</sup> *Id.*

<sup>11</sup> Global Positioning System Fact Sheet, *supra* note 4.

location to within 100 feet."<sup>12</sup> Individuals can access the service by using a "GPS receiver."

**B. GPS Receivers Enable Individuals to Access the GPS Satellite System and Determine Their Location, Velocity, and Altitude**

A GPS receiver calculates and typically displays its location, velocity, altitude, and the time by decoding data from the GPS satellite network.<sup>13</sup> As the receiver moves, it continuously updates its location. GPS receivers are readily available through commercial retailers, and commonly used by the general public to assist in navigation.<sup>14</sup> Civilian-grade GPS receivers are small enough to be comfortably carried by hand or installed in vehicles.<sup>15</sup> They are capable of maintaining a strong signal lock with the GPS satellites, thus remaining accurate, even when they are used in "dense foliage or urban settings with tall buildings."<sup>16</sup>

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<sup>12</sup> U.S. Air Force, Global Positioning System Fact Sheet, <http://www.af.mil/factsheets/factsheet.asp?id=119> (last visited Apr. 16, 2009).

<sup>13</sup> Global Positioning System Fact Sheet, *supra* note 4.

<sup>14</sup> Global Positioning System, <http://www.gps.gov/> (last visited Apr. 16, 2009).

<sup>15</sup> *See, e.g.* Specifications for Endura Sierra, <http://www.lowrance.com/en/Products/Outdoors/Endura-Sierra/Specifications/> (last visited Apr. 16, 2009) (detailing a 2.4 inches wide, 5.1 inches high, and 1.2 inches deep handheld GPS receiver); CNET, Garmin Nuvi 880 Specifications, [http://reviews.cnet.com/car-gps-navigation/garmin-nuvi-880/4507-3430\\_7-32815498.html](http://reviews.cnet.com/car-gps-navigation/garmin-nuvi-880/4507-3430_7-32815498.html) (last visited Apr. 16, 2009) (detailing a 4.9 inches wide, 3.1 inches high, and 0.7 inches deep automobile-based GPS receiver).

<sup>16</sup> *Id.*

The sale of GPS receivers has grown exponentially since 2006, and now comprises millions of units sold per quarter by the top three manufacturers – Garmin, TomTom and Magellan.<sup>17</sup> Many automobiles are purchased with GPS receivers pre-installed.<sup>18</sup> GPS receivers display location data derived from the satellite network, but do not typically transmit the information to a remote location. The devices generally do not store data regarding their long-term historical movements.

**C. Law Enforcement Uses GPS Tracking Systems to Conduct Warrantless Surveillance**

Law enforcement agencies nationwide, including the Massachusetts State Police, use "GPS tracking systems" to conduct surveillance on individuals.<sup>19</sup> Typically, law enforcement agents covertly install GPS units in vehicles used by suspects. GPS tracking

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<sup>17</sup> Canalys, *US PND market doubles in Q2*, Aug. 14, 2008, available at <http://www.canalys.com/pr/2008/r2008081.htm>; see also Suzanne Choney, *GPS manufacturers tout software features*, MSNBC, Sept. 17, 2008, available at <http://today.msnbc.msn.com/id/26747443/#storyContinued>.

<sup>18</sup> See, e.g. Ford Motor Company, *Ford Expands Availability of Next-Generation Navigation to More Than a Dozen 2009 Products*, <http://www.ford.com/about-ford/news-announcements/press-releases/press-releases-detail/pr-ford-expands-availability-of-28982> (last visited Apr. 16, 2009); *OnStar-Equipped Vehicles*, [http://www.onstar.com/us\\_english/jsp/equip\\_vehicles/current\\_vehicles.jsp](http://www.onstar.com/us_english/jsp/equip_vehicles/current_vehicles.jsp) (last visited Apr. 16, 2009) (stating "OnStar is available on more than 50 GM vehicles").

<sup>19</sup> See Keith Hodges, *Tracking Bad Guys: Legal Considerations in Using GPS*, Federal Bureau of Investigation Law Enforcement Bulletin, July 2007, available at <http://www.fletc.gov/training/programs/legal-division/downloads-articles-and-faqs/articles/FBI-LE-Bulletin-GPS-Tracking-Jul2007.pdf/download>; see also R1:59.

systems are comprised of three distinct devices that, when combined, allow for the continuous monitoring of a tracked vehicle from a remote computer.<sup>20</sup> Proper installation and use enables law enforcement agents to monitor a suspect's movements.<sup>21</sup>

The GPS tracking system's first component is a GPS receiver, described above.<sup>22</sup> This device decodes GPS satellite data and calculates the receiver's location and velocity. The receiver is connected to the GPS tracking system's second component, a cellular phone or other type of cellular radio transmitter that can transmit the GPS data to law enforcement.<sup>23</sup> This second component enables police to access GPS data from afar that would otherwise be fleetingly displayed on the GPS receiver and subsequently discarded. The transmitted GPS data is received and stored on the GPS tracking system's third component, a law enforcement computer.<sup>24</sup> These computers use mapping software that can display the location and velocity of the GPS receiver in real time, as well as store historical data concerning the receiver's past movements.<sup>25</sup> This

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<sup>20</sup> R1:59.

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*



data can be retained indefinitely on the computer's hard drive.<sup>26</sup>

Prior to the deployment of GPS tracking systems, law enforcement agents used visual surveillance to track suspects' vehicles. Police occasionally enhanced surveillance through the use of a "beeper."<sup>27</sup> A beeper device transmits a radio signal to a receiving unit that "beeps" more loudly as it is moved closer to the transmitter.<sup>28</sup> After surreptitious installation of a beeper in a suspect's car, agents could use a police car-mounted receiving unit to estimate their distance from the location of the beeper as well as its general direction.<sup>29</sup> The beeper thus aided the tracking or "tailing" of a suspect in a vehicle by providing rough information concerning an agent's distance and direction from a suspect vehicle that is nearby, but outside the range of visual surveillance.<sup>30</sup>

**D. GPS Systems Dramatically Expand the Ability of Law Enforcement to Track Vehicles**

GPS tracking systems collect and retain a vast amount of data regarding a suspect's movements, and are substantially more invasive than beeper

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<sup>26</sup> *Id.*

<sup>27</sup> *See, e.g. United States v. Knotts*, 460 U.S. 276 (1983); *United States v. Karo*, 468 U.S. 705, 710 (1984).

<sup>28</sup> *U.S. v. Knotts*, 460 U.S. at 277.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.* at 278.

technology. GPS tracking systems are not merely sophisticated beepers. Beepers augment visual surveillance, helping police to keep track of vehicles that briefly eludes their gaze. In contrast, GPS tracking systems are wholesale replacements for physical surveillance, both when visual observation is possible from a public roadway and when it is not. In addition, GPS tracking systems collect and retain far more data than beeper technology. A GPS tracking system ascertains and records an individual's precise location. A beeper only determines an individual's approximate location relative to pursuing officers. A GPS tracking system collects a receiver's precise velocity and altitude. A beeper does not detect velocity or altitude data. All information collected by a GPS tracking system can be stored on law enforcement computers for future use. Beeper data is ephemeral – it is heard by law enforcement agents in real time, and never stored.

GPS technology goes beyond merely enhancing the capabilities of law enforcement to track a suspect. GPS tracking systems transform the capability of the police and allow an officer to simultaneously monitor the activities and locations of many vehicles from a

remote computer, substituting for visual surveillance of a single vehicle. Further, data collected by GPS tracking systems can be stored indefinitely on law enforcement computers, and used to create historical logs of citizens' movements. By accessing stored data, law enforcement officers can effectively extend the duration of the original search. Unlike a beeper, which merely enhances human sensory ability in real time, GPS tracking systems allow officers to comb stored data to conduct new searches using a suspect's historical location data, as well as to aggregate data from a variety of sources, both public and private.

In the law enforcement context, the ability of GPS systems to track and store an individual's every move creates substantial privacy risks – precisely the sort of risks the Fourth Amendment aims to prevent. In the absence of explicit regulations, GPS tracking systems enable law enforcement officials to record and retain an individual's travel history indefinitely, even in circumstances where there is no predicate activity that would justify surveillance and for purposes unrelated to the original investigation. GPS tracking records can reveal a range of private activities to law enforcement – where and when one

works, shops, worships, socializes or volunteers. GPS tracking systems can monitor and retain data on every facet of an individual's existence.

The abuse of this technique has been established. Private citizens have misused GPS tracking capabilities to stalk ex-lovers or spouses.<sup>31</sup> Widespread, warrantless use of GPS tracking systems by law enforcement presents opportunities for similar misuse, particularly if there is no obligation to report publicly on this type of surveillance as there is, for example, with the federal Wiretap Act.<sup>32</sup> Application of the Fourth Amendment's warrant requirement to GPS tracking would ensure independent judicial oversight of GPS tracking systems, generate transparency and accountability, and mitigate the privacy risks inherent to this powerful surveillance technology.

## **II. Absent a Warrant Requirement, GPS Tracking Systems in the Law Enforcement Context Threaten to Enable Pervasive Mass Surveillance**

Widespread installation of GPS tracking systems increases the potential for pervasive mass

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<sup>31</sup> *E.g.*, Francie Grace, *Stalker Victims Should Check for GPS*, CBS News, Feb. 6, 2003, <http://www.cbsnews.com/stories/2003/02/06/tech/main539596.shtml>; Women's E News, *Hi-Tech Stalking Devices Extend Abusers' Reach*, Oct. 1, 2006, <http://www.womensenews.org/article.cfm/dyn/aid/2905/>.

<sup>32</sup> *See* 18 U.S.C. § 2519 (2009) ("Reports concerning intercepted, wire, oral, or electronic communications").

surveillance of the American public by law enforcement. In the present case, the Massachusetts State Police surreptitiously installed a GPS tracking system in Defendant Connolly's vehicle.<sup>33</sup> In this instance, the installation was time-consuming, costly, and presumably fraught with peril, as law enforcement agents sought to install the device without alerting Connolly to the surveillance. These factors – time, cost, and risk – impose practical limitations on law enforcement's ability to conduct GPS-based surveillance on hundreds, thousands, or millions of citizens.

However, these practical limitations will be reduced or eliminated when GPS tracking devices are installed in most vehicles pursuant to government and private sector mandates. Once GPS tracking systems are installed in most vehicles, covert access to a suspect's vehicle will no longer be a necessary predicate to GPS tracking. Instead, individuals' travel histories will be broadcast and stored as a matter of course. Ease of access to ubiquitous GPS tracking information enables pervasive mass surveillance of the American public by law enforcement. Such surveillance is inconsistent with

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<sup>33</sup> R1:59-61.

citizens' Constitutional right to privacy as well as the Fourth Amendment's protections "against unreasonable searches and seizures."<sup>34</sup> Therefore, it is critical that police access to GPS tracking be subject to a warrant requirement.

**A. Government-mandated GPS Tracking**

The future of routine surveillance of motor vehicles in the United States remains unclear. The federal government is tracking drivers in six states using GPS tracking systems designed to assess a mileage tax as an adjunct or replacement for federal gasoline tax revenue.<sup>35</sup> The program could be expanded nationwide.<sup>36</sup> Such expansion would effectively mandate the installation of GPS tracking devices in every car in America. Several states, including Massachusetts, are also considering the implementation of mileage tax schemes.<sup>37</sup> Mileage tax regimes typically hinge on

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<sup>34</sup> U.S. Const. amend. IV.

<sup>35</sup> Mileage-based Road User Charge Study FAQs, <http://www.roaduserstudy.org/faq.aspx> (last visited Apr. 16, 2009) (describing federal pilot program tracking vehicles in California, Idaho, Iowa, Maryland, North Carolina, and Texas).

<sup>36</sup> *Id.* (stating "[t]his system could one day replace the gas tax.").

<sup>37</sup> *See e.g.* Secretary James Aloisi, Massachusetts Executive Office of Transportation, *Exploring VMT*, Feb. 24, 2009, <http://transportation.blog.state.ma.us/blog/2009/02/exploring-vmt.html> (Massachusetts mileage tax proposal); U.S. Dep't of Transportation, Minnesota: Mileage-Based User Fee Regional Outreach Statewide, [http://ops.fhwa.dot.gov/tolling\\_pricing/value\\_pricing/projects/no\\_t\\_involving\\_tolls/autousecostsvariable/mn\\_mileagedbasedfee.htm](http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/projects/no_t_involving_tolls/autousecostsvariable/mn_mileagedbasedfee.htm) (last visited Apr. 16, 2009) (Minnesota mileage tax proposal);

mandatory installation of GPS tracking systems in citizens' vehicles. For example, Massachusetts Governor Deval Patrick's currently pending "Transportation and Economic Security Plan" proposes taxes based on "vehicle miles traveled," which would be calculated through mandatory GPS tracking.<sup>38</sup>

Government employers, including Massachusetts municipal governments, use GPS tracking systems to monitor their workers. The Massachusetts Highway Department requires independent snowplow contractors to carry GPS tracking units that seek to determine if workers are driving at an optimal speed for laying down road salt.<sup>39</sup> In 2006, IC Corporation, the nation's leading manufacturer of school buses, began installing GPS tracking units in its buses, including buses purchased and use by Massachusetts districts.<sup>40</sup> In

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Colorado Dep't. of Transportation, VMT Fee Option, [www.chcpf.state.co.us/governor/pdf/blueribbon-transportation/8-2007-Meeting/RevenueOption-VMT-08-07.pdf](http://www.chcpf.state.co.us/governor/pdf/blueribbon-transportation/8-2007-Meeting/RevenueOption-VMT-08-07.pdf) (last visited Apr. 16, 2009) (Colorado mileage tax proposal).

<sup>38</sup> *Id.*; Glenn Johnson, *Massachusetts may consider a mileage charge*, Associated Press, Feb. 17, 2009, available at <http://abcnews.go.com/Technology/wireStory?id=6894994>.

<sup>39</sup> See Nannette Green Kaminski and William Tran, The National Workrights Institute, *On Your Tracks: GPS Tracking in the Workplace* at 6, available at [http://www.workrights.org/issue\\_electronic/NWI\\_GPS\\_Report.pdf](http://www.workrights.org/issue_electronic/NWI_GPS_Report.pdf)

<sup>40</sup> Automotive World, *IC Corporation to offer GPS tracking in school buses*, Mar. 11, 2005, <http://www.automotiveworld.com/news/commercial-vehicles/ic-corporation-to-offer-gps-tracking-in-school-buses>; Adam Geller, *Bosses keep sharp eye on mobile workers via GPS*, Associated Press, Jan. 3, 2005, available at [http://www.usatoday.com/tech/news/2005-01-03-gps-supervision\\_x.htm](http://www.usatoday.com/tech/news/2005-01-03-gps-supervision_x.htm).

Wayne County, Michigan, salt trucks and pothole crews are equipped with GPS tracking units that broadcast the location and speed of trucks and snowplows.<sup>41</sup> Oakland, California maintains GPS tracking units on every road crew and each street-sweeping vehicle.<sup>42</sup> King County, Washington installed GPS tracking units on vehicles responsible for hauling waste between landfills and transfer stations.<sup>43</sup> Charleston, South Carolina and Aurora, Colorado use GPS tracking units to monitor city garbage trucks and street sweepers.<sup>44</sup> Authorities in Clinton Township, New Jersey surreptitiously placed GPS tracking units on police cruisers.<sup>45</sup> Police in Johnstown, New York use GPS tracking systems to keep an eye on the location of patrol cars.<sup>46</sup>

**B. Private Sector-mandated GPS Tracking**

Private employers have also been aggressive in mandating GPS tracking technologies. The United Parcel Service ("UPS") uses GPS tracking units to monitor all

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<sup>41</sup> Kaminski and Tran, *supra* note 38 at 8.

<sup>42</sup> Judy Muller, *Worker Whereabouts: California City Monitors Employees Via Satellite Technology*, ABC News, Feb. 21 2004, available at <http://abcnews.go.com/WNT/story?id=129219&page=1>.

<sup>43</sup> Kaminski and Tran, *supra* note 38 at 8.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* at 7-8.

<sup>46</sup> Jim McGuire, *GPS units keep tabs on Johnstown officers' whereabouts*, Schenectady Daily Gazette, Apr. 4, 2009, available at [http://www.dailygazette.com/news/2009/apr/04/0404\\_geepeeeses/](http://www.dailygazette.com/news/2009/apr/04/0404_geepeeeses/).



UPS trucks.<sup>47</sup> In 2001, Roadway Express, a long-haul trucking company, installed GPS devices on rigs operated by union drivers.<sup>48</sup> J.B. Hunt, one of the nation's largest trucking lines, also utilizes GPS tracking systems to monitor trucks.<sup>49</sup>

GPS devices are widely available and are becoming increasingly inexpensive.<sup>50</sup> Estimates predict that there will be over 560 million GPS handsets worldwide in 2012, an increase from the 175 million in existence as of 2007.<sup>51</sup> Many vehicles purchased for private use are now with GPS technology pre-installed.<sup>52</sup> Some cars are equipped with GPS tracking units. For example, millions of drivers subscribe to General Motors'

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<sup>47</sup> United Parcel Service, *UPS Drivers Receiving New Wireless Computers*, May 9, 2005, available at <http://www.pressroom.ups.com/mediakits/pressrelease/0,2300,4560,00.html>.

<sup>48</sup> Adam Gellar, *New uses of GPS boost productivity but rankle employees*, Associated Press, Jan. 1, 2005, available at [http://www.seattlepi.com/business/207150\\_trackingworkers10.html](http://www.seattlepi.com/business/207150_trackingworkers10.html).

<sup>49</sup> See J.B. Hunt- Delivery Services, <http://www.jbhunt.com/homedelivery/technology.html>. (last visited Apr. 16, 2009).

<sup>50</sup> See e.g., GPS World, *Business Outlook-GPS Purchases to Generate \$4.1 billion in 2007*, May 1, 2007, <http://cp.gpsworld.com/gpscp/Business+News+&+Outlook/Business-Outlook-mdash-GPS-Purchases-to-Generate-4/ArticleStandard/Article/detail/421378>.; RNCOS, *Declining Prices, Rising Demands Drive Global GPS Technology Market*, Jun 10, 2008, [http://www.rncos.com/Press\\_Releases/Declining-Prices-Rising-Demand-Driving-Global-GPS-Technology-Market.htm](http://www.rncos.com/Press_Releases/Declining-Prices-Rising-Demand-Driving-Global-GPS-Technology-Market.htm).

<sup>51</sup> David Meyer, *Boom predicted for GPS-enabled handsets*, CNET, Jan. 15, 2008, [http://news.cnet.com/Boom-predicted-for-GPS-enabled-handsets/2100-1039\\_3-6226211.html?tag=nw.3](http://news.cnet.com/Boom-predicted-for-GPS-enabled-handsets/2100-1039_3-6226211.html?tag=nw.3)

<sup>52</sup> See *supra* note 18.

OnStar service.<sup>53</sup> OnStar GPS devices operate much like the GPS tracking system used by in the present case; Onstar systems use a combination of GPS receivers and cellular technology to transmit location data to an OnStar call center.<sup>54</sup> Other factory-installed GPS devices are GPS receivers, and lack a cellular transmitter. These receivers can be easily converted for use as covert GPS tracking systems. Lightning GPS, the largest provider of GPS tracking technology to law enforcement, manufactures a GPS tracking system that is secretly built into a traditional navigation system.<sup>55</sup> The tracking system even includes two manuals, one for the driver, which omits mention of the tracking feature, and another for the person monitoring the driver's movements.<sup>56</sup>

Warrantless access to data obtained through these systems could lead to a culture of pervasive mass surveillance by law enforcement agents. Imposition of a warrant requirement by law enforcement for GPS

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<sup>53</sup> OnStar Technology, [http://www.onstar.com/us\\_english/jsp/explore/onstar\\_basics/technology.jsp](http://www.onstar.com/us_english/jsp/explore/onstar_basics/technology.jsp) (last visited April 16, 2009).

<sup>54</sup> *Id.*

<sup>55</sup> Lightning GPS, Dashboard Navigation System Doubles as Covert GPS Tracker: Lets Boss Sit in Passenger Seat, Apr. 2, 2009, <http://www.prweb.com/releases/2009/04/prweb2292264.htm> (last visited Apr. 16, 2009).

<sup>56</sup> Geller, *supra* note 47.

tracking would mitigate this threat by requiring independent judicial oversight of GPS tracking.

### **III. Police Must Obtain a Warrant Prior to Monitoring a GPS Tracking Unit on an Individual's Vehicle**

#### **A. GPS Tracking Constitutes a Search under the Fourth Amendment**

The United States Supreme Court recognized the substantial privacy risks posed by law enforcement use of surveillance technology, observing:

that the fantastic advances in the field of electronic communication constitute a great danger to the privacy of the individual; that indiscriminate use of such devices in law enforcement raises grave constitutional questions under the Fourth and Fifth Amendments, and that these considerations impose a heavier responsibility on this Court in its supervision of the fairness of procedures in the federal court system.<sup>57</sup>

Furthermore, "[w]hat [one] seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected."<sup>58</sup> The Fourth Amendment protects "people, not places."<sup>59</sup> In *Katz v. U.S.*, the Court embraced the notion that an individual had a reasonable expectation of privacy within the glass walls of a phone booth, holding that "[what] he sought to exclude ... was not the intruding eye - it was the

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<sup>57</sup> *Lopez v. United States*, 373 U.S. 427, 441 (1963) (Warren, J. concurring).

<sup>58</sup> *Katz v. United States*, 389 U.S. 347, 351 (1967) (Harlan, J. concurring).

<sup>59</sup> *Id.*

uninvited ear."<sup>60</sup> Likewise, cars traveling on the public roads may not shield occupants from visual observation, but drivers have a reasonable expectation of privacy that their travel activities would not be recorded absent their choice to record such activity or where they are the target of an investigation, based on a legal standard and a predicate act. In addition, warrantless GPS tracking would not automatically withstand Constitutional scrutiny even if police could deduce the information through visual observation.<sup>61</sup>

The United States Supreme Court has not directly addressed whether warrantless GPS tracking constitutes a search under the Fourth Amendment, or whether citizens have a reasonable expectation of privacy concerning GPS tracking.<sup>62</sup> However, the Court ruled that visual surveillance aided by beeper technology is not a Fourth Amendment search, and does not require a warrant.<sup>63</sup> In *U.S. v. Knotts*, the Court held that a person has "has a lesser expectation of privacy in a

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<sup>60</sup> *Id.* at 352.

<sup>61</sup> *Kyllo v. United States*, 533 U.S. 27 (2001), 35 n.2 (stating "the fact that equivalent information could sometimes be obtained by other means does not make lawful the use of means that violate the Fourth Amendment.").

<sup>62</sup> *United States v. Berry*, 300 F. Supp. 2d 366, 368 (D. Md. 2004), (noting that "the Supreme Court's analysis may or may not cover more sophisticated GPS tracking technology, which, unlike a beeper, is a substitute for police surveillance.").

<sup>63</sup> *U.S. v. Knotts*, 460 U.S. at 279.

motor vehicle" and "a principal rationale for allowing warrantless tracking of beepers, particularly beepers in or on an auto, is that beepers are merely a more effective means of observing what is already public."<sup>64</sup> As set forth above, GPS tracking systems collect and retain vast amounts of data, including precise location, velocity, altitude, and historical information, that cannot be discerned through mere visual observation, and is therefore not "already public." *Knotts* dismissed the defendant's allegation that beepers enable "twenty-four hour surveillance of any citizen of this country ... without judicial knowledge or supervision."<sup>65</sup> The Court observed that, circa 1983, "the reality hardly suggests abuse."<sup>66</sup> However, *Knotts* cautioned that this holding was largely based on the limitations of available beeper technology, and warned, "if such dragnet-type law enforcement practices ... should eventually occur, there will be time enough then to determine whether different constitutional principles may be applicable."<sup>67</sup> In *U.S. v. Garcia*, the Seventh Circuit, following *Knotts*, reiterated this warning, stating

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<sup>64</sup> *Id.* at 281.

<sup>65</sup> *Id.* at 283.

<sup>66</sup> *Id.*

<sup>67</sup> *Id.* at 284.

"new technologies [including GPS tracking] enable, as the old (because of expense) do not, wholesale surveillance."<sup>68</sup> The court warned

One can imagine the police affixing GPS tracking devices to thousands of cars at random, recovering the devices, and using digital search techniques to identify suspicious driving patterns. One can even imagine a law requiring all new cars to come equipped with the device so that the government can keep track of all vehicular movement in the United States. It would be premature to rule that such a program of mass surveillance could not possibly raise a question under the Fourth Amendment -- that it could not be a search because it would merely be an efficient alternative to hiring another 10 million police officers to tail every vehicle on the nation's roads.<sup>69</sup>

As set forth above, GPS tracking systems enable precisely the sort of "dragnet-type law enforcement practices" and "wholesale surveillance" foreshadowed in *Knotts* and *Garcia*. This Court should protect Americans' Constitutional rights and require a warrant for GPS tracking in the law enforcement context.

***B. GPS Tracking Constitutes a Search under Article 14 of the Massachusetts Declaration of Rights***

The United States Supreme Court has not yet ruled on the Constitutionality of warrantless GPS tracking. The Supreme Judicial Court is not bound by the

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<sup>68</sup> *United States v. Garcia*, 474 F.3d 994, 998 (7th Cir. 2007).

<sup>69</sup> *Id.*

precedent of lower federal courts regarding an issue of law on which the Supreme Court is silent.<sup>70</sup>

"The Constitution of the Commonwealth preceded and is independent of the Constitution of the United States."<sup>71</sup> In fact, this Court has held, in a wide range of cases, that Article 14 of the Massachusetts Declaration of Rights bestows greater substantive protections to citizens than the U.S. Constitution's Fourth Amendment.<sup>72</sup> In numerous cases, this Court found that Article 14 provides more expansive protection than the Fourth Amendment to individuals traveling on a public roads.<sup>73</sup> In *Commonwealth v. Gonsalves*, this Court observed, "[w]e have expressly granted other protections to drivers and occupants of motor vehicles under art. 14 in a variety of areas, and we have done so to guarantee protections that, in some cases, may not be recognized under the Fourth Amendment."<sup>74</sup>

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<sup>70</sup> *Commonwealth v. Murphy*, 862 N.E.2d 30, 39 (Mass. 2007).

<sup>71</sup> *Commonwealth v. Upton*, 476 N.E.2d 548, 555 (Mass. 1985).

<sup>72</sup> See *Commonwealth v. Blood*, 507 N.E.2d 1029, 1033 (Mass. 1987); see also *Commonwealth v. Gonsalves*, 711 N.E.2d 108 (Mass. 1999).

<sup>73</sup> *Gonsalves*, 711 N.E.2d at 111-112.

<sup>74</sup> *Id.* at 111; compare *Gonsalves*, 711 N.E.2d at 111-112 (holding that "art. 14 requires that a police officer, in a routine traffic stop, must have a reasonable belief that the officer's safety, or the safety of others, is in danger before ordering a driver out of a motor vehicle.") with *Pennsylvania v. Mimms*, 434 U.S. 106, 111 (1977) (holding that the Fourth Amendment permits a police officer to, as matter of course, order a driver out of a vehicle during a routine traffic stop.); compare *Commonwealth v. Torres*, 674 N.E.2d 638, 642 (Mass. 1997) (holding that the Massachusetts Constitution requires that a lawfully seized person be told by the police that he is "free to go" before the person's

When a court determines whether an action constitutes a search and seizure within the meaning of Article 14, it must decide "whether the defendant[']s expectation of privacy [in the circumstances] is one which society could recognize as reasonable."<sup>75</sup> This Court defines privacy as "the claim of individuals, groups, or institutions to determine for themselves when, how and to what extent information about them is communicated to others."<sup>76</sup> A reasonable expectation of privacy allows individuals to determine what information, if any, will be transmitted about their movements and activities by GPS tracking. It is particularly important to recognize this reasonable expectation in the face of technology that can track a citizen's every movement and activity, no matter how intimate.

Other state constitutions protect individuals from warrantless GPS tracking. The Supreme Court of Washington held that GPS tracking units do not merely enhance an officer's senses, but substitute for them.<sup>77</sup>

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consent to search will be recognized as voluntary.) *with Ohio v. Robinette*, 117 S. Ct. 417 (1996) (holding that the U.S. Constitution does not require police to notify a lawfully seized person that he is "free to go" before a consent-based search will be upheld.).

<sup>75</sup> *Commonwealth v. Podgurski*, 386 Mass. 385, 388 (1982)

<sup>76</sup> *Blood*, 507 N.E. 2d at 1033 (quoting *Holmes v. Burr*, 486 F.2d 55, 67 (9th Cir.) (Hufstedler, J., dissenting)).

<sup>77</sup> *State v. Jackson*, 76 P. 3d 217, 223 (Wash. 2003).



Noting that GPS tracking systems intrude into private affairs, the court ruled that a warrant must be obtained prior to conducting GPS monitoring.<sup>78</sup> The court specifically noted that GPS devices can reveal:

. . . a detailed record of travel to doctors' offices, banks, gambling casinos, tanning salons, places of worship, political party meetings, bars, grocery stores, exercise gyms, places where children are dropped off for school, play, or day care, the upper scale restaurant and the fast food restaurant, the strip club, the opera, the baseball game, the 'wrong' side of town, the family planning clinic, and the labor rally.<sup>79</sup>

The relative precision of beeper and GPS technologies clearly differ in this respect. The Supreme Court of Oregon held that the warrantless attachment of a radio transmitter to a suspect's car violates the Oregon State Constitution's protection from unreasonable searches.<sup>80</sup> The court distinguished searches conducted via radio transmitter use from other searches conducted while a defendant was in public space by noting that the radio transmitter permitted police to detect and locate the defendant from anywhere its signal could be received.<sup>81</sup> The court ruled that "any device that enables the police quickly to locate a

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<sup>78</sup> See *id.*

<sup>79</sup> *Id.*

<sup>80</sup> *State v. Campbell*, 759 P.2d 1040 (Or. 1988).

<sup>81</sup> *Id.* at 1045.

person or object anywhere within a 40 mile radius, day or night, over a period of several days, is a significant limitation on freedom from scrutiny."<sup>82</sup>

The United States Supreme Court recognizes that privacy protections must keep pace with advances in surveillance technology. In *Arizona v. Evans*, Justice O'Connor acknowledged that "the police, of course, are entitled to enjoy the substantial advantages [that] technology confers."<sup>83</sup> But *Evans* warns, "they may not, however, rely on it blindly. With the benefits of more efficient law enforcement mechanisms comes the burden of corresponding constitutional responsibilities."<sup>84</sup>

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<sup>82</sup> *Id.* at 1048.

<sup>83</sup> *Arizona v. Evans*, 514 U.S. 1 (1995) (O'Connor, J. concurring).

<sup>84</sup> *Id.*

## CONCLUSION

*Amicus Curiae* respectfully request this Court to grant Appellant's motion to reverse the decision of the lower court.

Respectfully submitted,

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<sup>85</sup> EPIC Clerks Nicholas Janney and Trent Taylor assisted in the preparation of this brief. EPIC is grateful for their contributions.

## **MASS. R. A. P. 16(K) CERTIFICATION**

I hereby certify that the above brief complies with the rules of court that pertain to the filing of briefs, including, but not limited to: Mass. R. A. P. 16(a)(6); Mass. R. A. P. 16(e); Mass. R. A. P. 16(f); Mass. R. A. P. 16(h); Mass. R. A. P. 18; and Mass. R. A. P. 20.

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## **CERTIFICATE OF SERVICE**

I hereby certify that I filed with the Court one original and seventeen copies of the above brief. On April 17, 2009, I transmitted two copies to counsel for each parties *via* U.S. Mail, postage pre-paid.

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