**Carbon Dioxide Pipeline Risk Minimization Certification Ordinance**

**Whereas**, a number of companies have proposed to construct pipelines through the State of Iowa and [name of] County (“County”) for the purpose of transporting carbon dioxide in a supercritical state, and it is possible that additional such pipelines could be proposed;

**Whereas**, in high atmospheric concentrations carbon dioxide is an asphyxiant and intoxicant, and levels at or greater than 4% or 40,000 parts per million, carbon dioxide is considered to be immediately dangerous to life and health;

**Whereas**, on February 22, 2020, a 24-inch diameter carbon dioxide pipeline ruptured approximately 1 mile from the town of Satartia, Mississippi, and caused a number of residents to become unconscious or intoxicated, required hospitalization of \_\_ persons and evacuation of more than two hundred persons, and also put the lives and welfare of local emergency response personnel at risk;

**Whereas**, County and municipalities within County employ a number of emergency response personnel, including local sheriff’s, police, firefighters, and emergency medical service responders, and is responsible for ensuring the safety of these public servants through adequate training, knowledge, and access to personal protective equipment;

**Whereas**, a rupture of a carbon dioxide pipeline in County would likely release large amounts of carbon dioxide that could rise to dangerous levels near the rupture that could threaten the health and lives of county residents, emergency response personnel, and animals including but not limited to valuable livestock in confined feeding facilities;

**Whereas**, a rupture of a carbon dioxide pipeline near a populated area could cause a mass casualty event;

**Whereas**, the County does not have access to scientific assessments of the area of risk that would result from a rupture of the carbon dioxide pipeline proposed to be constructed in the County, which can be estimated through the use of computer modeling;

**Whereas**, the State of Iowa through Iowa Code Chapter 29C requires County to participate in and fund county-level and regional emergency response planning for both natural and human-caused disasters through its joint county-municipal local emergency management commission and agency, to support response to disasters in other Iowa counties, and to establish emergency communication measures to alert County residents of threats to their lives and wellbeing;

**Whereas**, the State of Iowa through Iowa Code Chapter 335 authorizes County to regulate non-agricultural uses of land and structures, including the “use of buildings, structures, and land for trade, industry, residence, or other purposes . . .” so as to secure the safety of County residents from fire, flood, panic, and other dangers and to protect their health and the general welfare;

**Whereas**, the existing emergency response plan for County does not at present evaluate the risk of or plan for a response to a rupture of the carbon dioxide pipeline that is proposed to pass through County;

**Whereas**, Iowa Code Section 479B.1 authorizes the Iowa Utilities Board “to approve the location and route of hazardous liquid pipelines” following consideration of alternative routes, but does not identify the factors that the Board must consider in its decision when selecting a route;

**Whereas**, the Iowa Utilities Board does not have jurisdiction over emergency response in Iowa and has no expertise in emergency response planning;

**Whereas**, the general assembly of the State of Iowa requires that County plan for a rupture of the proposed carbon dioxide pipeline, and to protect its employees and residents from the effects of such rupture;

**Whereas**, the federal Pipeline Safety Act in 49 U.S.C. § 60101 et seq. authorizes the U.S. Department of Transportation to regulate safety standards for the design, construction, operation, and maintenance of hazardous liquid pipelines, including those that transport supercritical carbon dioxide, but § 60104(e) of this law states that “[t]his chapter does not authorize the Secretary of Transportation to prescribe the location or routing of a pipeline facility,” such that no federal regulation determines the location or route of a hazardous liquid pipeline; therefore, the State of Iowa through the Iowa Utilities Board may determine the route or location of a federally regulated hazardous liquid pipeline based on such policy factors that it deems relevant;

**Whereas**, the State of Iowa may and must consider the risks of a carbon dioxide pipeline when selecting a route for it, so as to prevent its construction overly near to residential buildings, high and vulnerable population buildings such as schools and nursing homes, and confined animal facilities;

**Whereas**, the County seeks to require preparation of an estimate of the hazard zone resulting from a rupture of the carbon dioxide pipeline proposed to be constructed in County, for the purpose of selecting the least dangerous route through County;

**Whereas**, County has authority to require information from a company that proposes to construct a carbon dioxide pipeline in County that will allow County to fulfill its statutorily required emergency planning duties and protect county emergency response personnel;

**Whereas**, County action prohibiting selection of a route for a proposed pipeline, pending completion of County’s assessment of the risk of such pipeline and identification of the lowest risk route for submission to the Iowa Utilities Board, is consistent with and necessary to the Iowa Utilities Board’s authority to select a route that is “just and proper;”

**Now, therefore be it resolved**, by the County Board of Supervisors for \_\_\_\_\_\_\_\_\_\_\_\_ County, Iowa, that it adopts its Ordinance for a Carbon Pipeline Route Risk Minimization Certificate Program, as follows:

**Ordinance for a Carbon Pipeline** **Route Risk Minimization Certificate**

1. **Intent.**
   1. Protection of Life and Health. This ordinance is intended to protect the lives and health of [name] County (“County”) residents and their livestock and other animals in the event of a rupture of a carbon dioxide pipeline through information gathering, emergency planning, and acquisition of emergency response equipment and training.
   2. Coordination of County Emergency Response Authority with Iowa Utilities Board authority to locate and route supercritical carbon dioxide pipelines. This ordinance is intended to coordinate the implementation of the separate statutory authorities of County and the Iowa Utilities Board related to permitting of carbon dioxide pipelines. County is obligated by Iowa Code Chapter 29C to conduct emergency planning for carbon dioxide pipeline ruptures; and by Iowa Code 335 to implement land use controls to secure the safety of County residents from the dangers of pipelines and to protect the health and the general welfare of County residents from the impacts of pipeline operation. The Iowa Utilities Board is obligated by Iowa Code Chapter 479B to authorize the location and routes of pipelines following consideration of alternative routes, upon such terms, conditions, and restrictions as it finds to be just and proper, but the statute does not identify or limit the factors considered in its route selection process. County finds that the proximity of an operating carbon dioxide pipeline to residences and businesses creates a risk to life, health, and safety for the persons occupying such structures, and the proximity of a carbon dioxide pipeline to livestock creates a risk of loss of such livestock. County finds that such risks require mitigation through emergency planning, first responder training and provisioning, and route selection to avoid pipeline construction and operation overly near County residents and businesses. Accomplishing these goals is consistent with the intent requires the coordination of County and the Iowa Utilities Board administrative processes. An objective of this ordinance is to provide for such coordination, as doing so is consistent with Iowa Code Chapters 29C, 335, and 479B, and in accordance with the home rule powers granted to County by Iowa Const. Art. III, § 39A, to enact and enforce ordinances not inconsistent with the laws of the general assembly.
2. **Definitions.**
   1. “Carbon Dioxide Pipeline” means a pipeline of 4 inches or more diameter used to transport a gas, liquid, or supercritical fluid comprised of 50 percent or more of carbon dioxide (CO2).
   2. “Commission” means the [name of county] County Emergency Management Commission [or joint emergency management commission] established under Iowa Code § 29C.9.
   3. "County" and "the County" mean [name] County.
   4. “Blast Zone” means the geographic area in County that would be subject to a shock wave from rupture of a Carbon Dioxide Pipeline that could harm or kill persons or animals due solely to physical trauma, for example from flying debris or the physical impact of a pressure wave resulting from a rupture.
   5. “Fatality Zone” means the geographic area in County in which residents of the County would face a significant risk of loss of life due to a rupture of a Carbon Dioxide Pipeline, taking into consideration the dispersion of CO2 from a rupture, taking into consideration CO2 concentration and the duration of exposure.
   6. “Hazard Zone” means the geographic area in County in which residents of the County would likely become intoxicated or otherwise suffer significant adverse health impacts due to a rupture of a Carbon Dioxide Pipeline, taking into consideration the dispersion of CO2 from a rupture, taking into consideration CO2 concentration and the duration of exposure.
   7. “Mass Notification and Emergency Messaging System” means a system which disseminates emergency and public safety-related information to the public by various means including but not limited to telephone, wireless communications service, dual party relay service or telecommunications device, text messaging, electronic mail, and facsimile, and which integrates with federal emergency messaging systems.
3. **Carbon Dioxide Pipeline Emergency Response Plan.**

Prior to construction of a Carbon Dioxide Pipeline, County shall prepare and approve an emergency response plan in the event of a rupture of such pipeline. The County emergency response plan will be prepared for use by County, municipal, and state emergency response personnel and persons put at risk by a Carbon Dioxide Pipeline Rupture in County. To avoid conflicts with the federal Pipeline Safety Act, 49 U.S.C. § 60101 *et seq*., the County emergency response plan shall not direct a Carbon Dioxide Pipeline owner or operator’s response to a rupture; however, County may seek information from a Carbon Dioxide Pipeline owner or operator that is necessary for preparation of and updates to the County emergency response plan.

* 1. **Contents.** A Carbon Dioxide Pipeline emergency response plan must contain the following:
     1. A map and legal description of the proposed route for a Carbon Dioxide Pipeline showing all human occupied structures and animal husbandry facilities, by type, within two miles of the centerline of the proposed route.
     2. A discussion of the health risks resulting from exposure of humans and animals to carbon dioxide released from a pipeline, considering the concentrations of carbon dioxide in the air near to a rupture, the duration in time of exposure, and the presence of other harmful substances released from a rupture. This discussion will identify the exposure level and duration of time that may cause a fatality of persons or animals, and the exposure level and duration that may cause intoxication or other significant adverse health effects.
     3. An estimate of the worst-case discharge of carbon dioxide released in metric tons and standard cubic feet from a rupture of a pipeline considering the interior volume of the pipeline, the location of emergency valves that limit release of carbon dioxide, the location of crack arrestors, operating pressures, operating temperatures, and other relevant factors.
     4. A rupture dispersion modeling report containing the results of computational fluid dynamic computer model estimates of the maximum geographic ranges of the Fatality Zone and Hazard Zone for the Carbon Dioxide Pipeline in the event of its rupture in a range of weather conditions and representative topography in County, as well as in low elevation areas of the County where released carbon dioxide may settle.
     5. A computer model report showing the Blast Zone for the Carbon Dioxide Pipeline.
     6. A list of structures and facilities within the Hazard Zone, Fatality Zone, and Blast Zone for the proposed route of a Carbon Dioxide Pipeline that in the preceding year have contained humans or livestock, and an estimate of the numbers of persons and livestock in each structure and facility.
     7. A list of high consequence areas defined as areas within the Hazard, Fatality, or blast zone where a single rupture would have the potential to adversely affect 10 or more persons or a facility with 100 or more livestock.
     8. A discussion of the potential adverse impacts of a rupture of a Carbon Dioxide Pipeline on the humans, livestock, and other real and personal property within the Hazard Zone, Fatality Zone, and Blast Zone for the proposed route of a Carbon Dioxide Pipeline.
     9. Identification of alternative routes to minimize risks to humans and animals from a rupture of the Carbon Dioxide Pipeline with County, and a discussion of the risks of these alternatives relative to the proposed route.
     10. Identification of county first responder emergency information, planning, equipment, and training needs, for response to a rupture of the Carbon Dioxide Pipeline, including but not limited to:
         1. a material data safety sheet for the materials transported in the Carbon Dioxide Pipeline;
         2. agency-specific response plans for law enforcement, emergency medical responders, and other response agencies;
         3. carbon dioxide detectors and evacuation plans for each human occupied structure;
         4. response equipment needs for emergency response personnel, such as carbon dioxide and other chemical detectors; respirators; personal protective equipment; communications equipment; road barriers and traffic warning signs; and non-internal combustion engine evacuation vehicles;
         5. a Carbon Dioxide Pipeline rupture emergency response training program to ensure safe and effective response by county and municipal law enforcement, emergency medical services, and other responders during the operational life of the Carbon Dioxide Pipeline.
     11. Identification of residential and business emergency response needs, including but not limited to a Mass Notification and Emergency Messaging System; evacuation plans; evaluation equipment needs especially for mobility impaired individuals; carbon dioxide detectors, and respirators.
  2. **Draft Plan; Fees and Expenses**. The County may enter into such contracts as are necessary to develop the County Emergency Response Plan, or it may require that pipeline developer prepare and submit draft plan to County. County shall require a per-mile fee from the developer of a proposed Carbon Dioxide Pipeline sufficient to pay for County’s costs for preparation and approval of County emergency response plan.
  3. **Notice and Hearing; Board of Supervisor Action.**
     1. **Notice and Hearing; Board of Supervisors Action;** Following public notice and an opportunity to comment in accordance with applicable County and state administrative procedures, the County Board of Supervisors shall consider and approve a County Emergency Response Plan that minimizes the adverse effects of a Carbon Dioxide Pipeline rupture on humans and livestock within the County, upon such terms and conditions as it determines will minimize the potential impacts of such rupture. The County shall provide or require the developer of a proposed Carbon Dioxide Pipeline to provide public notice of the hearing by first class mail to every residence and every operating business within two miles of the proposed Carbon Dioxide Pipeline Route.
     2. **Emergency Response Costs**. The Board of Supervisors shall require that the developer of a proposed Carbon Dioxide Pipeline provide or reimburse the County and municipalities within the County for the costs of emergency response planning, equipment, communications, and training costs related to implementation of the County emergency response plan.
     3. **Prerequisite for Construction**. No Carbon Dioxide Pipeline may be constructed in County until the Commission has approved an emergency response plan for such pipeline.
     4. **Referral to Emergency Management Commission**. County shall provide the approved emergency response plan to the Commission, and request inclusion of the plan in the County’s comprehensive emergency plan required by Iowa Code § 29C.9(8).

1. **Carbon Dioxide Pipeline** **Route Risk Minimization Certificate.**
   1. **Route Certificate Required.** A developer of a proposed Carbon Dioxide Pipeline shall apply for a route risk minimization certificate from the Board of Supervisors. No Carbon Dioxide Pipeline may be constructed in County without a certificate.
   2. **Contents.** The Route Risk Minimization Certificate shall contain the following:
      1. **Required Setbacks**. The certificate shall impose setbacks for construction of the proposed Carbon Dioxide Pipeline to exclude High Consequence Areas from a Carbon Dioxide Pipeline’s Hazard, Fatality, and Blast Zones, as determined in the County emergency response plan.
      2. **Recommended Route.** The certificate shall contain a recommended route within the County that, in accordance with the County emergency response plan, minimizes the potential adverse impacts of a Carbon Dioxide Pipeline rupture on humans and then livestock. When selecting a route, the Board of Supervisors shall consider the distances from the proposed Carbon Dioxide Pipeline to occupied structures, the availability of evacuation routes; the potential for carbon dioxide to persist in low lying areas, and other relevant factors.
   3. **Approval.**
      1. **Board of Supervisors Action; Notice and Hearing**. Following public notice and an opportunity to comment in accordance with applicable County and state administrative procedures, the County Board of Supervisors shall consider and if found adequate approve a Route Risk Minimization Certificate, upon such terms and conditions as it determines will minimize the potential impacts of a rupture within County. The County shall provide or require the developer of a proposed Carbon Dioxide Pipeline to provide public notice of the hearing by first class mail to every residence and every operating business within two miles of the proposed Carbon Dioxide Pipeline Route.
      2. **Route Selection Costs**. The Board of Supervisors shall require that the developer of a proposed Carbon Dioxide Pipeline provide or reimburse the County for the costs of the route selection process.
      3. **Prerequisite for Construction**. No Carbon Dioxide Pipeline may be constructed in County until the Commission has approved a Route Risk Minimization Certificate for such pipeline.
      4. **Referral to Iowa Utility Board**. County shall provide the approved Route Risk Minimization Certificate to the Iowa Utility Board and request that the Board include the setbacks and recommended route within any permit issued by it under Iowa Code chapter 479B.