

## Collaborative Pipeline Risk Governance: A Response to Professor Gosman

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In her article, *Planning for Failure: Pipelines, Risk, and the Energy Revolution*, Professor Sara Gosman undertakes a comprehensive and insightful study of the risk governance associated with pipeline siting.<sup>1</sup> Gosman focuses on the separation of legal frameworks governing safety and those governing siting.<sup>2</sup> She argues that parallel risk governance paradigms are insufficient to address the risk of catastrophic harm posed by the ongoing massive energy infrastructure buildout associated with the energy revolution.<sup>3</sup>

Domestic natural gas and oil pipeline infrastructure has expanded rapidly to connect new production resources with markets and export terminals.<sup>4</sup> As Gosman documents, hundreds of thousands of miles of oil pipelines and millions of miles of gas pipelines transect the United States, running under roads, rivers, and through subdivisions.<sup>5</sup> In addition, gathering lines connect wells within remote production fields and transport product to market transmission systems for long-distance transportation.<sup>6</sup> As domestic oil and gas production have increased owing to hydraulic fracturing and horizontal drilling, so has the need for transportation.<sup>7</sup> Gosman illustrates the pipeline system is rapidly “remaking itself” into a more widespread system of higher pressure and larger diameter pipelines.<sup>8</sup> While she acknowledges that pipelines are still the safest option for transportation of oil and natural gas, she suggests that domestic pipeline transmission has outgrown its supervisory and regulatory structures with respect to safety.<sup>9</sup>

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<sup>1</sup> See generally Sarah Gosman, *Planning for Failure: Pipelines, Risk, and the Energy Revolution*, 81 OHIO ST. L.J. 349 (2020).

<sup>2</sup> See *id.* at 355–56.

<sup>3</sup> See *id.* at 394–97.

<sup>4</sup> *Id.* at 354.

<sup>5</sup> *Id.* at 356–57.

<sup>6</sup> “Gathering line means a pipeline that transports gas from a current production facility to a transmission line or main.” 49 C.F.R. § 192.3 (2019); see also 49 C.F.R. § 195.2 (2019) (defining a gathering line to mean “a pipeline 219.1 mm (8 5/8 in) or less nominal outside diameter that transports petroleum from a production facility”).

<sup>7</sup> Gosman, *supra* note 1, at 364.

<sup>8</sup> *Id.* at 367.

<sup>9</sup> See *id.* at 394–97.

Gosman’s principal critique of pipeline risk governance is that safety and siting regulation are needlessly divided, and thus do not adequately address the interrelationship between a pipeline’s location and the risk of a spill or failure.<sup>10</sup> The regulatory structure for siting pipeline infrastructure varies significantly between interstate natural gas pipelines, interstate oil pipelines, intrastate pipelines for both gas and oil, and gathering lines.<sup>11</sup> In contrast to the federal siting framework for interstate natural gas pipelines, interstate oil pipelines and intrastate pipelines for both oil and gas must obtain state regulatory approval and eminent domain authority.<sup>12</sup> As Gosman correctly identifies, there are significant variations between federal and state approaches.<sup>13</sup> However, she identifies one commonality: administrative reviews of pipeline siting are largely inadequate with respect to safety and thus do not adequately account for the long-term risk of the pipeline.<sup>14</sup>

Safety, on the other hand, is federally regulated by the Pipeline and Hazardous Materials Safety Administration (PHMSA).<sup>15</sup> PHMSA regulates safety throughout the lifecycle of the pipeline: design, construction, operation, maintenance, and abandonment.<sup>16</sup> Although PHMSA standards discourage locating rights-of-ways in areas containing “private dwellings, industrial

<sup>10</sup> *Id.* at 370.

<sup>11</sup> *See id.* at 377–82; Alexandra B. Klass, *Future-Proofing Energy Transport Law*, 94 WASH. U. L. REV. 827, 837, 843 (2017).

<sup>12</sup> Pursuant to Section 7 of the Natural Gas Act, the Federal Energy Regulatory Commission (FERC) determines whether the siting of proposed natural gas pipelines meets the “public convenience and necessity.” 15 U.S.C. § 717f(c)(1)(A) (2020); *see also* Gosman, *supra* note 1, at 352 n.22; Klass, *supra* note 11, at 843. In comparison, oil and intrastate gas pipelines either go largely unregulated or they primarily undergo siting at the state level. Gosman, *supra* note 1, at 380–81 (citing ALASKA STAT. §§ 42.06.240(a), .630 (2018); ARK. CODE ANN. §§ 23-18-503(6)(C), -510(a) (2015); CAL. PUB. UTIL. CODE §§ 1001, 1002.5 (West 2010); CONN. GEN. STAT. §§ 16-50i, 50k (2013); FLA. STAT. § 403.9405 (2015); 220 ILL. COMP. STAT. 5/15-401 (2013); IOWA CODE ANN. § 479.5 (West 2019); MASS. GEN. LAWS ch. 164, §§ 69G, 69J (2015); MICH. COMP. LAWS ANN. § 483.109 (West 2008); MINN. STAT. ANN. § 216G.02 (West 2010); MONT. CODE ANN. §§ 75-20-104(9)(b), -201 (2019); NEV. REV. STAT. §§ 704.860, .865 (2014); N.H. REV. STAT. ANN. §§ 162-H:2(VII)(a), :5(I), :10-b (2014); N.Y. PUB. SERV. LAW §§ 120(2), 121 (McKinney 2019); N.D. CENT. CODE § 49-22.1-01(7)(a), -04 (2014); OHIO REV. CODE ANN. §§ 4906.01(B)(1)(c), .04 (West. Supp. 2019); OR. REV. STAT. §§ 469.300(11)(a)(E)(ii), 320 (2017); R.I. GEN. LAWS §§ 42-98-3, -4 (2006); S.D. CODIFIED LAWS §§ 49-41B2.1(2), -4 (2004); VT. STAT. ANN. tit. 30, § 248(a)(3) (2017); VA. CODE ANN. § 56-265.2–2:1 (2012); WASH. REV. CODE ANN. §§ 80.50.020(21)(b), .060 (West 2001); WYO. STAT. ANN. §§ 37-1-101(a)(vi)(G), -2-205 (2019)).

<sup>13</sup> *See* Gosman, *supra* note 1, at 377–82.

<sup>14</sup> *See id.* at 394–97. Some state siting approaches may actually compound risks by co-locating pipelines within a consolidated corridor. *See, e.g.*, BUREAU OF LAND MGMT., DEP’T OF THE INTERIOR, SCOPING SUMMARY REPORT: WYOMING PIPELINE CORRIDOR INITIATIVE PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT 11 (2020). While a pipeline corridor might streamline siting processes and acquisition of right of way, it could increase the risk of multiple and concurrent failures resulting from seismic or other localized events.

<sup>15</sup> 49 U.S.C. § 108 (2012).

<sup>16</sup> Gosman, *supra* note 1, at 373 (citing 49 U.S.C. § 60102(a)(2)(B) (2012)).

buildings, and places of public assembly,”<sup>17</sup> they do not prescribe a route or location or evaluate alternatives based on consequences of an accident.<sup>18</sup> Further, safety standards only modestly protect “high consequence areas” through additional regulation, the imposition of additional construction and operation specifications, and integrity management requirements.<sup>19</sup> Thus, federal control through both FERC and PHMSA fails to fully encompass the nuanced and ever-changing landscape of risk. As Gosman’s article illustrates, the current system allows pipelines to be sited near people and sensitive ecological and cultural resources even where the consequences of failure could be catastrophic.<sup>20</sup>

Gosman’s typology classifies risk policies as either preventative, managerial, or remedial according to when the policy would intercede in the risk timeline.<sup>21</sup> She argues that the current, bifurcated approach to safety and siting is primarily managerial and remedial.<sup>22</sup> Safety regulations are designed to uniformly reduce risk to acceptable levels.<sup>23</sup> However, Gosman argues that by considering safety as emmeshed with pipeline placement and geography, some of the most devastating human and environmental tragedies can be avoided.<sup>24</sup> Thus, she argues that a preventative approach would be safer, more efficient, and publicly acceptable.<sup>25</sup> Gosman’s preventative approach does not advocate for a moratorium on pipeline construction. She acknowledges that, while pipeline operators have some latitude in siting long distance projects, at times pipelines cannot be rerouted and that, so long as we rely on natural gas, an absolute preventative approach that would prohibit all pipelines is infeasible.<sup>26</sup> Rather, Gosman advocates for meaningfully integrating safety analyses into federal siting processes for both interstate oil and natural gas pipelines.<sup>27</sup> She suggests a more integrated federal framework that combines siting and safety in

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<sup>17</sup> 49 C.F.R. § 195.210(a) (2019).

<sup>18</sup> Since Gosman’s article was written, PHMSA issued a new “mega rule” which addresses some of the regulatory gaps Gosman identifies, including gaps in regulating gathering lines. The changes to the safety-related condition reporting requirement may help inform PHMSA about risk. The rule will go into effect July 1, 2020. Pipeline Safety: Safety of Gas Transmission Pipelines: MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments, 84 Fed. Reg. 52,180, 52,231 (Oct. 1, 2019) (to be codified at 49 C.F.R. pts. 191–92); Pipeline Safety: Safety of Hazardous Liquid Pipelines, 84 Fed. Reg. 52,260, 52,294 (Oct. 1, 2019) (to be codified at 49 C.F.R. pt. 195).

<sup>19</sup> See 49 C.F.R. § 192 (2019).

<sup>20</sup> Gosman, *supra* note 1, at 374–75.

<sup>21</sup> *Id.* at 388.

<sup>22</sup> *Id.* at 390–91.

<sup>23</sup> *Id.* at 391.

<sup>24</sup> *Id.* at 400.

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

<sup>26</sup> See Gosman, *supra* note 1, at 393–94.

<sup>27</sup> *Id.* at 400.

a single agency would encourage siting decisions that avoid high consequence areas.<sup>28</sup>

While increasing safety considerations regarding long term risk, consolidation in federal agencies may eclipse state and local safety concerns and further diminish participation by local governments. As Gosman notes, consolidation of siting and safety into one federal agency would transfer oil pipeline siting authority away from states, likely garnering political opposition.<sup>29</sup> Although Gosman acknowledges that risk governance could be improved through greater involvement of landowners, local governments, municipalities, and other political or administrative subdivisions, she critiques that a localized siting approach would increase transaction and information costs and shift the burden of risk governance to communities and landowners.<sup>30</sup> As Gosman and others have noted, there are significant barriers to meaningful local government involvement in federal pipeline siting processes, despite statutory consultation requirements.<sup>31</sup> Further, examples from oil pipelines and transmission lines indicate that local opposition in state processes may derail construction of necessary interstate infrastructure.<sup>32</sup> A shift in siting authority to local governments, she argues, could prevent public goods from being constructed and might not increase safety: local governments and landowners might not have accurate information or be able to efficiently assess risk.<sup>33</sup>

This Response considers whether coordinated and inclusive governance of pipeline siting would improve safety by facilitating bargaining around localized pipeline externalities. It focuses on the role of local governments, landowners, and other political and administrative subdivisions in pipeline risk governance. In other contexts, local governments and landowners have made significant contributions to environmental governance of large, landscape-scale resources through private agreements and public-private partnerships.<sup>34</sup> These arrangements provide both nimbleness and dynamism to environmental governance over fragmented resources and avoid inefficient externalities.<sup>35</sup> They also facilitate trust and cooperation among participants and may give rise to implied obligations of good faith between them.<sup>36</sup> Why not here? This Response argues that negotiations and resulting contracts with landowners and

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<sup>28</sup> *Id.*

<sup>29</sup> *Id.* at 400–01.

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

<sup>31</sup> *See, e.g., id.* at 395.

<sup>32</sup> *See* Gosman, *supra* note 1, at 351–52; Klass, *supra* note 11, at 854. For a comprehensive review of efforts to reroute the nexus-spectrum pipeline, see Heidi Gorovitz Robertson, *Cities and Citizens Seethe: A Case Study of Local Efforts to Influence Natural Gas Pipeline Routing Decisions*, (forthcoming) (manuscript at 124–32) [on file with author].

<sup>33</sup> Gosman, *supra* note 1, at 395.

<sup>34</sup> *See, e.g.,* Karen Bradshaw Schulz & Dean Lueck, *Contracting for Control of Landscape-Level Resources*, 100 IOWA L. REV. 2507, 2530–31 (2015).

<sup>35</sup> Hannah J. Wiseman, *Coordinating the Oil and Gas Commons*, 6 BYU L. REV. 1543, 1552–53 (2014).

<sup>36</sup> *Denbury Onshore LLC v. Christensen*, 722 F. App'x 768, 775 (10th Cir. 2018).

local governments surrounding pipeline siting processes can supplement public governance structures, increasing the safety and environmental sustainability of interstate infrastructure projects. It suggests that pipelines already are areas of shared public-private control, and that, as a result, pipeline safety governance should facilitate more robust collaboration and private ordering. Part I of this Response frames pipeline siting within the literature of landscape-scale resource planning and private environmental governance. Part II analyzes current opportunities for local government and landowner participation in federal natural gas siting processes through FERC, with a particular emphasis on safety and rerouting. Part III offers observations regarding how federal regulatory processes for pipeline siting could create space for more meaningful and substantive consultation and involvement by landowners and local governments and offers suggestions relative to solving information and transaction cost problems.

### I. THE PIPELINE AS A LANDSCAPE-SCALE RESOURCE

Recent scholarship in natural resource and environmental law has focused on assembling and governing landscape-scale resources.<sup>37</sup> Landscape-scale resources are those that “exceed individual parcel sizes”<sup>38</sup> and thus “cannot be constrained into neatly defined lines.”<sup>39</sup> Examples of landscape-scale resources include firescapes, oil and gas reservoirs, wildlife migration corridors, recreation and viewscales, night skies, and ecosystems.<sup>40</sup> Landscape-scale resources defy confinement to individual parcels of land and can only be used and enjoyed at a landscape scale.<sup>41</sup>

At first, pipelines seem an awkward fit with the concept of landscape resources: pipelines are exactly that—a neatly defined line—the type of “‘long and skinny’ public-good producing resources” that are well suited to centralized and unilateral government control.<sup>42</sup> As demonstrated by siting disputes concerning transmission lines and oil pipelines, overlapping local and state

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<sup>37</sup> Bradshaw & Lueck, *supra* note 34, at 2516; Karen Bradshaw & Bryan Leonard, *Virtual Parceling*, INT’L J. COMMONS (forthcoming) (manuscript at 3–4) [on file with author]; Allison Jones, *The Importance of Connected and Conserved Landscapes in a Time of Changing Climate*, 31 UTAH ENVTL. L. REV. 135, 144–46 (2011); Bryan Leonard & Dominic Parker, *Creating Anticommons: Historical Land Privatization and Modern Natural Resource Use*, ECON. J. (forthcoming) (manuscript at 40) [on file with author]; Tara Righetti, *Contracting for Sustainable Surface Management*, 71 ARK. L. REV. 367, 368 (2018) [hereinafter Righetti, *Contracting*].

<sup>38</sup> Bradshaw & Lueck, *supra* note 34, at 2507.

<sup>39</sup> *Id.* at 2511.

<sup>40</sup> *See id.* at 2524–47 (citing a wide range of examples of landscape-scale resources).

<sup>41</sup> *See id.* at 2516.

<sup>42</sup> *Id.* at 2519.

siting of energy transmission resources can produce inefficiencies<sup>43</sup> and prevent the construction of needed public good projects.<sup>44</sup> As a result, much of recent scholarship has advocated for more centralized control of energy transmission projects, either through federal backstop authority or governance that can be scaled to the interstate nature of the proposed project.<sup>45</sup> Fully localized siting authority could produce a patchwork of regulations and procedures based on heterogeneous preferences throughout the entire length of the pipeline, thus increasing transaction costs and further diluting comprehensive analysis of long-term and distributed safety risk.<sup>46</sup>

In other key respects oil and natural gas pipelines are the ultimate landscape-scale resource. They form a circulatory system that drapes the country, connecting remote production resources in rural Wyoming with chemical plants in Houston and subdivisions in Maine.<sup>47</sup> Like wildlife migration routes, a resilient pipeline network requires interconnectivity and coordination. In contrast to the diversity of uses and preferences along the entire route of an interstate pipeline, pipeline segments are likely to transect areas of greater homogeneity.<sup>48</sup> Land along a pipeline route is already divided into political and administrative subdivisions such as fire districts, conservation and water districts, local governments, and counties.<sup>49</sup> Shared geographical proximity may align landowner interests, making it easier to assemble resources and advocate for landowner preferences.<sup>50</sup> These conditions reduce transaction costs between landowners and provide opportunities for collaborative action—either in favor or opposition of projects.<sup>51</sup>

Owing to the vast heterogeneity of land uses along a pipeline route, it is not difficult to imagine that uniform safety and siting regulations discount regional concerns, overlook low probability events, and fail to incorporate local knowledge and preferences.<sup>52</sup> As indicated by the highly publicized disputes

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<sup>43</sup> See Leonard & Parker, *supra* note 38 (manuscript at 37–38) (illustrating that in the tribal trust system, subdivision of control can reduce rents realized from oil and gas development).

<sup>44</sup> Klass, *supra* note 11, at 876.

<sup>45</sup> See *id.* at 873–74, 875–77; Tara K. Righetti, *Siting Carbon Dioxide Pipelines*, 3 OIL & GAS NAT. RESOURCE & ENERGY J. 907, 909 (2017).

<sup>46</sup> Bradshaw & Lueck, *supra* note 34, at 2544–45.

<sup>47</sup> See Gosman, *supra* note 1, at 356 (describing the vast reach of pipelines throughout the United States).

<sup>48</sup> See Bradshaw & Leonard, *supra* note 35, at 3 (describing and applying Bradshaw and Lueck’s prior work in the pipeline context).

<sup>49</sup> See Gosman, *supra* note 1, at 351.

<sup>50</sup> Bradshaw & Lueck, *supra* note 34, at 2516 (“Shared geographical proximity of many resource users allows for consolidation of efforts to defend against laws restricting resource use and lobbying government for favorable policies.”); Robert C. Ellickson, *Property in Land*, 102 YALE L.J. 1315, 1320 (1993).

<sup>51</sup> Ellickson, *supra* note 50, at 1397–98.

<sup>52</sup> Klass, *supra* note 11, at 837–38.

over the Keystone XL, Dakota Access, and Nexus-Spectra pipelines,<sup>53</sup> local government, tribal, and landowner opposition to pipeline construction has increased.<sup>54</sup> Concerns over siting, safety, climate, and environmental impacts, as well as frustrations relative to lack of power and substantive consultation have eroded the social license afforded to energy transportation projects.<sup>55</sup>

The importance of pipeline safety and risk governance to local governments and administrative subdivisions and the landowners within them should not be overlooked. Despite federal siting frameworks and broad condemnation authority, once constructed, pipelines become areas of public-private control.<sup>56</sup> Landowners already have a significant role in pipeline risk management.<sup>57</sup> As Gosman notes, the leading cause of accidents in gas distribution pipelines is excavation damage, whether through construction, plowing, or digging.<sup>58</sup> Easement and right-of-way agreements may require landowners to indemnify pipeline operators from damages resulting from landowner-caused failures.<sup>59</sup> Landowners also bargain for compensation, minor routing changes, and surface management conditions.<sup>60</sup> Thus, landowners not only have the most intimate understanding of the land on which pipelines are constructed, but they are also among the principal contributors to gas distribution pipeline failures. Regardless of the cause, landowners bear many of the most immediate harms of pipeline failures.<sup>61</sup> Additionally, landowners use of property overlying pipelines will be influenced by local regulations and norms.<sup>62</sup> As a result, private governance instruments and local regulations have the potential to significantly influence pipeline safety.

Private-public contracts can fill gaps in current federal and state siting processes, addressing localized concerns and reducing public opposition through contracts, community benefit agreements, memoranda of understanding, and other mechanisms. Lueck and Bradshaw argue that private governance mechanisms are best suited to areas where homogeneity among landowner incentives and regular transacting between landowners reduce costs

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<sup>53</sup> Robertson, *supra* note 33 (manuscript at 126–43).

<sup>54</sup> Klass, *supra* note 11, at 837–38; see James W. Coleman, *Beyond the Pipeline Wars: Reforming Environmental Assessment of Energy Transport Infrastructure*, 2018 UTAH L. REV. 119, 122 (2018); Gosman, *supra* note 1, at 351–52; Sam Kalen, *A Bridge to Nowhere?: Our Energy Transition and the Natural Gas Pipeline Wars*, MICH. J. ENVTL. & ADMIN. L. (forthcoming 2020) (manuscript at 3, 28) [on file with author].

<sup>55</sup> See Kristen van de Biezenbos, *Negotiating Energy Democracy*, 33 J. LAND USE & ENVTL. L. 331, 334–35 (2018).

<sup>56</sup> See generally Bradshaw & Lueck, *supra* note 34 (describing the public-private control dynamics that arise after infrastructure that cannot be contained to one piece of property is constructed).

<sup>57</sup> Gosman, *supra* note 1, at 395.

<sup>58</sup> *Id.* at 371.

<sup>59</sup> See Righetti, *Contracting*, *supra* note 38, at 368.

<sup>60</sup> *Id.* at 368, 375.

<sup>61</sup> See, e.g., Gosman, *supra* note 1, at 370–71.

<sup>62</sup> PIPELINE SAFETY TR., LANDOWNER'S GUIDE TO PIPELINES 7 (3d ed. 2016).

of bargaining.<sup>63</sup> They further suggest that formality and public resources can overcome barriers to transacting as the number of coordinating parties increase.<sup>64</sup> While coordination problems along the entire route of a pipeline may be significant, thus supporting uniform federal safety and siting,<sup>65</sup> regional homogeneity of land uses and interests may resolve contracting problems.<sup>66</sup> A cooperative federalism approach that combines federal siting authority with meaningful opportunities for landowner and local government participation through both siting proceedings and contracting would improve pipeline risk governance.

## II. LIMITS ON LOCAL GOVERNMENT AND LANDOWNER INVOLVEMENT

Local regulation of pipeline siting, safety, and environmental impacts are largely preempted by state and federal law.<sup>67</sup> Local governments can regulate traditional land use functions such as building codes,<sup>68</sup> though local efforts to use zoning or other local control mechanisms to prohibit or reroute pipelines have been largely unsuccessful.<sup>69</sup> Accordingly, a local governments most meaningful opportunity to influence siting may be through intervention in federal siting processes.

The current federal siting process provides several avenues for local government and landowner participation. The Natural Gas Act grants FERC authority over all transportation and sale of natural gas impacting interstate commerce.<sup>70</sup> The Natural Gas Act requires that persons and companies engaged in the transportation and sale of natural gas acquire a certificate of public convenience and necessity from FERC before engaging in the proposed construction or extension of facilities used for transporting or sale of gas.<sup>71</sup> Filing processes with FERC provide local governments and landowners with formal avenues to participate in a voluntary, consultative, pre-filing process through the National Environmental Policy Act (NEPA).<sup>72</sup> This process

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<sup>63</sup> Bradshaw & Lueck, *supra* note 34, at 2530–31.

<sup>64</sup> *Id.* at 2539.

<sup>65</sup> *See id.*

<sup>66</sup> *See, e.g., id.* at 2530–31.

<sup>67</sup> Energy Policy Act of 2005, Pub. L. No. 109–58, § 311, 119 Stat. 594, 687–88; Gosman, *supra* note 1, at 377–78.

<sup>68</sup> *See* PIPELINE SAFETY TR., *supra* note 63, at 7.

<sup>69</sup> Robertson, *supra* note 33 (manuscript at 101–02); *EIS Pre-Filing Environmental Review Process*, FED. ENERGY REG. COMMISSION, <https://www.ferc.gov/resources/processes/flow/process-eis.asp> [<https://perma.cc/GB97-XSEX>] [hereinafter *EIS Pre-Filing*].

<sup>70</sup> Natural Gas Act § 7(c)(1)(A), 15 U.S.C. § 717f(c)(1)(A) (2018).

<sup>71</sup> *See id.*

<sup>72</sup> FED. ENERGY REGULATORY COMM'N, GUIDANCE MANUAL FOR ENVIRONMENTAL REPORT PREPARATION 3-1 to 3-4 (2017), <https://www.ferc.gov/industries/gas/enviro/guidelines/guidance-manual-volume-1.pdf> [<https://perma.cc/88NG-QKCZ>] [hereinafter GUIDANCE MANUAL].



provides stakeholders—including landowners and local governments—with early notice of proposed pipeline projects.<sup>73</sup> The pre-filing process also offers stakeholders opportunities to participate early in the pipeline process in order to raise concerns prospectively and influence the project’s location and design.<sup>74</sup> During the preliminary and scoping processes, landowners and local governments can attend open houses, scoping meetings, and site visits.<sup>75</sup>

Additionally, landowners, local governments, and other regional administrative bodies have an opportunity to provide formal comments as part of the NEPA review process.<sup>76</sup> NEPA’s implementing of regulations for the Natural Gas Act requires the applicant to consult with federal, state, and local agencies during scoping and environmental review processes.<sup>77</sup> This includes preparation of a report that describes “the impact the project will have on present uses of the affected area . . . , including commercial uses, mineral resources, recreational areas, *public health and safety*, and the aesthetic value of the land.”<sup>78</sup> Other statutes, such as the National Historic Preservation Act, may also affect interstate pipeline siting and provide opportunities for local government consultation.<sup>79</sup>

For many communities, formal consultation procedures have not resulted in substantive opportunities to significantly influence pipeline siting or safety.<sup>80</sup> Although NEPA and other environmental review statutes require federal agencies to consider local concerns and the risk of pipeline failures during the siting process,<sup>81</sup> presently these processes do not assure that the environmental, safety, and local concerns of energy transportation infrastructure are thoroughly vetted. Poor coordination between FERC and PHMSA, inattention, and reliance on PHMSA rules to mitigate risk may leave important safety risks unaddressed.<sup>82</sup> Many landowners and local governments, additionally, face numerous hurdles to effective participation in formal siting procedures including lack of effective communication, transparency, and lack of power.<sup>83</sup> Moreover, poor coordination between FERC and PHMSA, inattention, and reliance on PHMSA rules to mitigate risk may leave important safety risks unaddressed.<sup>84</sup>

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<sup>73</sup> Robertson, *supra* note 33 (manuscript at 104) (citing *Frequently Asked Questions (FAQs): Gas Pre-Filing*, FED. ENERGY REG. COMMISSION, <https://www.ferc.gov/resources/faqs/prefiling.asp> [<https://perma.cc/U5D7-36AD>] (last updated May 30, 2012)).

<sup>74</sup> 18 C.F.R. § 157.21 (2019).

<sup>75</sup> *EIS Pre-Filing*, *supra* note 70.

<sup>76</sup> See GUIDANCE MANUAL, *supra* note 73, at 2-1 to 2-6.

<sup>77</sup> 18 C.F.R. § 380.3(b)(3) (2019).

<sup>78</sup> 18 C.F.R. § 380.12(j)(8) (emphasis added).

<sup>79</sup> 36 U.S.C. § 800.3(f)(1) (2018).

<sup>80</sup> See Gosman, *supra* note 1, at 395.

<sup>81</sup> See *supra* notes 72–78 and accompanying text.

<sup>82</sup> Gosman, *supra* note 1, at 373–75; Kalen, *supra* note 54 (manuscript at 49, 61–62).

<sup>83</sup> Robertson, *supra* note 33 (manuscript at 121).

<sup>84</sup> Gosman, *supra* note 1, at 373–75; Kalen, *supra* note 54 (manuscript at 49, 61–62).

Communities that can overcome barriers to consultation may realize substantial benefits. Although not required as part of the consultation process, active involvement by cities or counties can result in the execution of private governance agreements. The concerted and coordinated efforts of Ohio residents and communities around the siting of the Nexus-Spectra pipeline resulted in a settlement that addressed many of the communities' concerns.<sup>85</sup> Residents of Green, Oberlin, and Bowling Green had significant apprehension regarding the impact and risks of the proposed pipeline as a result of fault lines, school zones, water sources and environmental areas.<sup>86</sup> Residents relentlessly participated in formal consultation processes including open houses and scoping meetings, commenting in NEPA and CWA environmental review processes, city council meetings, referenda, protests, and charter amendments.<sup>87</sup> It was only after challenging FERC's certificate of approval and filing a class action lawsuit against Nexus and FERC that the City of Green entered into a settlement regarding the pipeline, which included public service improvements, monitoring obligations, and local exactions in exchange for the dismissal of all lawsuits.<sup>88</sup> Notably, the city was able to obtain some minor rerouting concessions, all of them related to safety hazards that were identified by the community.<sup>89</sup> This experience demonstrates the challenges that confront citizens and local governments intervening in the FERC process. It also hints at the potential of private governance instruments to obtain community benefits for locally sited energy transportation projects, decrease local opposition, and encourage siting away from locally identified safety hazards. Thus, private governance agreements regarding pipeline siting can fill an important role in a preventative risk-governance approach consistent with Gosman's goals.

### III. COLLABORATIVE PIPELINE RISK GOVERNANCE

Formal consultation procedures supported by public resources and information encourage private contracting around environmental problems.<sup>90</sup> However, despite consultation requirements and easement negotiations with landowners, including local governments, development agreements for pipeline siting are uncommon. Many communities confront significant difficulties intervening in federal siting processes.<sup>91</sup> Although easements and rights-of-way

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<sup>85</sup> Emily Chesnic, *Green Approves NEXUS Settlement*, AKRON.COM (Feb. 8, 2018), <https://www.akron.com/articles/green-approves-nexus-settlement/> [<https://perma.cc/Q5B8-6HZS>].

<sup>86</sup> Robertson, *supra* note 33 (manuscript at 124).

<sup>87</sup> *Id.* (manuscript at 126–32).

<sup>88</sup> *Id.* (manuscript at 146–47).

<sup>89</sup> *Id.* (manuscript at 147–49).

<sup>90</sup> Kalen, *supra* note 54 (manuscript at 34–37).

<sup>91</sup> *Id.* at 50 n.250. FERC currently operates under a stringent policy against late intervention efforts by landowners and efforts to bring in issues that landowners failed to

negotiations occur, these are frequently conducted against background threats of condemnation and may be hampered by informational and organizational problems and differential bargaining power.<sup>92</sup> Additionally, these negotiations may occur after the route has been approved, thus limiting opportunities to address local safety and siting concerns. Thus, many of the potential benefits of private environmental governance relative to pipeline siting may not be realized. Siting and safety agencies—whether FERC or the expanded PHMSA for which Gosman advocates<sup>93</sup>—can remediate the informational, organizational, and power challenges that burden communities seeking to intervene in siting processes and facilitate more efficient contracting around easements and rights-of-way.

The reconstituted PHMSA that Gosman imagines, with unified safety and siting authority, could provide landowners and local governments with information necessary to meaningfully incorporate safety concerns into easement negotiations. As Gosman articulately details, in the siting process safety is secondary to economic considerations surrounding markets.<sup>94</sup> However, were PHMSA to consider safety and siting together, the agency would have a more informed process and would approve only those pipelines that could be routed so as to prevent the most significant risks.<sup>95</sup> A requirement to consider safety at the siting stage could encourage more robust analyses of safety risks as part of alternatives in NEPA review and evaluations. Transparency in this process would overcome some of the information asymmetry surrounding pipeline risk, thus empowering landowners and local governments to participate more meaningfully in siting proceedings.<sup>96</sup>

PHMSA regulations could also address the lack of power experienced by many landowners and local governments by encouraging cooperation among landowners. The preemption of local regulation by state and federal law limits participation by communities to a consultative process, which is largely advisory and impedes bargaining power.<sup>97</sup> Formal intervention in federal siting proceedings require early, coordinated action and access to counsel.<sup>98</sup> These are

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raise initially. *Id.*; see also *Mountain Valley Pipeline, L.L.C.*, 163 FERC ¶ 61,197, at 5–6 (2018) (order on rehearing); *DTE Midstream Appalachia, L.L.C.*, 162 FERC ¶ 61,238, at 3–4 (2018) (order issuing certificate); *Tenn. Gas Pipeline Co., L.L.C.*, 162 FERC ¶ 61,167, at 2–4 (2018) (order denying and dismissing rehearing).

<sup>92</sup> Kalen, *supra* note 54 (manuscript at 34–37).

<sup>93</sup> Gosman, *supra* note 1, at 400.

<sup>94</sup> *Id.* at 369, 393.

<sup>95</sup> *Id.* at 400.

<sup>96</sup> Currently, neither landowners, nor local governments, nor federal siting agencies have the tools and information to adequately consider the long-term risks of spills or releases. See *id.* at 398–99 (summarizing policy suggestions to improve tools and information relating to spills and releases).

<sup>97</sup> Hannah J. Wiseman, *Disaggregating Preemption in Energy Law*, 40 HARV. ENVTL. L. REV. 293, 303–06, 309–10 (2016) [hereinafter Wiseman, *Disaggregating*].

<sup>98</sup> See, e.g., *Mountain Valley Pipeline, L.L.C.*, 163 FERC ¶ 61,197, at 5–7 (2018) (order on rehearing).

cost prohibitive to most individual landowners and communities.<sup>99</sup> In a handful of rare scenarios, landowners along proposed pipeline routes are organizing themselves into coalitions to obtain greater concessions and power in negotiations, requiring pipeline companies to deal with them collectively rather than individually.<sup>100</sup> These coalitions, most prevalently led by lawyers and landowners in rural areas with greater landowner homogeneity, recognize that risk and liability are tied to the terms of the easements they negotiate, and that spills and releases elsewhere along the route can have significant transboundary impacts on water and environmental resources.<sup>101</sup> As Ellickson observed, members of close-knit groups leverage preexisting social relationships to reduce transaction costs among relatively homogenous landowners by sharing costs of information and representation.<sup>102</sup> Landowners along a pipeline route recognize that cooperation may increase their bargaining position through collective action thus increasing cooperation.<sup>103</sup> Not all landowners along a proposed route, however, realize the coordination benefits of organically formed, close-knit associations. Earlier coordination and attentiveness to processes such as open houses that bring together stakeholders and facilitate intervention will assure that local concerns are more substantively incorporated into siting processes.<sup>104</sup>

PHMSA could help landowners overcome barriers to intervention by facilitating opportunities for communities to organize earlier through improved notice requirements. Stronger and earlier notice requirements could require an applicant for a FERC certificate to furnish landowners with detailed information about the federal intervention process and provide the names of other, adjacent landowners along the proposed pipeline route. These requirements already exist in some state condemnation processes. For instance, North Dakota, requires a condemnor to provide the names of at least ten other property owners whose property may be taken for the project.<sup>105</sup> By helping landowners identify other

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<sup>99</sup> See generally Debra Cassens Weiss, *Middle-Class Dilemma: Can't Afford Lawyers, Can't Qualify for Legal Aid*, ABA J. (July 22, 2010), [https://www.abajournal.com/news/article/middle-class\\_dilemma\\_cant\\_afford\\_lawyers\\_cant\\_qualify\\_for\\_legal\\_aid](https://www.abajournal.com/news/article/middle-class_dilemma_cant_afford_lawyers_cant_qualify_for_legal_aid) [<https://perma.cc/3DDJ-SAL6>] (describing the unaffordability of attorneys for most Americans).

<sup>100</sup> CHEYENNE AREA LANDOWNERS COALITION, <http://cheyennecoalition.org/> [<https://perma.cc/PVD7-5VP7>]; Stephanie Joyce, *Landowners Connect to Negotiate with Pipeline Companies*, WYO. PUB. MEDIA (Aug. 22, 2014), <https://www.wyomingpublicmedia.org/post/landowners-connect-negotiate-pipeline-companies#stream/0> [<https://perma.cc/WPJ7-D2ML>]; Clarice Silber, *Coalition Opposes Texas Pipeline*, ARK. DEMOCRAT GAZETTE (Oct. 22, 2019), <https://www.arkansasonline.com/news/2019/oct/22/coalition-opposes-texas-pipeline-201910/> [<https://perma.cc/98BE-JH3L>].

<sup>101</sup> See, e.g., Jo Clifton, *Landowners, Pipeline Company Meet in Court Today*, AUSTIN MONITOR (May 28, 2019), <https://www.austinmonitor.com/stories/2019/05/landowners-pipeline-company-meet-in-court-today/> [<https://perma.cc/98BE-JH3L>].

<sup>102</sup> Bradshaw & Leonard, *supra* note 38, at 4; Ellickson, *supra* note 55, at 1320–21.

<sup>103</sup> See Bradshaw & Leonard, *supra* note 38, at 6.

<sup>104</sup> Alexandra B. Klass & Jim Rossi, *Reconstituting the Federalism Battle in Energy Transportation*, 41 HARV. ENVTL. L. REV. 423, 477–78, 480–81 (2017).

<sup>105</sup> N.D. CENT. CODE § 32-15-06.2 (2020).

owners similarly situated along the proposed route, notice can overcome information barriers and help landowners organize and coordinate intervention across heterogeneous groups.

An expanded siting and safety agency could also encourage private governance around safety by requiring minimum requirements for easements obtained using condemnation. Industry custom and formal laws and regulations that require negotiation as part of formal public energy siting processes can facilitate contracting between landowners and project developers.<sup>106</sup> These mechanisms provide a structure for parties to negotiate, rather than litigate, and create a space within which collaborative and site-specific solutions can be generated.<sup>107</sup> The resulting agreements form an important component of environmental and risk governance. For instance, negotiated easements may specify restrictions on landowner uses overlying pipeline easements, address liability for spills, and impose requirements for pipeline abandonment and removal.<sup>108</sup> Further, negotiations may identify synergistic or incompatible uses preemptively,<sup>109</sup> facilitating the location of pipelines in areas that prevent future conflicts which could increase the risks of spills and releases. State laws impose minimum negotiation requirements for some energy facility siting,<sup>110</sup> split estates,<sup>111</sup> and condemnation proceedings.<sup>112</sup> State public service commissions may also require landowner coordination around safety and environmental issues as a condition to the grant of a construction permit.<sup>113</sup> In contrast, the Natural Gas Act does not mandate negotiation around these requirements, nor does it assess the fairness or adequacy of easement terms, even where access is obtained pursuant to a conditional certificate.<sup>114</sup> By adopting minimum terms regarding safety, liability, and reclamation within condemned easements, FERC can expand opportunities for landowners to contract around safety issues.

Finally, Gosman's reconstituted PHMSA could provide local governments with shared responsibility over some aspects of siting, thus expanding the space

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<sup>106</sup> Righetti, *Contracting*, *supra* note 38, at 374–80.

<sup>107</sup> *Id.* at 383–84, 386.

<sup>108</sup> FED. ENERGY REGULATORY COMM'N, AN INTERSTATE NATURAL GAS FACILITY ON MY LAND? WHAT DO I NEED TO KNOW? 8, 10–11, 14–15, 18, 25 (2015), <https://www.ferc.gov/resources/guides/gas/gas.pdf> [<https://perma.cc/V6QD-QMP5>].

<sup>109</sup> *See, e.g.*, Bradshaw & Lueck, *supra* note 34, at 2538–39.

<sup>110</sup> *See, e.g.*, MONT. CODE ANN. § 82-10-504 (2019); WYO. STAT. ANN. § 30-5-402(c) (West 2020).

<sup>111</sup> *See* WYO. STAT. ANN. § 30-5-402(f).

<sup>112</sup> IND. CODE ANN. § 32-24-1-3(b)-(c) (West 2020); MONT. CODE ANN. § 70-30-203(4)(b)(iv) (2019); N.D. CENT. CODE § 32-15-06.1 (2020); WYO. STAT. ANN. § 1-26-509 (West 2020).

<sup>113</sup> *See generally* TRANSCANADA, KEystone XL PROJECT—CONSTRUCTION, MITIGATION, AND RECLAMATION PLAN (2008), <https://puc.sd.gov/commission/dockets/HydrocarbonPipeline/2009/hp09-001/hearing/exhibitb.pdf> [<https://perma.cc/8KNF-BSL9>] (explaining the mitigation and construction services Keystone will provide as a result of their permits being accepted).

<sup>114</sup> *See* Natural Gas Act § 7(h), 15 U.S.C. § 717f(h) (2018).

within which contract-based consent processes occur. Voluntary and self-initiated cooperation is unlikely to overcome the significant lack of power and informational and transaction costs that communities face when intervening in federal siting process. For instance, cooperation is likely to be more difficult in more urban areas where many of the individuals significantly affected by the externalities associated with pipelines may not own land directly overlying the proposed route.<sup>115</sup> Rules that allow cities and counties to regulate some aspects of pipeline siting would encourage negotiation and provide additional opportunities to resolve local safety concerns.<sup>116</sup> Although multi-tenure processes may increase the initial cost and time of coordinating property interests along the pipeline,<sup>117</sup> it could reduce subsequent litigation and public opposition.

Decentralized governance and greater local authority within coordinated, multi-level siting processes may encourage innovative solutions, enhance accountability for local impacts, address social license, and provide space within which private ordering can occur.<sup>118</sup> A number of contexts within energy governance already encourage shared governance and agency coordination.<sup>119</sup> For instance, Colorado's Oil and Gas Conservation Act grants local governments the explicit power to regulate the surface impacts of oil and gas operations in a manner that "protect[s] and minimizes adverse impacts to public health, safety, and welfare and the environment."<sup>120</sup> The Colorado Oil and Gas Conservation Commission (COGCC) rules further allow operators to voluntarily streamline certain permitting processes for oil and gas development after a transparent and methodological process that includes multi-agency coordination between local governments, counties, and state environmental quality and wildlife agencies.<sup>121</sup> In contrast to consultation requirements in FERC pre-filing and NEPA review processes,<sup>122</sup> the COGCC rules explicitly authorize local governments to issue siting permits and participate in agency proceedings.<sup>123</sup> Additionally, common law rules governing split estates and state statutes requiring accommodation of surface uses have contributed to strong norms of contract between landowners and energy developers.<sup>124</sup> As a

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<sup>115</sup> See Riley W. Vanham, Comment, *A Shift in Power: Why Increased Urban Drilling Necessitates a Change in Regulatory Authority*, 43 ST. MARY'S L.J. 229, 247 (2011).

<sup>116</sup> van de Biezenbos, *supra* note 55, at 335–41.

<sup>117</sup> Leonard & Parker, *supra* note 38, at 41–42.

<sup>118</sup> See *supra* notes 97–117 and accompanying text.

<sup>119</sup> See, e.g., Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Space*, 125 HARV. L. REV. 1133, 1159–60 (2012).

<sup>120</sup> COLO. REV. STAT. §§ 29-20-104(1)(g)–(h), (2), (3) (2019).

<sup>121</sup> See, e.g., COLO. OIL & GAS CONSERVATION COMM'N, COGCC RULES & REGULATIONS 216, 305(a)–(f), 507, 509 (2020).

<sup>122</sup> See *supra* notes 81–84 and accompanying text.

<sup>123</sup> COLO. OIL & GAS CONSERVATION COMM'N, COGCC RULES & REGULATIONS 216(d)(2), 503(b)(4) (2020).

<sup>124</sup> See COLO. REV. STAT. § 34-60-127 (2019); *Chase v. Colo. Oil. & Gas Conservation Comm'n*, 2012 COA 94, ¶¶ 33–37, 284 P.3d 161, 167–68 (Colo. App. 2012).

result, both landowners and local governments frequently negotiate the terms of development including local land use improvements and investments in public services.<sup>125</sup> These agreements also provide local governments with contract remedies in the event of breach.<sup>126</sup> An administrative process that requires negotiation with local governments prior to accessing land would also provide communities with additional opportunities for judicial review. Private law arrangements, such as surface use agreements with landowners and memoranda of understanding with local governments, are one facet of a democratized energy siting process in which community voices are more substantively weighed.<sup>127</sup>

Strong state laws and procedural requirements around condemnation can assure meaningful judicial review of federal pipeline condemnation proceedings. Courts can shape the scope and tone of negotiations around pipeline siting and address intergovernmental authority conflicts. Currently, many communities and landowners face the prospect of David versus Goliath negotiations with pipeline developers who may already have a Section 7 certificate, a conditional certificate, or a preliminary injunction granting access to land.<sup>128</sup> Even where parties can agree on the terms of possession and scope of easements, judicial review may be limited to an assessment of fair market value.<sup>129</sup> However, in recent years state courts have shown willingness to consider the reasonableness of offers made as part of eminent domain and compulsory pooling proceedings based on review of comparable agreements<sup>130</sup>

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<sup>125</sup> Daniel P. Selmi, *The Contract Transformation in Land Use Regulation*, 63 STAN. L. REV. 591, 609–11 (2011); see also *Memorandum of Understanding (MOU)*, INTERMOUNTAIN OIL & GAS BMP PROJECT, <https://www.oilandgasbmps.org/resources/MOU.php> [<https://perma.cc/5ASQ-VG3V>] (last updated Oct. 15, 2016).

<sup>126</sup> CITY & COUNTY OF BROOMFIELD, NOTICE OF BREACH OF OCTOBER 24, 2017 AMENDED AND RESTATED OIL AND GAS OPERATOR AGREEMENT BETWEEN EXTRACTION OIL & GAS, INC. (“EXTRACTION”) AND THE CITY AND COUNTY OF BROOMFIELD (THE “CITY”), (June 15, 2018), <https://www.broomfield.org/DocumentCenter/View/26964/Notice-of-Breach---June-15-2018> [<https://perma.cc/67VS-CMPX>].

<sup>127</sup> van de Biezenbos, *supra* note 55, at 335–41.

<sup>128</sup> See Kalen, *supra* note 54 (manuscript at 50) (suggesting that delaying transfers of property interests under conditional certificates or denying pipelines preliminary injunctions to access land before grant of a certificate could assure local interests are protected).

<sup>129</sup> Frequently, judicial review is limited to an analysis of the diminishment of value resulting from the pipeline and does not consider potential risk to the landowner or long-term liability. See, e.g., Johns Marrs Ellis & Hodge, LLP, *Texas Landowners Win \$2.1 Million Judgment Against Pipeline Company over Lower Property Value*, PR NEWswire (Mar. 24, 2014), <https://www.prnewswire.com/news-releases/texas-landowners-win-21-million-judgment-against-pipeline-company-over-lower-property-value-251945191.html> [<https://perma.cc/3LTG-PQFC>]. In Wyoming, however, contracts between other landowners may be introduced as evidence of fair value. See *Barlow Ranch, Ltd. P’ship v. Greencore Pipeline Co.*, 301 P.3d 75, 105 (Wyo. 2013).

<sup>130</sup> *Id.* ¶¶ 53–85.

and the safety concerns of municipalities.<sup>131</sup> These requirements may also apply to federal condemnation proceedings.<sup>132</sup> The Natural Gas Act requires that the practice and procedure for federal condemnation proceedings conform “as nearly as may be” to that in state court proceedings.<sup>133</sup> Accordingly, incorporating procedural consultation, good faith, and minimum contracting requirements into state eminent domain law and agency rules could provide municipalities with expanded opportunities for judicial review of the reasonableness of easement terms and development agreements.

A cooperative framework—within which both local governments and federal authorities share aspects of siting responsibility—assures that local concerns will be addressed but that public-good projects move forward.<sup>134</sup> Formal negotiation requirements related to land use permits with administrative subdivisions, such as water or conservation districts, fire districts, county commissioners, or city councils, could facilitate bargaining over localized impacts, while retaining ultimate regulation of safety and siting with FERC. Greater involvement by local governments could provide pathways for them to share in the benefits of energy infrastructure projects and address the social costs<sup>135</sup> and to raise concerns about safety and siting earlier within federal siting processes.<sup>136</sup> Ultimate review by a higher-level agency such as FERC could assure that safety concerns were appropriately prioritized in coordinated multi-agency siting processes and could mitigate potential downsides of a multi-level governance approach including consolidation of risk, holdouts, and environmental justice concerns.<sup>137</sup>

As Gosman’s article convincingly illuminates, informed decision making around energy transportation infrastructure cannot happen in a segregated process: siting and safety are emmeshed.<sup>138</sup> By reimagining pipelines as a landscape-scale resource, it also becomes apparent that pipeline safety is a

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<sup>131</sup> *Simmers v. City of North Royalton*, 65 N.E.3d 257, at ¶¶ 34–38 (Ohio Ct. App. 2016).

<sup>132</sup> *Bison Pipeline, LLC v. 102.84 Acres of Land*, 560 Fed. App’x 690, 696–97 (10th Cir. 2013).

<sup>133</sup> 15 U.S.C. § 717f(h) (2018).

<sup>134</sup> Nestor M. Davidson, *Cooperative Localism: Federal-Local Collaboration in an Era of State Sovereignty*, 93 VA. L. REV. 959, 960, 961–63 (2007); Freeman & Rossi, *supra* note 119, at 1159, 1163–64 (evaluating FERC coordination with other federal agencies); Wiseman, *Disaggregating*, *supra* note 97, at 314, 318–19; David B. Spence, *The Political Economy of Local Vetoes*, 93 TEX. L. REV. 351, 411–13 (2014); Hannah Wiseman, *Expanding Regional Renewable Governance*, 35 HARV. ENVTL. L. REV. 477, 525–28 (2011). Professor Klass provides an example of the Telecommunications Act, which leaves much of siting authority with local governments but prohibits an absolute ban on cell phone towers. *See* Klass, *supra* note 11, at 886–87.

<sup>135</sup> Jim Rossi & Christopher Serkin, *Energy Exactions*, 104 CORNELL L. REV. 643, 650, 680–83 (2019).

<sup>136</sup> Gosman, *supra* note 1, at 398–99.

<sup>137</sup> Wiseman, *Disaggregating*, *supra* note 97, at 339–48.

<sup>138</sup> Gosman, *supra* note 1, at 401.



function of coupled human and natural systems: the safety, performance, and operation of pipelines are influenced by their location, the people who live and work in and around them, and the communities and ecosystems through which they pass.<sup>139</sup> Despite this, the current pipeline siting framework treats pipelines as objects in isolation, focusing disproportionately on economic feasibility and relying on other regulatory mechanisms to control, manage, and remediate risk.<sup>140</sup> Ever-growing information about public health, safety, and environmental consequences of pipeline accidents have better equipped communities, landowners, and regulators to collaboratively assemble the resource rights necessary for pipeline projects within a framework that includes safety and risk governance.

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<sup>139</sup> See *supra* notes 57–63 and accompanying text for commentary on how people living around pipelines pose the greatest risk to damaging the pipelines, but also suffer the most damages.

<sup>140</sup> Gosman, *supra* note 1, at 369, 393.