



# Carbon Dioxide (CO<sub>2</sub>) Pipelines: Safety, Siting, and Eminent Domain

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Carbon dioxide (CO<sub>2</sub>) pipelines are essential to [carbon capture and storage \(CCS\)](#) systems, promoted by both the [Biden](#) and [Trump](#) Administrations to reduce emissions of CO<sub>2</sub>—a greenhouse gas—from power plants and industrial facilities. Approximately [5,300 miles of CO<sub>2</sub> pipeline](#) already operate in the United States, primarily linking natural CO<sub>2</sub> sources to oil fields for [enhanced oil recovery](#). However, a [much larger pipeline network](#) would be needed for CCS to significantly reduce greenhouse gas emissions at the national level.

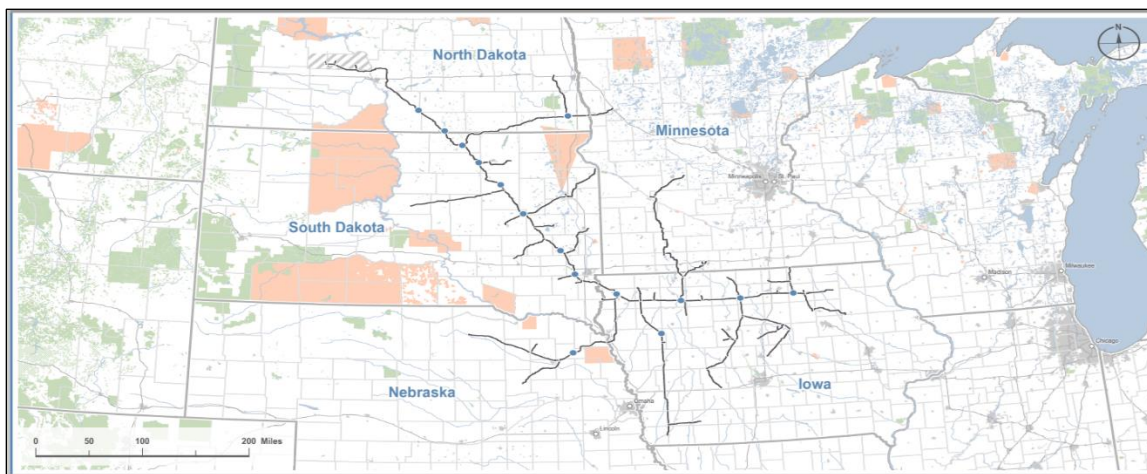
In recent years, several greenfield CO<sub>2</sub> pipeline projects have been proposed in the Midwest to capture CO<sub>2</sub> from ethanol plants. These projects have encountered public opposition and [regulatory challenges](#), including denial of state siting permits. Due to these challenges, two developers ([Navigator CO<sub>2</sub> Ventures](#) and [Wolf Carbon Solutions](#)) have canceled their respective projects. [Summit Carbon Solutions](#) is actively developing a third project, but [has struggled](#) to secure all the necessary property rights and permits across the [five states](#) (**Figure 1**) where it would be constructed. (A fourth developer, [Tallgrass Energy](#), is converting an existing natural gas pipeline to carry CO<sub>2</sub> through Nebraska, Colorado, and Wyoming.)

Challenges to siting new CO<sub>2</sub> pipelines primarily involve two interrelated issues—safety risks and eminent domain authority. These issues raise questions about the future availability of CO<sub>2</sub> pipelines for CCS and the federal role in CO<sub>2</sub> pipeline development.

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**Figure 1. Summit Carbon Solutions Proposed CO<sub>2</sub> Pipeline System**

**Source:** Summit Carbon Solutions, LLC, *Application to the South Dakota Public Utilities Commission for a Permit for the SCS Carbon Transport LLC Pipeline Under the Energy Conversion and Transmission Facility Act*, November 19, 2024.

## CO<sub>2</sub> Pipeline Safety

CO<sub>2</sub> pipelines pose [public safety risks](#). CO<sub>2</sub> displaces oxygen at high concentrations—which may cause suffocation. CO<sub>2</sub> may also contain hazardous contaminants. The [Pipelines and Hazardous Materials Safety Administration \(PHMSA\)](#) has long regulated the construction, operation, and maintenance of CO<sub>2</sub> pipelines (49 C.F.R. §§190, 195-199). However, a 2020 [CO<sub>2</sub> pipeline rupture](#) in Sartartia, MS, which caused [45 people to be hospitalized](#), has prompted [criticism from pipeline safety advocates](#) of PHMSA's existing regulations and has contributed to CO<sub>2</sub> pipeline opposition. In 2022, California [enacted](#) a moratorium on pipeline transportation of CO<sub>2</sub> for CCS projects until PHMSA updates its regulations.

The Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 ([P.L. 112-90](#), §15) directed PHMSA to implement new safety standards for pipeline transportation of gaseous CO<sub>2</sub>. On January 15, 2025, PHMSA [announced](#) a Notice of Proposed Rulemaking (NPRM) to “strengthen existing standards for hazardous liquid and CO<sub>2</sub> pipelines” and “establish new standards for transporting carbon dioxide in a gaseous state via pipeline.” Concurrently, PHMSA submitted the [NPRM](#) for publication in the *Federal Register*, the final step required for the proposal to be official. However, in compliance with a January 20, 2025, [memorandum](#) issued by President Trump, PHMSA withdrew the NPRM from *Federal Register* publication, so it is not “official” and is not open for public comment.

How PHMSA will proceed with its NPRM is uncertain, although the agency may separately consider other regulatory changes related to CO<sub>2</sub> pipeline safety. On June 4, 2025, following a series of executive orders issued by President Trump, PHMSA [published](#) an advance notice of proposed rulemaking (ANPRM) soliciting “stakeholder feedback on whether to repeal or amend” any of its pipeline safety requirements “to eliminate undue burdens on the identification, development, and use of domestic energy resources and to improve government efficiency.” This broad ANPRM applies to PHMSA's existing CO<sub>2</sub> pipeline safety regulations as part of its overall pipeline regulatory portfolio. PHMSA opened a comment period for its ANPRM through August 4, 2025.

## Eminent Domain Authority

Due to safety risks and property rights concerns, CO<sub>2</sub> pipeline developers [have faced resistance](#) securing voluntary agreements with private landowners for pipeline rights-of-way. Under current law, states have primary siting jurisdiction for CO<sub>2</sub> pipelines, although federal approvals may be required for certain pipeline segments (e.g., on federal lands). Without voluntary agreements, developers may still secure rights-of-way involuntarily if they have eminent domain authority, which often accompanies state siting permits. However, CO<sub>2</sub> pipeline siting authorities, landowner rights, and eminent domain laws vary from state to state, so securing rights-of-way is not guaranteed—especially for interstate projects.

There have been recent [regulatory interventions](#) and legislative efforts in some states to limit eminent domain authority for CO<sub>2</sub> pipeline projects. For example, in March 2025, South Dakota [prohibited](#) the exercise of eminent domain specifically by CO<sub>2</sub> pipelines. In June 2025, Louisiana enacted [legislation](#) authorizing eminent domain authority only for “common carrier” CO<sub>2</sub> pipeline projects, effectively excluding pipelines with capacity committed to only a limited group of shippers. In May 2025, the Iowa legislature passed [a bill](#) to limit CO<sub>2</sub> pipeline projects’ use of eminent domain and impose other requirements. Iowa’s governor vetoed the bill, but nonetheless [stated](#) that “we can do more to limit the use of eminent domain.”

Some analysts have asserted that the absence of federal siting authority for CO<sub>2</sub> pipelines could be “[a significant problem](#).” In 2023, the Biden Administration [urged Congress](#) to “address the siting of ... carbon dioxide pipelines ... and provide federal siting authority for such infrastructure.” On May 20, 2025, the House Budget Committee [reported an initial draft](#) of the One Big Beautiful Bill Act (H.R. 1), which would have given the [Federal Energy Regulatory Commission](#) the same siting authority over interstate CO<sub>2</sub> pipelines that it currently exercises for natural gas pipelines, including eminent domain authority—preempting state jurisdiction (§41006). Congressional opponents of this provision [criticized it](#) as “especially egregious given that Midwestern states are currently debating or have enacted legislation that would prohibit the usage of eminent domain authority at the state level for carbon dioxide pipelines.” This provision was subsequently stripped from the version of H.R. 1 that passed the House. Whether Congress considers future legislative proposals to federalize CO<sub>2</sub> pipeline siting remains to be seen.

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