

## WHAT CONSTITUTES A REASONABLE SEARCH? SMART METER IMPLEMENTATION IN NAPERVILLE

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### I. INTRODUCTION

Smart meters and related data-use initiatives have exploded in popularity within the U.S. utility sector, attracting a throng of legal challenges.<sup>1</sup> A recent decision by the United States Court of Appeals for the Seventh Circuit addresses one set of those challenges—issues arising under the Fourth Amendment of the U.S. Constitution—and defines new boundaries for entities instituting smart meter programs in the context of traditional search and seizure jurisprudence.

In the August 2018 decision of *Naperville Smart Meter Awareness v. City of Naperville (Naperville)*,<sup>2</sup> the Seventh Circuit upheld a lower court decision dismissing an amended complaint by Naperville Smart Meter Awareness (NSMA), a

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1. See generally *Nearly half of all U.S. electricity customers have smart meters*, EIA.GOV (Dec. 6, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=34012>.

2. *Naperville Smart Meter Awareness v. City of Naperville*, 900 F.3d 521 (7th Cir. 2018).

group of customers opposed to smart meter installation.<sup>3</sup> The Seventh Circuit determined that under the facts pleaded,<sup>4</sup> the City of Naperville, Illinois' collection of municipal electric customers' smart meter data at 15-minute intervals was a reasonable, acceptable search, and thus, could not infringe on the organization's rights under the Fourth Amendment of the U.S. Constitution.<sup>5</sup> The court also emphasized that if the City of Naperville had provided a "genuine" opt-out alternative to smart meters then "Naperville could have avoided this controversy."<sup>6</sup>

The ruling in *Naperville* further develops the view of what is a reasonable search in the context of the Fourth Amendment as technology such as smart meters becomes more sophisticated and pervasive in the utility industry and beyond.<sup>7</sup>

This case note will first discuss relevant background describing smart meters and policy forces aiding their expansion, as well as provide brief context to concerns presented by utility consumers with respect to smart meters. Additionally, as background, this note will provide a brief discussion of relevant Fourth Amendment cases. Next, this note discusses the factual and procedural background of the *Naperville* case, presents the court's reasoning, and also discusses potential implications the ruling might have within, and outside of, the utility industry.

## II. BACKGROUND

### A. Development of Smart Meter Programs and Rising Public Concerns

At the center of the *Naperville* decision is the smart meter, which has been a relatively new source of investment and a technological breakthrough for both utilities and consumers.<sup>8</sup> However, smart meters have also raised concerns with energy consumers.<sup>9</sup>

The smart meter is one component of capital investment under the broader category of what is known as Advanced Metering Infrastructure (AMI).<sup>10</sup> AMI is

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3. *Id.* at 521.

4. *Naperville* is a decision on appeal of a decision denying a motion to amend a pleading, and thus, does not represent factual findings at trial. The U.S. District Court for the Northern District of Illinois, as affirmed in *Naperville*, was required to apply a dismissal standard pursuant to Fed. R. Civ. P. 12(b)(6), and accordingly, to construe the pleadings in the most favorable light of the plaintiff. *Naperville Smart Meter Awareness v. City of Naperville*, 114 F. Supp. 3d 606, 611 (N.D. Ill. 2015), as described further in Part III, *infra*.

5. *Naperville*, 900 F.3d at 529; *Home*, NAPERVILLE SMART METER AWARENESS, <http://www.naperillesmartmeterawareness.org/index.html> (last visited Aug. 21, 2019).

6. *Naperville*, 900 F.3d at 529. Under the facts as accepted by the Seventh Circuit, the city only had provided a "non-wireless" smart meter alternative, which collects equally rich data except the data has to be manually retrieved. *Id.* at 529, n.1. See also NAPERVILLE, HOW TO READ YOUR ELECTRIC METER, <https://www.naperville.il.us/services/electric-utility/your-electric-service/how-to-read-your-electric-meter/>.

7. See generally *Naperville*, 900 F.3d at 529.

8. *Id.*

9. K.T. Weaver, *Comprehensive Report: How Smart Meters Invade Privacy*, TAKE BACK YOUR POWER (Aug. 29, 2014), <https://takebackyourpower.net/comprehensive-report-how-smart-meters-invade-privacy/>.

10. SMART GRID, U.S. DEPARTMENT OF ENERGY'S APPROACH FOR CONDUCTING CONSUMER BEHAVIOR STUDIES WITHIN THE SMART GRID INVESTMENT GRANT PROGRAM, [https://www.smart-grid.gov/files/CBS\\_White\\_Paper\\_draft\\_to\\_NREL\\_10\\_11\\_2011.pdf](https://www.smart-grid.gov/files/CBS_White_Paper_draft_to_NREL_10_11_2011.pdf).

“a system of smart meters, two-way communications networks, and data management systems.”<sup>11</sup> These are technologies that together facilitate metering and other informational interactions between utilities and their consumers.<sup>12</sup> Additionally, “[t]his two-way information exchange enables a range of new customer service applications, such as time-based rate programs, demand response programs, and web portals with near-real-time customer energy usage information.”<sup>13</sup> Due to the increased information accessible to customers through so-called “green button” and other similar initiatives, AMI allows consumers to change their use patterns, which ultimately impacts their electricity bills.<sup>14</sup>

Beyond the benefits to rate base of new capital investment, utilities have sought to add smart meters to their systems for a variety of additional benefits including operational and reliability improvements, reduced labor costs, load smoothing, and energy efficiency initiatives to name only a few.<sup>15</sup> Third-party energy providers also have been able to develop new offerings through the use of smart meter data.<sup>16</sup>

From the utility perspective, AMI resolves some key long-standing hurdles in terms of customer pricing.<sup>17</sup> Since the late 1800s, there has been debate over how to properly charge customers for electricity consumption.<sup>18</sup> Although time-based pricing schemes had theoretical bases early on (it was evident even in the 19<sup>th</sup> century that electricity usage fluctuated regularly over the course of the day), cost-effective technology was not yet in existence to allow for detailed electricity consumption.<sup>19</sup> By the 1970s, energy shortages revived studies of adopting broader time-based rate programs.<sup>20</sup> However, not until the mid-2000s did AMI develop as a means of achieving previously untapped pricing capabilities.<sup>21</sup>

Recent federal programs provided a material boost to the adoption of AMI.<sup>22</sup> The Smart Grid Investment Grant Program (SGIG) was designed to accelerate and modernize the nation’s electric transmission and delivery systems.<sup>23</sup> Congress authorized the SGIG in Section 1306 of the Energy Independence and Security Act

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11. SMART GRID, SMART GRID INVESTMENT GRANT PROGRAM, [https://www.smartgrid.gov/recovery\\_act/overview/smart\\_grid\\_investment\\_grant\\_program.html](https://www.smartgrid.gov/recovery_act/overview/smart_grid_investment_grant_program.html).

12. U.S. DEPARTMENT OF ENERGY’S APPROACH FOR CONDUCTING CONSUMER BEHAVIOR STUDIES WITHIN THE SMART GRID INVESTMENT GRANT PROGRAM, *supra* note 10.

13. SMART GRID INVESTMENT GRANT PROGRAM, *supra* note 11.

14. U.S. DEPARTMENT OF ENERGY’S APPROACH FOR CONDUCTING CONSUMER BEHAVIOR STUDIES WITHIN THE SMART GRID INVESTMENT GRANT PROGRAM, *supra* note 10.

15. *Id.*

16. *Id.*

17. *Id.*

18. *Id.*

19. U.S. DEPARTMENT OF ENERGY’S APPROACH FOR CONDUCTING CONSUMER BEHAVIOR STUDIES WITHIN THE SMART GRID INVESTMENT GRANT PROGRAM, *supra* note 10.

20. *Id.*

21. *Id.*

22. SMART GRID INVESTMENT GRANT PROGRAM, *supra* note 11.

23. *Id.*

(EISA) of 2007.<sup>24</sup> SGIG selected electricity providers across the nation for electric system upgrades.<sup>25</sup> As a result, 99 providers, including the City of Naperville (which received \$11 million under the program), received federally matched funds for up to half of their project costs.<sup>26</sup> Overall, including industry expenditures, the SGIG program represented an investment of about \$8 billion in U.S. electricity delivery systems.<sup>27</sup>

Beyond the SGIG, as part of the American Recovery and Reinvestment Act of 2009 (ARRA), Congress authorized \$787 billion in economy wide expenditures,<sup>28</sup> which later increased to \$831 billion.<sup>29</sup> ARRA included a component designed to increase alternative energy production (AEP),<sup>30</sup> which focused on modernizing the electrical grid.<sup>31</sup>

Consumers voiced a number of concerns along with adoption of AMI.<sup>32</sup> For instance, some consumers feared that smart meters might provide “[n]ear real-time surveillance,” and are arguably eavesdropping devices collecting data on a home’s routines or activities.<sup>33</sup> In addition, some have expressed concerns that smart meters are able to determine sleeping and eating routines; what appliances are in use and when; and how many residents are in the home and when.<sup>34</sup> Other fears include AMI as potentially enabling criminal activity against, or embarrassment of, energy consumers.<sup>35</sup>

#### B. *Unreasonable Searches in Case Law*

Since the *Naperville* decision turns largely on Fourth Amendment jurisprudence, a brief discussion of relevant cases may be helpful. The Fourth Amendment of the U.S. Constitution protects people’s rights “to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures.”<sup>36</sup> Prior to the 1967 decision in *Katz v. United States*, the Supreme Court generally limited Fourth Amendment search and seizure inquiries to cases involving tangible objects.<sup>37</sup>

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24. *Id.*

25. *Id.*

26. *Id.*; *Naperville*, 900 F.3d at 524.

27. SMART GRID INVESTMENT GRANT PROGRAM, *supra* note 11.

28. Kimberly Amadeo, *ARRA, Its Details, With Pros and Cons*, THE BALANCE, <https://www.the-balance.com/arra-details-3306299> (last updated July 30, 2019).

29. *Id.*

30. *Id.*; 123 Stat. 192 (2009).

31. *Naperville*, 900 F.3d at 524.

32. Weaver, *Comprehensive Report: How Smart Meters Invade Privacy*, *supra* note 9.

33. *Id.*

34. *Id.* Consumers also have raised concerns that smart meters present health risks; however, those issues were not addressed in the instant case. *Id.*

35. *Id.*

36. U.S. CONST. amend. IV.

37. Sonia K. McNeil, Note, *Privacy and the Modern Grid*, 25 HARV. J. L. & TECH. 199, 207 (2011); see also *Olmstead v. U.S.*, 277 U.S. 438, 465 (1923) (emphasizing that even though two officers trespassed onto

However, in *Katz* the Supreme Court reviewed a question of whether federal investigators were required under the Fourth Amendment to obtain a warrant prior to placing a listening device on a public telephone booth.<sup>38</sup> Although the government argued that public phone booths were not a “constitutionally protected area,” the court rejected that formulation, and declared the “Fourth Amendment protects people, not places.”<sup>39</sup> In his concurring opinion in *Katz*, Justice Harlan stated two requirements to this Fourth Amendment protection: “first that a person have exhibited an actual (subjective) expectation of privacy and second, that the expectation be one that society is prepared to recognize as ‘reasonable.’”<sup>40</sup> This two-part test continues to guide Fourth Amendment inquiries, although rapidly advancing technology has created some confusion over what is a “reasonable” expectation of privacy.<sup>41</sup> Nevertheless, the home has generally remained “the realm of guaranteed privacy.”<sup>42</sup> In order to enter a home, courts have usually required probable cause and the need for law enforcement to obtain a warrant beforehand.<sup>43</sup>

Thirty-four years after *Katz*, the Supreme Court addressed the Fourth Amendment implications of even more advanced technology used to gain information from within the home, but without physical entry. In *Kyllo v. United States*,<sup>44</sup> an agent with the United States Department of the Interior suspected that Danny Kyllo was growing marijuana in his home.<sup>45</sup> To determine if Kyllo was in fact growing marijuana at his residence, the agent used a thermal imager to view and scan the home.<sup>46</sup> The imager operated like a video camera, converting radiation into moving images based on comparative warmth.<sup>47</sup> The images revealed temperatures in the home that were consistent with the existence of halide lights, that are frequently used to grow marijuana.<sup>48</sup>

According to the Court, “pointing the thermal imager at Kyllo’s house was, for Fourth Amendment purposes, equivalent to entering [the home].”<sup>49</sup> The Court held that the use of the thermal imager was an unlawful search, and stated that “[w]here, as here, the Government uses a device that is not in general public use, to explore details of the home that would previously have been unknowable without physical intrusion, the surveillance is a ‘search’ and is presumptively unreasonable without a warrant.”<sup>50</sup>

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defendant’s land, “there was no search of person, house, papers, or effects”); and *see Katz v. U.S.*, 389 U.S. 347, 352 (1967).

38. McNeil, *supra* note 37, at 207; *see also Katz*, 389 U.S. at 352.

39. McNeil, *supra* note 37, at 207; *Katz*, 389 U.S. at 351.

40. McNeil, *supra* note 37, at 207; *Katz*, 389 U.S. at 361 (Harlan, J., concurring).

41. McNeil, *supra* note 37, at 209.

42. *Id.*

43. *Id.*

44. *Kyllo v. U.S.*, 533 U.S. 27, 29 (2001).

45. *Id.*; McNeil, *supra* note 37, at 209.

46. *Kyllo*, 533 U.S. at 29; McNeil, *supra* note 37, at 209-10.

47. *Kyllo*, 533 U.S. at 29-30; McNeil, *supra* note 37, at 209-10.

48. McNeil, *supra* note 37, at 209-10; *Kyllo*, 533 U.S. at 29.

49. McNeil, *supra* note 37, at 210.

50. *Kyllo*, 533 U.S. at 40.

## III. ANALYSIS

A. *Factual and Procedural History*

The City of Naperville owns and operates the public utility that delivers electricity to its residents.<sup>51</sup> The Naperville city council executed an agreement with the U.S. Department of Energy in April 2010 for smart grid funding.<sup>52</sup> In 2011, the city moved to formalize certain protections of usage data, and provided for the non-wireless meter alternative, in which the meters collected the same data, but the data was not transmitted wirelessly to the utility throughout the day.<sup>53</sup> The City of Naperville did not give the residents other metering options, and therefore, if the residents wanted electricity they were required to use the smart-meter program.<sup>54</sup> Under the City of Naperville's program, the smart meters "collect [the] residents' energy-usage data at fifteen-minute intervals," which the city stores for up to three years.<sup>55</sup> By November 2011, NSMA had filed a petition for an election ballot initiative to stop the smart grid program in Naperville.<sup>56</sup>

According to the facts accepted by the court for purposes of deciding dismissal, NSMA is an Illinois non-profit corporation that has set out to inform citizens about smart meters while "fighting for informed consent" for their use in people's homes.<sup>57</sup> The City of Naperville's public utilities department started replacing the customers' analog electricity meters with smart meters in January 2012.<sup>58</sup> Although NSMA's election ballot effort failed, NSMA also sought relief through a lawsuit filed in 2013 pursuant to 42 U.S.C. section 1983.<sup>59</sup>

The U.S. District Court for the Northern District of Illinois had ruled on two of NSMA's amended section 1983 complaints against the City of Naperville when, in 2015, members of NSMA filed for leave to file its third amended complaint.<sup>60</sup> NSMA alleged the city's collection of energy-consumption data in 15-minute intervals from the smart meters constituted an unreasonable search under the Fourth

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51. *Naperville*, 900 F.3d at 523. Because the decision only addresses a municipally owned utility, it does not explore what effects would result in the context of an investor-owned utility program. *Id.*

52. *Naperville Smart Meter Awareness v. City of Naperville*, No. 11-C-9299, 2013 U.S. Dist. LEXIS 40432, at \*1, \*4 (N.D. Ill. Mar. 22, 2013).

53. *Id.* at \*6-\*7.

54. *Id.*

55. *Naperville*, 900 F.3d at 524.

56. *Naperville*, 2013 U.S. Dist. LEXIS 40432, at \*7-\*8.

57. *Who We Are*, NAPERVILLE SMART METER AWARENESS, <http://www.napervillesmartmeterawareness.org/WhoWeAre.html> (last visited Aug. 21, 2019).

58. *Naperville*, 2013 U.S. Dist. LEXIS 40432, at \*8-\*9.

59. *Id.* at \*1. 42 U.S.C. section 1983 provides a general avenue of civil relief against "[e]very person who, under color of any statute, ordinance, regulation, custom or usage, of any State or Territory or the District of Columbia" subjects a person under the jurisdiction of the United States to the "deprivation of any rights, privileges, or immunities secured by the Constitution and laws." 42 U.S.C. § 1983 (2019).

60. *Naperville*, 114 F. Supp. 3d at 608.

Amendment.<sup>61</sup> Additionally, NSMA alleged this data collection was an unreasonable search and an invasion of privacy under the Illinois Constitution.<sup>62</sup>

NSMA's concern with the implementation of smart meters was directed toward the fact that smart meters have the capability of collecting data measurements in frequent and discrete increments, and the data would then be placed in government hands.<sup>63</sup> NSMA argued that this capability presented privacy risks not associated with the analog meters previously used.<sup>64</sup> Specifically, NSMA was concerned that smart meters are capable of revealing intimate details about people's "personal lives and living habits" through invasive data collection.<sup>65</sup>

The Northern District of Illinois denied in part NSMA's motion for leave to file the third amended complaint.<sup>66</sup> Namely, the district court denied NSMA leave to amend its Fourth Amendment and related Illinois constitutional claims on grounds that the amendment would be futile because they did not allege plausible claims for relief.<sup>67</sup>

To address the procedural issue on appeal, the Seventh Circuit Court of Appeals was presented with two questions: (1) whether NSMA's claims regarding the smart-meter data collections at 15-minute intervals amounted to a plausible allegation of a search under the Fourth Amendment; and if so, (2) whether the data collection was a reasonable search.<sup>68</sup>

In summary, the Seventh Circuit held that although the data collection in 15-minute intervals was technically a search within the context of the Fourth Amendment, it was a lawful search because it was reasonable.<sup>69</sup> Upon reaching that conclusion, the court of appeals affirmed the district court's denial of NSMA's leave to amend its complaint.<sup>70</sup>

#### *B. How the Seventh Circuit Determined Whether the Naperville Smart Meter Program Violated the Fourth Amendment*

##### 1. Was the Smart Meter Data Collection a 'Search' Under the Fourth Amendment?

To address the first issue—whether smart meter data collection constituted a search—the Seventh Circuit first analyzed the facts in the context of the *Kyllo* decision, in which law enforcement used a thermal imager to scan the defendant's

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61. *Id.* at 610.

62. *Id.*

63. *Id.* at 608.

64. *Id.* at 609.

65. *Naperville*, 114 F. Supp. 3d at 609.

66. *Id.* at 612.

67. *Id.* at 613-14.

68. *Naperville*, 900 F.3d at 525.

69. *Id.* at 529.

70. *Id.*

home during a drug investigation.<sup>71</sup> In examining *Kyllo*, the Seventh Circuit emphasized that the data collected by the City of Naperville's public utilities could actually prove more intrusive than using a thermal imager to locate the use of "grow lights" to determine if marijuana was being grown within the home.<sup>72</sup> In reality, the court found that smart meters provide a more effective means of detecting the presence of grow lights in a home than the use of a thermal imager.<sup>73</sup> The court acknowledged that under *Kyllo*, extremely invasive technology is able to dodge the requirement of a warrant if it is used by the general public, as opposed to law enforcement, suggesting that the use of such technology is not a search.<sup>74</sup> However, smart meters are part of a highly specialized industry, and thus, the court found that when the data is collected in intervals revealing specific details about the home otherwise unavailable in a physical search to government officials, a search *has* occurred.<sup>75</sup>

The Seventh Circuit considered, but rejected, an argument that the search was constitutional on grounds of the so-called third party doctrine.<sup>76</sup> The Seventh Circuit, citing the recent decision in *Carpenter v. United States*,<sup>77</sup> stated that while the third-party doctrine turned on whether parties knowingly shared with third parties otherwise private information, Naperville customers did not share their information with any third parties, and their forced participation in the smart meter program was not voluntary.<sup>78</sup>

## 2. Was the Search Conducted Through Naperville's Smart Meter Program Reasonable?

### a. Naperville's Program Exhibited a Lack of Prosecutorial Intent

Turning to the second Fourth Amendment issue—whether the search was reasonable—the Seventh Circuit first determined that because the smart meter search was not part of a criminal investigation, it only needed to address the reasonableness of the search, which it did by "balancing its intrusion on the individual's Fourth Amendment interests against its promotion of legitimate government interests."<sup>79</sup>

On the one hand, the Seventh Circuit evaluated NSMA's privacy interest: "[r]esidents certainly have a privacy interest in their energy consumption data,"

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71. *Kyllo*, 533 U.S. at 27.

72. *Naperville*, 900 F.3d at 526.

73. *Id.*

74. *Id.* at 526-27; *Kyllo*, 533 U.S. at 40.

75. *Naperville*, 900 F.3d at 527 (emphasis added).

76. *Id.*

77. *Carpenter v. U.S.*, 138 S. Ct. 2206 (2018).

78. *Naperville*, 900 F.3d at 527.

79. *Id.* at 528 (citing *Riley v. California*, 573 U.S. 373 (2014) and *Hiibel v. Sixth Jud. Dist. Ct.*, 542 U.S. 177, 187-188 (2004)). As noted in *Riley*, the Supreme Court has found that "[w]here a search is undertaken by law enforcement officials to discover evidence of criminal wrongdoing, . . . reasonableness generally requires the obtaining of a judicial warrant." 573 U.S. at 382.

the court stated.<sup>80</sup> However, citing *Camara v. Municipal Court*, the court noted that a lack of prosecutorial intent “lessens an individual’s privacy interest.”<sup>81</sup> The court then compared the circumstances before it to those in *Camara*, in which a tenant was cited with a criminal violation after refusing to allow a city housing inspector access to the premises he had rented.<sup>82</sup> The Seventh Circuit determined that unlike in *Camara*, there was no prosecutorial intent evident in the Naperville program, and only a “minimal” risk of “corollary prosecution.”<sup>83</sup> The court noted that only the city’s utilities employees were able to retrieve the data smart meters collect.<sup>84</sup> Furthermore, the court found that Naperville law enforcement did not have direct access to smart meter data without a warrant or court order.<sup>85</sup> Additionally, the City of Naperville’s smart meter program also revealed data without physical entry of the home, whereas *Camara* reviewed a threat of actual physical entry.<sup>86</sup> Provided those differences, the court found that “the privacy interest at stake here is yet more limited than that at issue in *Camara*.”<sup>87</sup>

b. Substantial Government Interest in Smart Meters Outweighs Naperville Smart Meter Awareness’ Privacy Concerns

After addressing NSMA’s privacy interest, the court analyzed the government’s data collection interest.<sup>88</sup> The court found substantial governmental interest in smart meter data and that its benefits outweigh a possible violation of constitutional rights<sup>89</sup> depending on how often the data is collected and who has access to the data.<sup>90</sup>

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80. *Naperville*, 900 F.3d at 528.

81. *Id.*; *Camara v. Mun. Ct.*, 387 U.S. 523, 530 (1967).

82. *Camara*, 387 U.S. at 525.

83. *See Naperville*, 900 F.3d at 528 (“To this court’s knowledge, using too much electricity is not yet a crime[.]”). However, *Naperville* did not squarely address the issue of energy theft, as the court does not appear to have been asked to opine upon the situation where smart meter data is used to analyze and prosecute illegitimate interception of energy delivery. Smart meter companies have marketed their data analytics in part to determine if energy theft is present. *See, e.g.*, Greg Myers, *Caught Red Handed: Using AMI to Address Power Theft Wherever it Occurs*, ELEC. LIGHT & POWER (Nov. 9, 2018), <https://www.elp.com/Electric-Light-Power-Newsletter/articles/2018/11/caught-red-handed-using-ami-to-address-power-theft-wherever-it-occurs.html>.

84. *Id.*

85. McNeil, *supra* note 37, at 210; *Naperville*, 900 F.3d at 528.

86. *Naperville*, 900 F.3d at 528; *Camara*, 387 U.S. at 530.

87. *Naperville*, 900 F.3d at 528.

88. *Id.*

89. Although NSMA raised a separate privacy claim under the Illinois Constitution, the Seventh Circuit did not provide a separate analysis. The Seventh Circuit reasoned that “the Illinois Supreme Court conducts reasonableness balancing for the invasion of privacy under the same framework as searches under the Fourth Amendment.” *Naperville*, 900 F.3d at 529, n.4. Thus, the Seventh Circuit found smart meter data collections would be considered a reasonable, lawful search under the Illinois Constitution as long as it was also considered so under the Fourth Amendment. *Id.*

90. *Id.* at 529.

The Seventh Circuit reasoned that the governmental interest in this case was triggered by the many benefits of smart meters.<sup>91</sup> The court determined these benefits ultimately outweigh privacy concerns associated with the data smart meters collect.<sup>92</sup> It identified that smart meters allow the electrical grid to modernize, providing quick restoration of service if power goes out because energy-consumption data is provided at regular intervals.<sup>93</sup> In addition, the court acknowledged that smart meters permit utility companies the ability to offer time-based pricing, which is “an innovation [that] reduces strain on the grid by encouraging consumers to shift usage away from peak demand periods.”<sup>94</sup> Further, the meters reduce labor costs of utilities’ workers as home visits are not needed as often.<sup>95</sup> Overall, smart meters reduce costs of utilities, “provide cheaper power to consumers, encourage energy efficiency, and increase [electrical] grid stability.”<sup>96</sup>

Provided those interests, and because access to the city’s smart meter data was limited only to employees within a public utility company, the court determined the search was reasonable “where the search is unrelated to law enforcement, is minimally invasive, and presents little risk of corollary criminal consequences.”<sup>97</sup> The Seventh Circuit, however, cautioned that a different conclusion could be reached if law enforcement or others outside of the utility were able to access the data.<sup>98</sup> The court concluded that substantial government interest outweighs NSMA’s privacy concerns:

Even when set to collect readings at fifteen-minute intervals, smart meters provide Naperville rich data. Accepting Smart Meter Awareness’s well-pled allegations as true, this collection constitutes a search. But because of the significant government interests in the [smart meter] program, and the diminished privacy interests at stake, the search is reasonable.<sup>99</sup>

### C. *The Future Impact of the Seventh Circuit’s Decision in Naperville*

The Seventh Circuit’s decision reflected an application of constitutional requirements against a question of what is the right balance between the advancement of technology and people’s constitutional rights within their homes.<sup>100</sup> As noted, if data were collected in shorter intervals, or if accessibility to the data were not so limited as to exclude law enforcement’s direct access as in *Naperville*, a

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91. *Id.* at 528.

92. *Id.* at 528-29.

93. *Id.*

94. *Naperville*, 900 F.3d at 528. The court did not expand upon its point that smart meters permit time-based pricing; however, time-based pricing is available outside the context of advance metering infrastructure. *See generally* ADVANCED METERING INFRASTRUCTURE SYSTEMS, ENERGY.GOV (Sept. 2016), [https://www.energy.gov/sites/prod/files/2016/12/f34/AMI%20Summary%20Report\\_09-26-16.pdf](https://www.energy.gov/sites/prod/files/2016/12/f34/AMI%20Summary%20Report_09-26-16.pdf).

95. *Id.* at 528-29.

96. *Id.* at 529.

97. *Id.* (emphasis added).

98. *Id.*

99. *Naperville*, 900 F.3d at 529.

100. *See generally Naperville*, 900 F.3d 521.

different decision would likely have followed.<sup>101</sup> While the court's opinion is limited in scope by the procedural posture, as well as a number of other distinguishing facts and circumstances,<sup>102</sup> this court's holding and rationale provide a method for courts in the future to analyze the same or similar issues involving increasingly sophisticated technologies present in the home, even beyond smart meters.<sup>103</sup>

The *Naperville* decision also provides helpful information for utilities, and especially municipal utilities.<sup>104</sup> In the Fourth Amendment context, the decision provides a strong endorsement of the argument that smart meters represent a substantial government interest.<sup>105</sup> Although smart meter technology and data collection did constitute a search of a home in this context, the court considered the search *reasonable* and beneficial to the necessary advancement of technology in the electric utilities industry.<sup>106</sup>

Other cities or utilities could potentially adapt from the litigation in *Naperville*.<sup>107</sup> Most importantly, they could avoid such a controversy and subsequent litigation in the future if, unlike the present case, they give their "residents a genuine opportunity to consent to the installation of smart meters. . . ."<sup>108</sup> Using the example in *Naperville*, a metering program would less likely be deemed a search for Fourth Amendment purposes if its interval data was less frequent than every 15 minutes, or if the data was not subsequently transferred to government employees, either manually or by wireless connection.<sup>109</sup>

#### IV. CONCLUSION

The Seventh Circuit's *Naperville* decision provides a useful framework for the analysis of smart meter data collection programs under the Fourth Amendment of the U.S. Constitution.<sup>110</sup> While the decision is necessarily limited given the case's less-than-fully developed factual basis, the case is noteworthy for any utility

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101. *Naperville*, 900 F.3d at 529.

102. Additionally, NSMA did not pursue further appeal of this decision. See *Home*, *supra* note 5.

103. See generally *Naperville*, 900 F.3d 521. See also Orin S. Kerr, *An Equilibrium-Adjustment Theory of the Fourth Amendment*, 125 HAR. L. REV. 476, 480 (2011) ("[W]hen changing technology or social practice makes evidence substantially easier for the government to obtain, the Supreme Court often embraces higher protections to help restore the prior level of privacy protection"). Also potentially affected by the holding in *Naperville* are cybersecurity issues or concerns that arise when technology companies collect information on individuals from spaces ordinarily considered private. See generally Mariam Morshedi, *Cybersecurity and Law Enforcement*, SUBSCRIPT L. (Nov. 8, 2018), <https://www.subscriptlaw.com/blog/cybersecurity-and-law-enforcement>.

104. See generally *Naperville*, 900 F.3d 521.

105. *Id.*

106. *Naperville*, 900 F.3d at 529 (emphasis added). There are potentially still some privacy-related concerns that exceed the Fourth Amendment's narrow scope, however. See Mariam Morshedi, *Cybersecurity and Law Enforcement*, *supra* note 103.

107. See generally *Naperville*, 900 F.3d 521.

108. *Naperville*, 900 F.3d at 529.

109. *Id.*

110. See generally *Naperville*, 900 F.3d 521.

provider with smart meter programs, those seeking to adopt them, or customers who may wish to challenge smart meter programs.<sup>111</sup>

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111. *Id.*

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