

Map Disclaimer (8" diameter).

The corridor depicted on this map represents Navigator Heartland Greenway's "could affect" corridor for High Consequence Areas (HCAs) or inhabited structures on the Navigator Heartland Greenway system. This is based on the maximum dispersion distance of a potential 40,000ppm (4%) CO₂ concentration which could cause IDLH symptoms (described below) at a 30-minute duration exposure. The 1.855-foot buffer for the corridor is based on the worst-case potential distance from 9 results from Navigator CO₂'s plume modeling for an 8" diameter pipeline and the maximum distance for which CO₂ concentration could reach 40,000ppm (4%) (Hazard Level 2) based on a modeled guillotine rupture of the pipeline system. For the model runs Navigator CO₂ used PHAST and Aloha modeling using various atmospheric conditions and determined maximum 40,000ppm dispersion distances ranging from 420 to 1,855 feet, with an average of the nine model runs of a 996-foot maximum dispersion distance.

The National Institute of Occupational Safety and Health (NIOSH) (reference NIOSH, "Immediately Dangerous to Life or Health (IDLH) Values," 1994) defines the Hazard Level 2 / 40,000 ppm concentration with a 30 minute exposure time as the atmospheric concentration of any toxic, corrosive, or asphyxiant substance that poses an immediate threat to life or that would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere. This exposure is recognized as presenting an increased risk level as impacted persons would need to evacuate from an IDLH environment via self-evacuation or assistance from first responders.

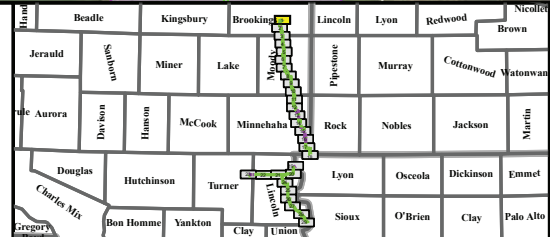
The affected IDLH area for any leak incident, were one to occur, would be limited to the maximum dispersion distance around the location of the actual leak incident in the direction of prevailing wind, not the full pipeline route.

Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/Highways
- Roads
- Railroads



Brookings County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 1 of 29

HEARTLAND GREENWAY

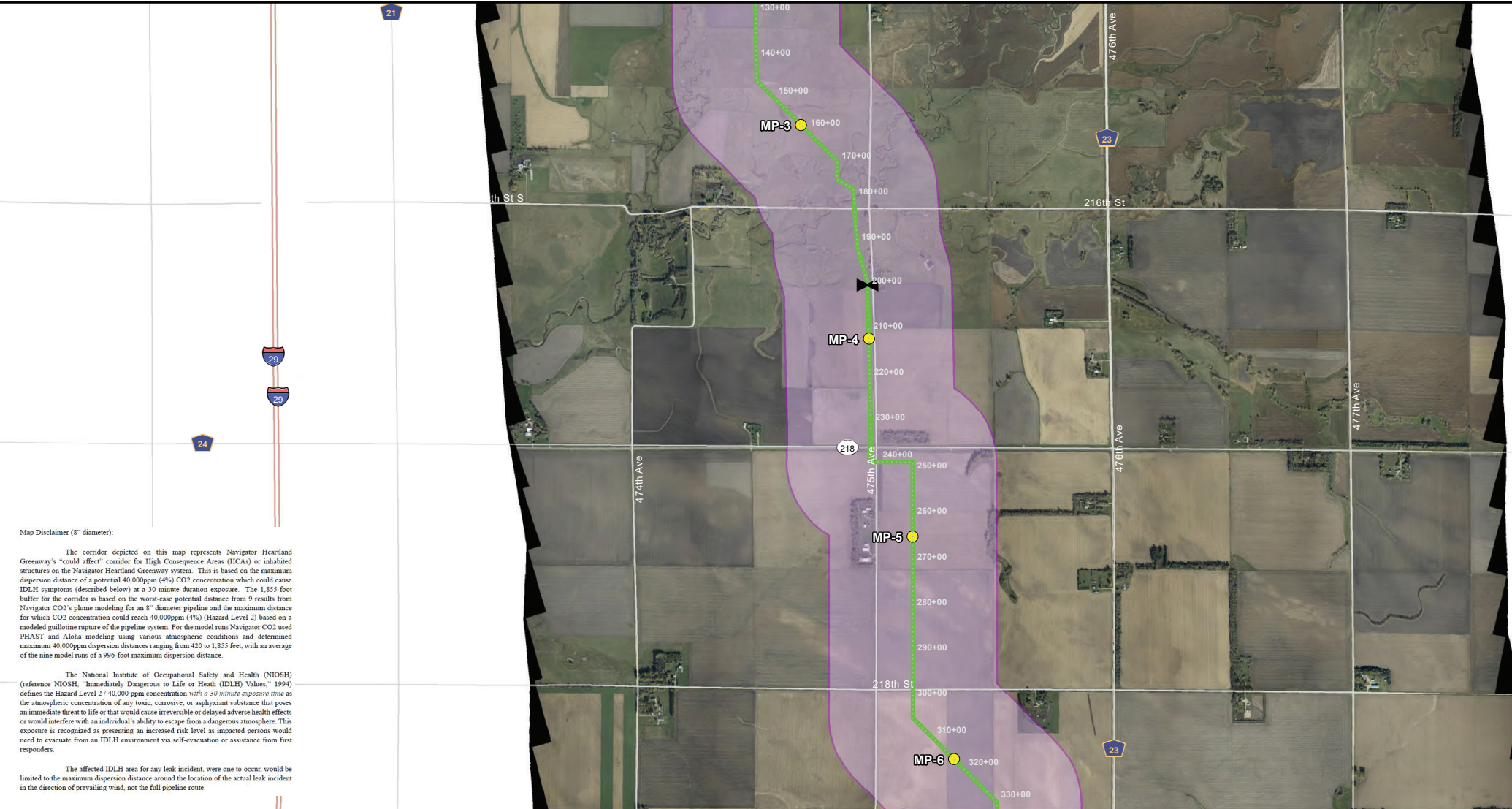
Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

LIABILITY. ACCURACY. INTEGRITY.



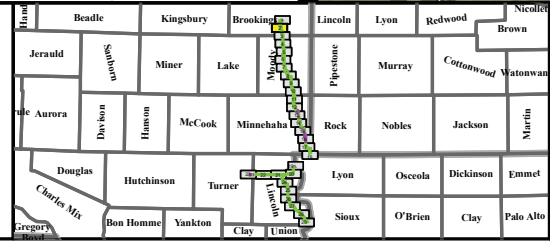
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Legend	
Heartland Greenway	Population
Proposed Centerline	National HPA
HCA Buffers	National OPA
IDLH Buffer (1,855')	States
Stations	Counties
Mile Posts	Interstates/High...
Valve	Roads
	Railroads




Brookings County, South Dakota

Heartland Greenway System


South Dakota HCA Impact Spread 6 Aurora Lateral 8"
Exhibit: 2 of 29

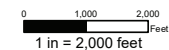


HEARTLAND GREENWAY




Navigator CO₂

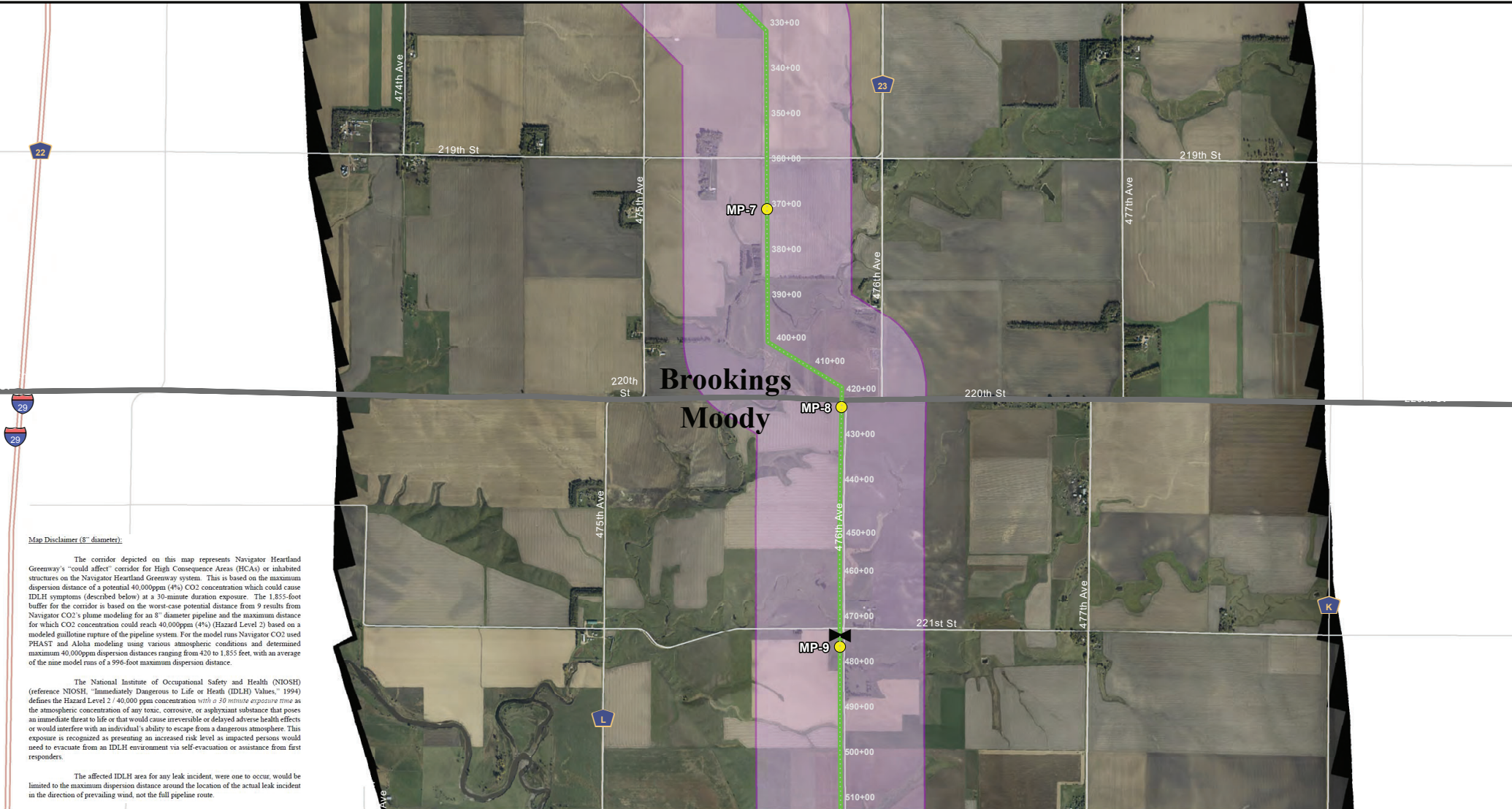




1 in = 2,000 feet



TOPOGRAPHIC
LOYALTY. INTEGRITY. LEGACY.



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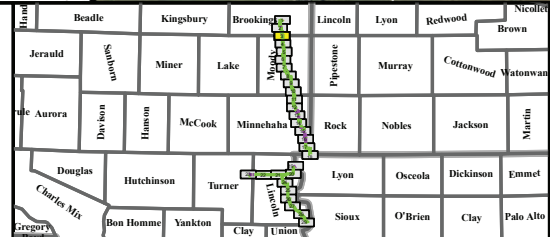
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/Highways
- Roads
- Railroads



Brookings & Moody County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 3 of 29

HEARTLAND GREENWAY

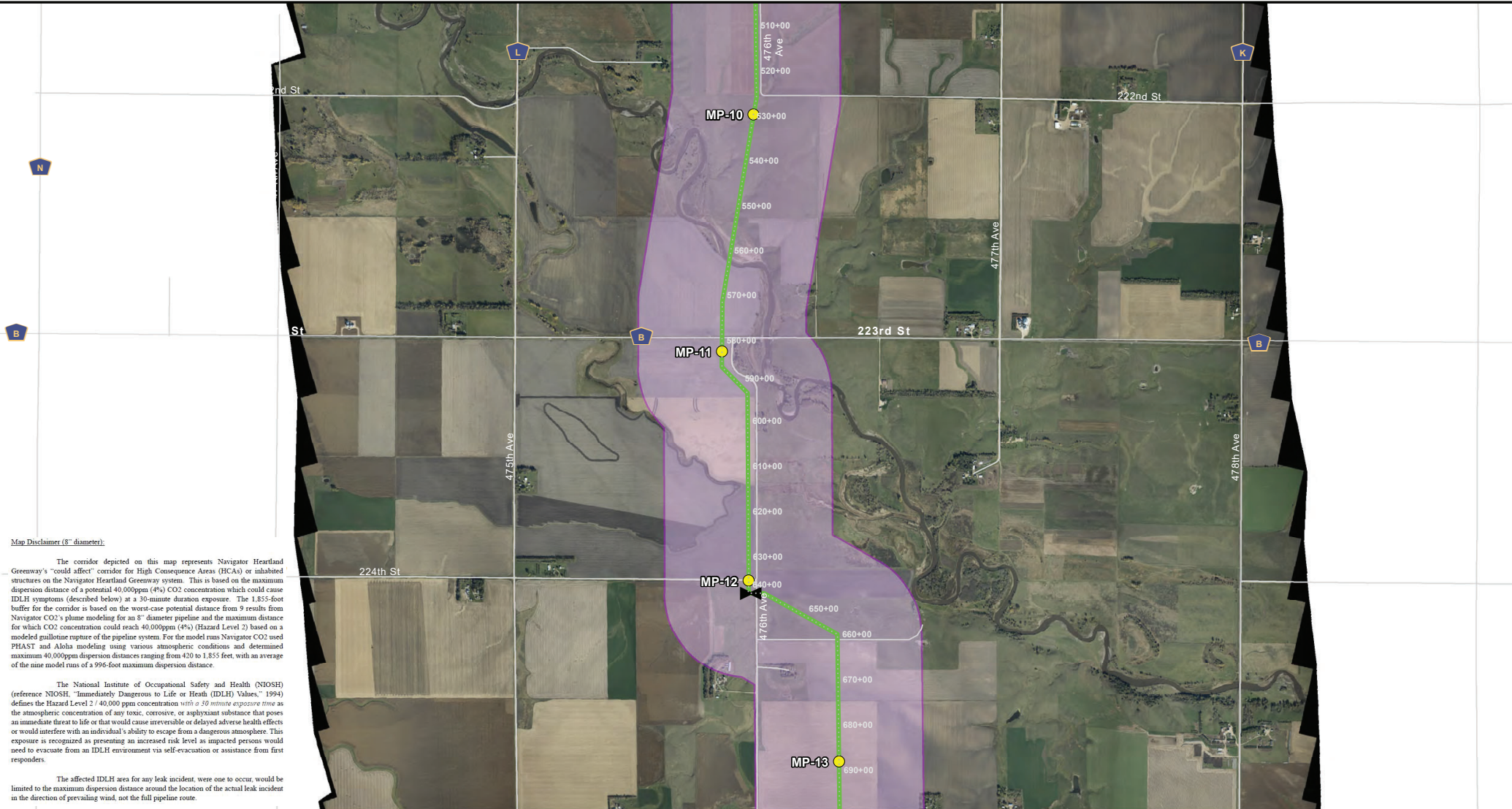
Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

LIABILITY - MERCHANTABILITY - LEGALITY



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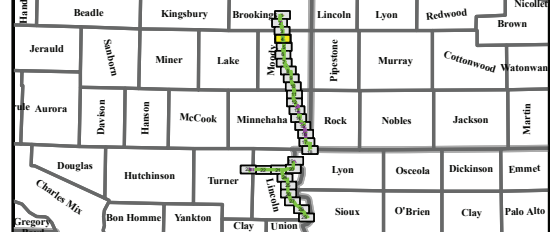
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/Highways
- Roads
- Railroads




Moody County, South Dakota


Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"


Exhibit: 4 of 29



HEARTLAND GREENWAY




Navigator CO₂

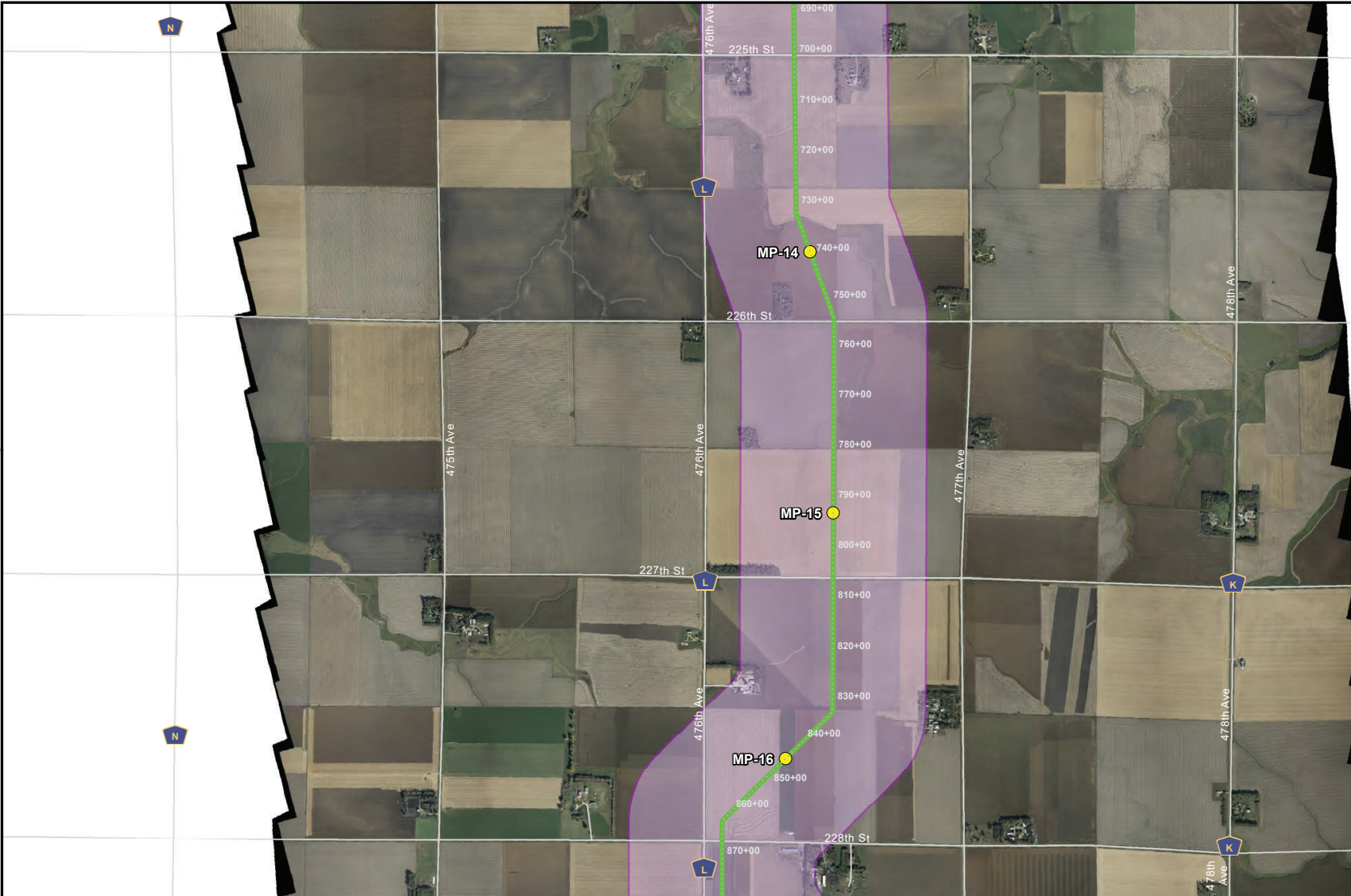


0 1,000 2,000 Feet

1 in = 2,000 feet



TOPOGRAPHIC
LOYALTY. ACCURACY. LEGACY.



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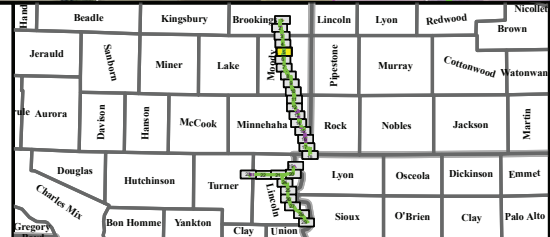
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/Highways
- Roads
- Railroads



Moody County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 5 of 29

HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. INTEGRITY.



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Legend	
Heartland Greenway Proposed Centerline	Population
HCA Buffers	National HPA
IDLH Buffer (1,855')	National OPA
Stations	States
Mile Posts	Counties
Valve	Interstates/High...
	Roads
	Railroads

Moody County, South Dakota

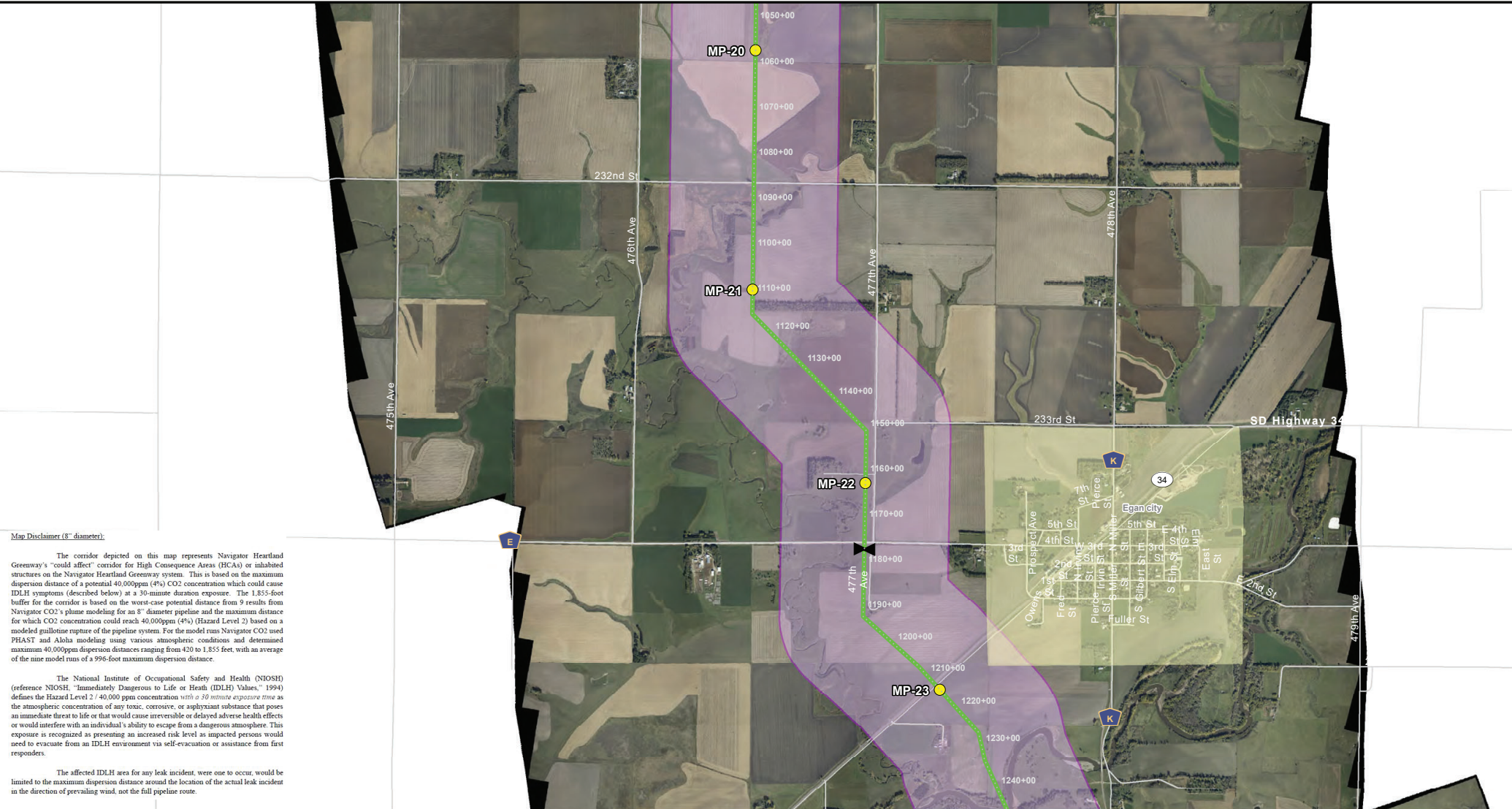
Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 6 of 29

Navigator CO₂

0 1,000 2,000 Feet
1 in = 2,000 feet



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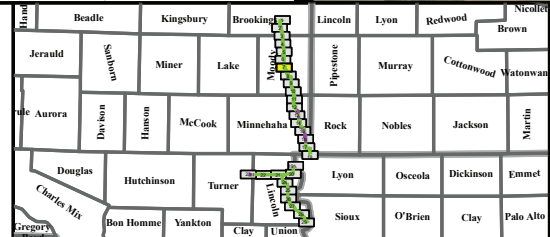
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Moody County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 7 of 29

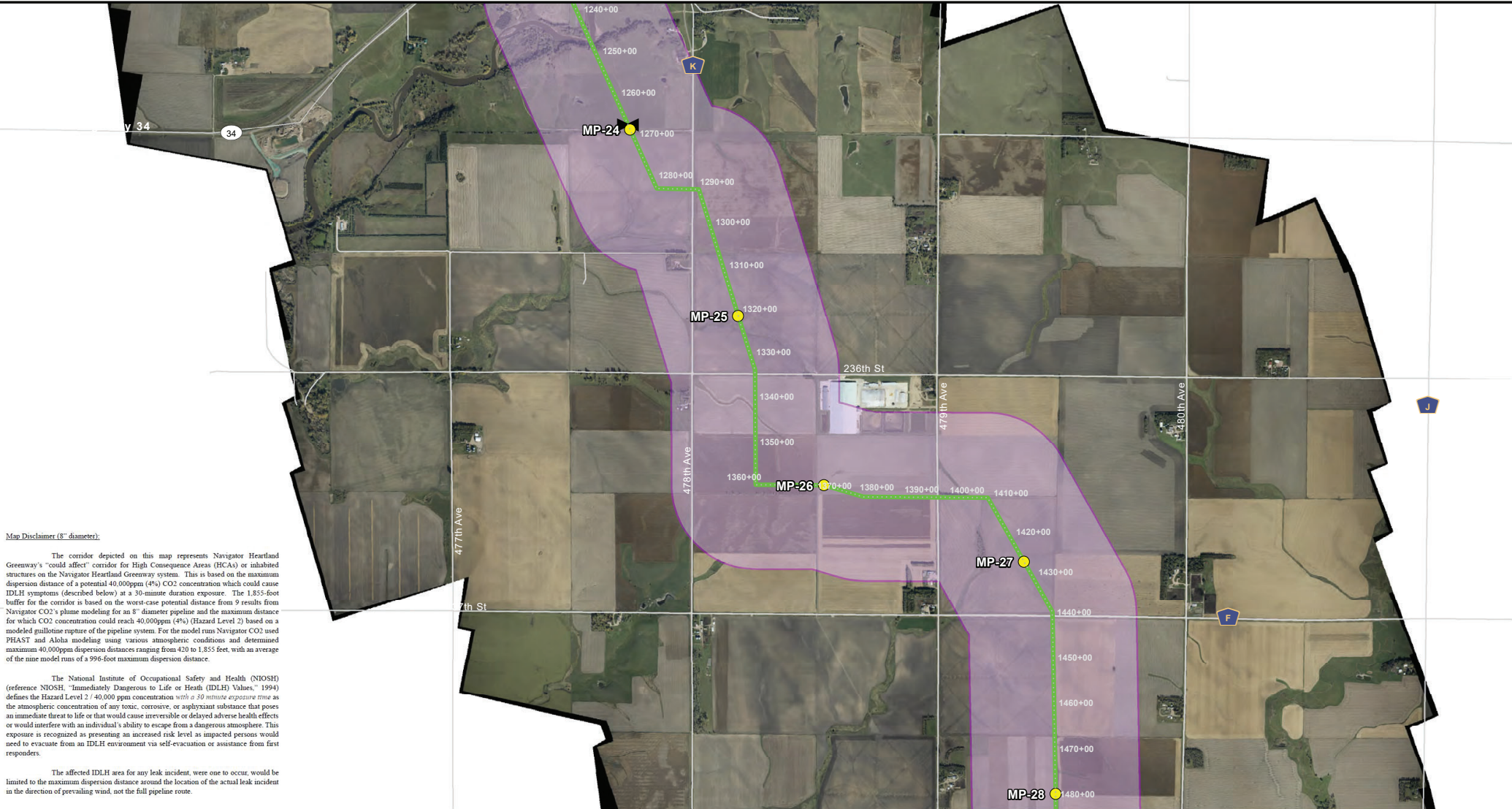
HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC
LIQUIDITY. ACCURACY. LEGACY.



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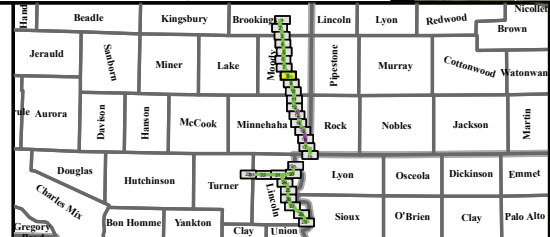
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Legend

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- Proposed Centerline
- HCA Buffers**
- IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population


- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads




Moody County, South Dakota

Heartland Greenway System


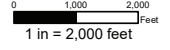
South Dakota HCA Impact Spread 6 Aurora Lateral 8"
Exhibit: 8 of 29




HEARTLAND GREENWAY



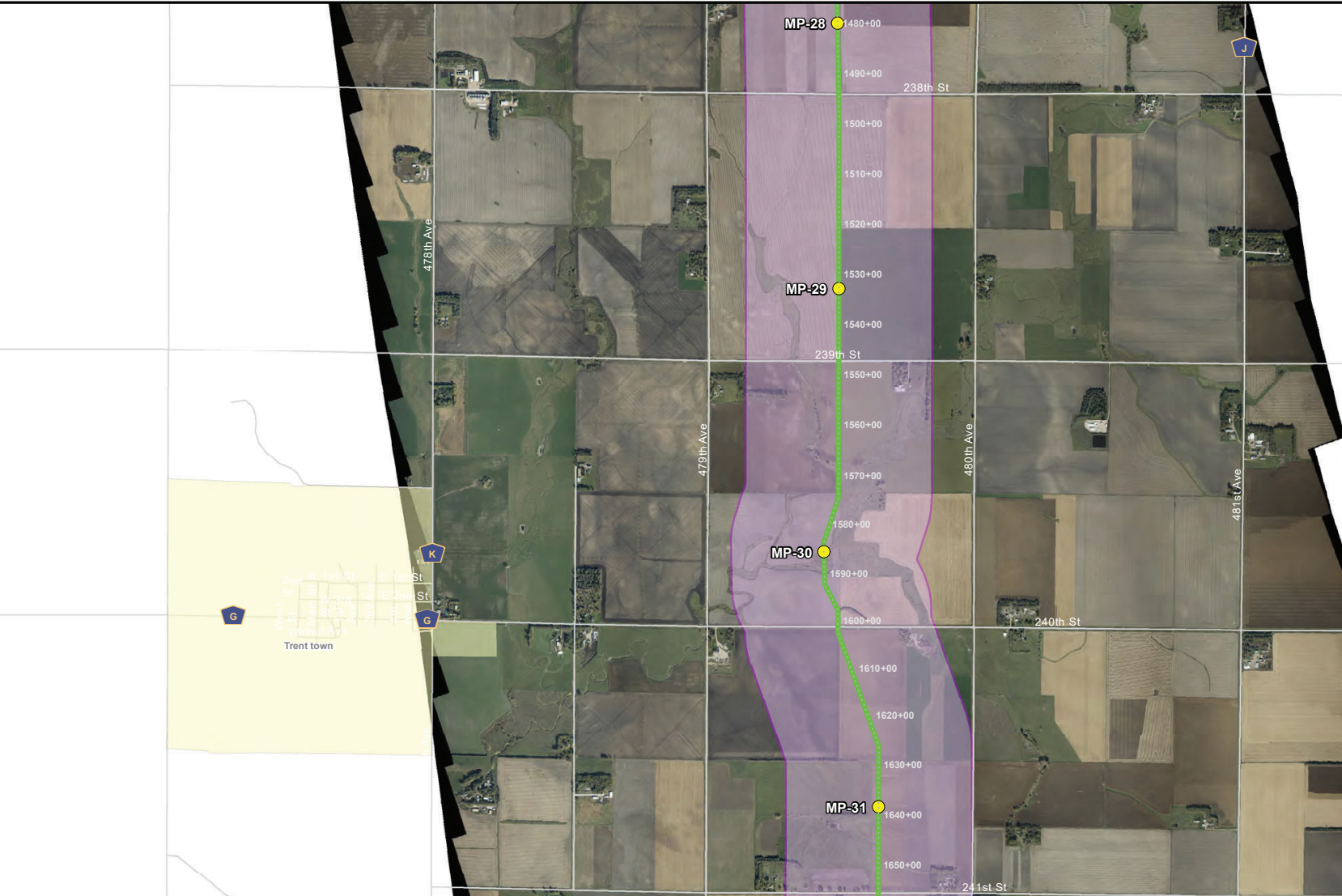
Navigator CO₂

1 in = 2,000 feet



TOPOGRAPHIC
QUALITY. ACCURACY. LEGACY.



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Legend	
Heartland Greenway	Population
Proposed Centerline	National HPA
HCA Buffers	National OPA
IDLH Buffer (1,855')	States
Stations	Counties
Mile Posts	Interstates/High...
Valve	Roads
	Railroads

Moody County, South Dakota


Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"


Exhibit: 9 of 29

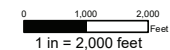


HEARTLAND GREENWAY




Navigator CO₂

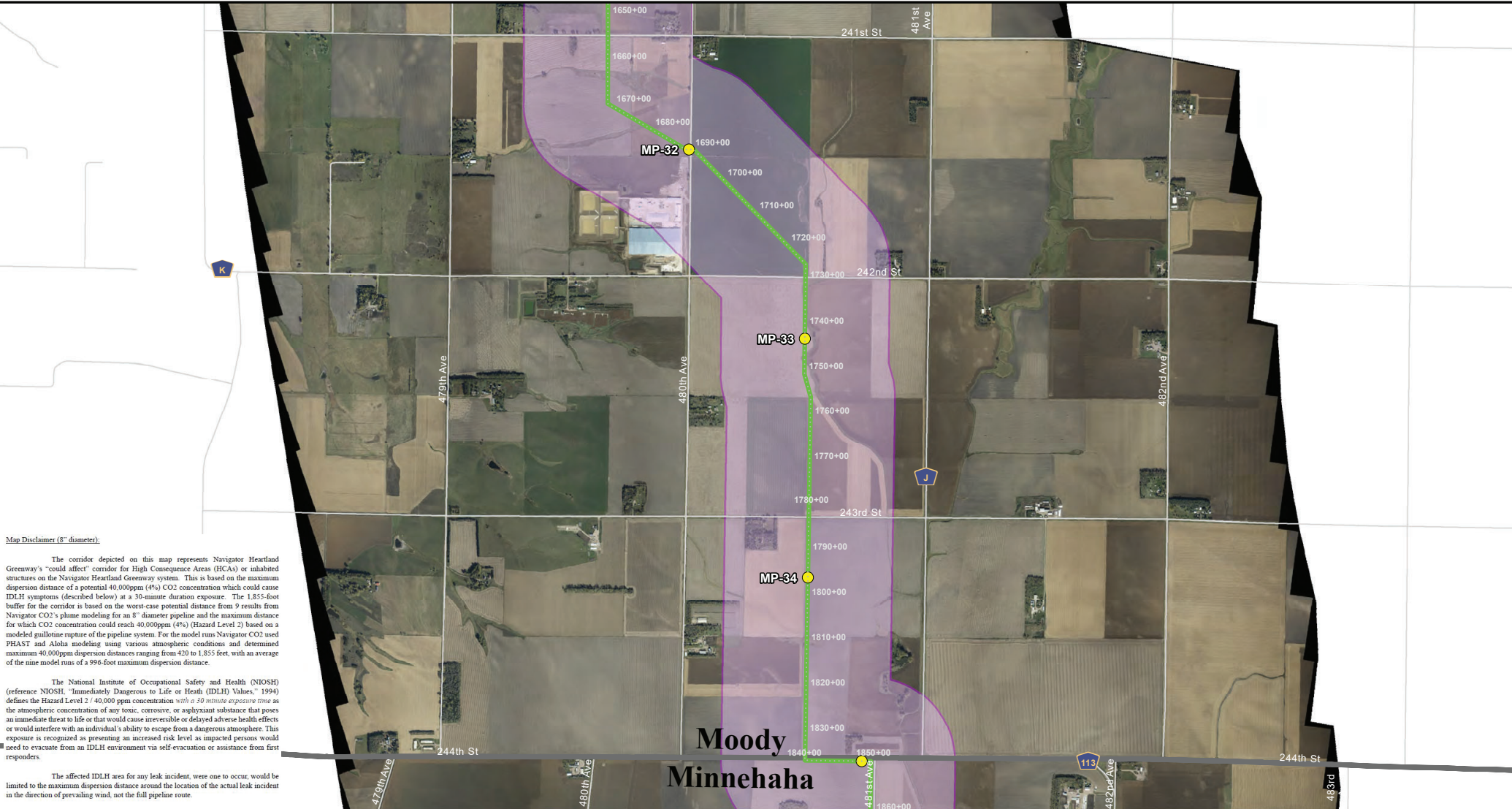




1 in = 2,000 feet



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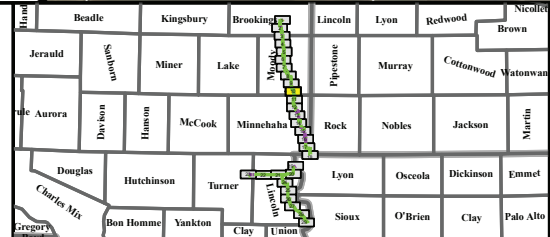
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Moody County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 10 of 29

HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. LEGACY.



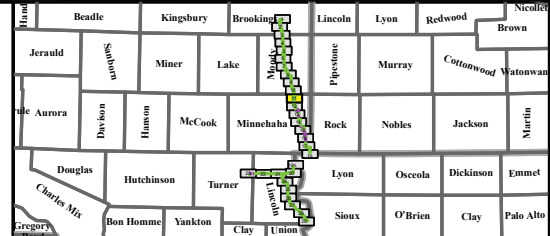
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Legend	
Heartland Greenway	Population
Proposed Centerline	National HPA
HCA Buffers	National OPA
IDLH Buffer (1,855')	States
Stations	Counties
Mile Posts	Interstates/High...
Valve	Roads
	Railroads




Minnehaha County, South Dakota


Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"


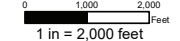

Exhibit: 11 of 29



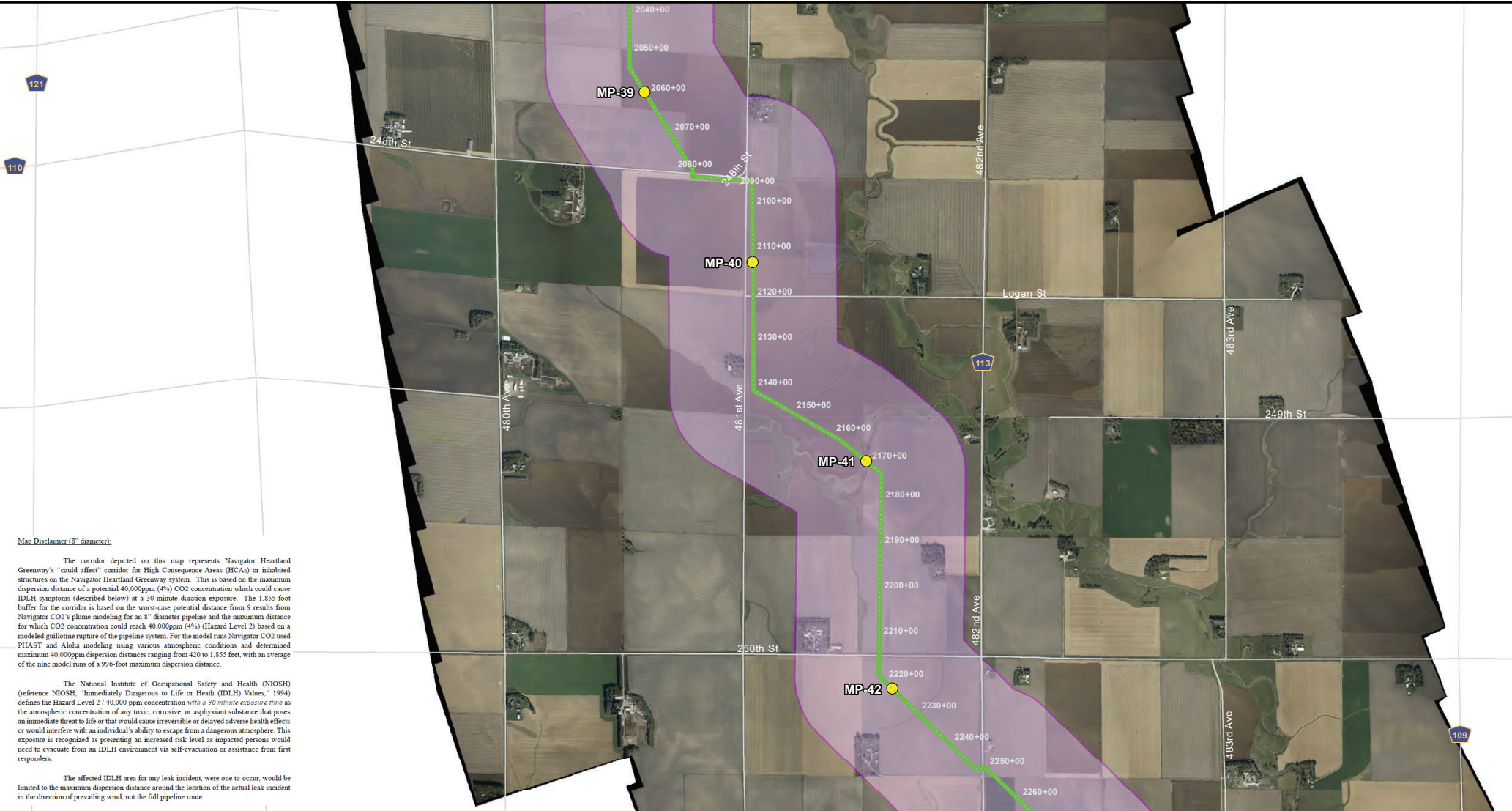
HEARTLAND GREENWAY



Navigator CO₂

TOPOGRAPHIC
LIABILITY - ACCURACY - LEGALITY



Map Disclaimer (8" diameter).

The corridor depicted on this map represents Navigator Heartland Greenway's "could affect" corridor for High Consequence Areas (HCAs) or inhabited structures on the Navigator Heartland Greenway system. This is based on the maximum dispersion distance of a potential 40,000ppm (4%) CO2 concentration which could cause IDLH symptoms (described below) at a 30-minute duration exposure. The 1,855-foot buffer for the corridor is based on the worst-case potential distance from 9 results from Navigator CO2's plume modeling for an 8" diameter pipeline and the maximum distance for which CO2 concentration could reach 40,000ppm (4%) (Hazard Level 2) based on a modeled guillotine rupture of the pipeline system. For the model runs Navigator CO2 used PHEAST and Aloha modeling using various atmospheric conditions and determined maximum 40,000ppm dispersion distances ranging from 420 to 1,855 feet, with an average of the nine model runs of a 996-foot maximum dispersion distance.

The National Institute of Occupational Safety and Health (NIOSH) (reference NIOSH, "Immediately Dangerous to Life or Health (IDLH) Values," 1994) defines the Hazard Level 2 / 40,000 ppm concentration with a 30 minute exposure time as the atmospheric concentration of any toxic, corrosive, or asphyxiant substance that poses an immediate threat to life or that would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere. This exposure is recognized as presenting an increased risk level as impacted persons would need to evacuate from an IDLH environment via self-evacuation or assistance from first responders.

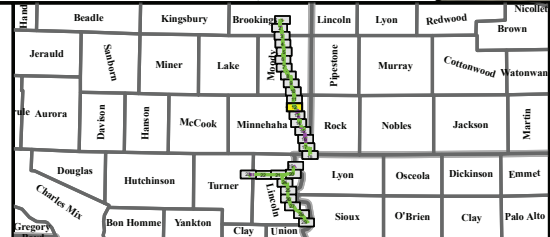
The affected IDLH area for any leak incident, were one to occur, would be limited to the maximum dispersion distance around the location of the actual leak incident in the direction of prevailing wind, not the full pipeline route.

Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Minnehaha County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 12 of 29

HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

LIABILITY. ACCURACY. LEGACY.



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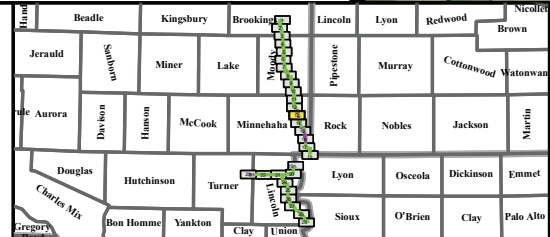
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Legend

- Heartland Greenway Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Minnehaha County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 13 of 29

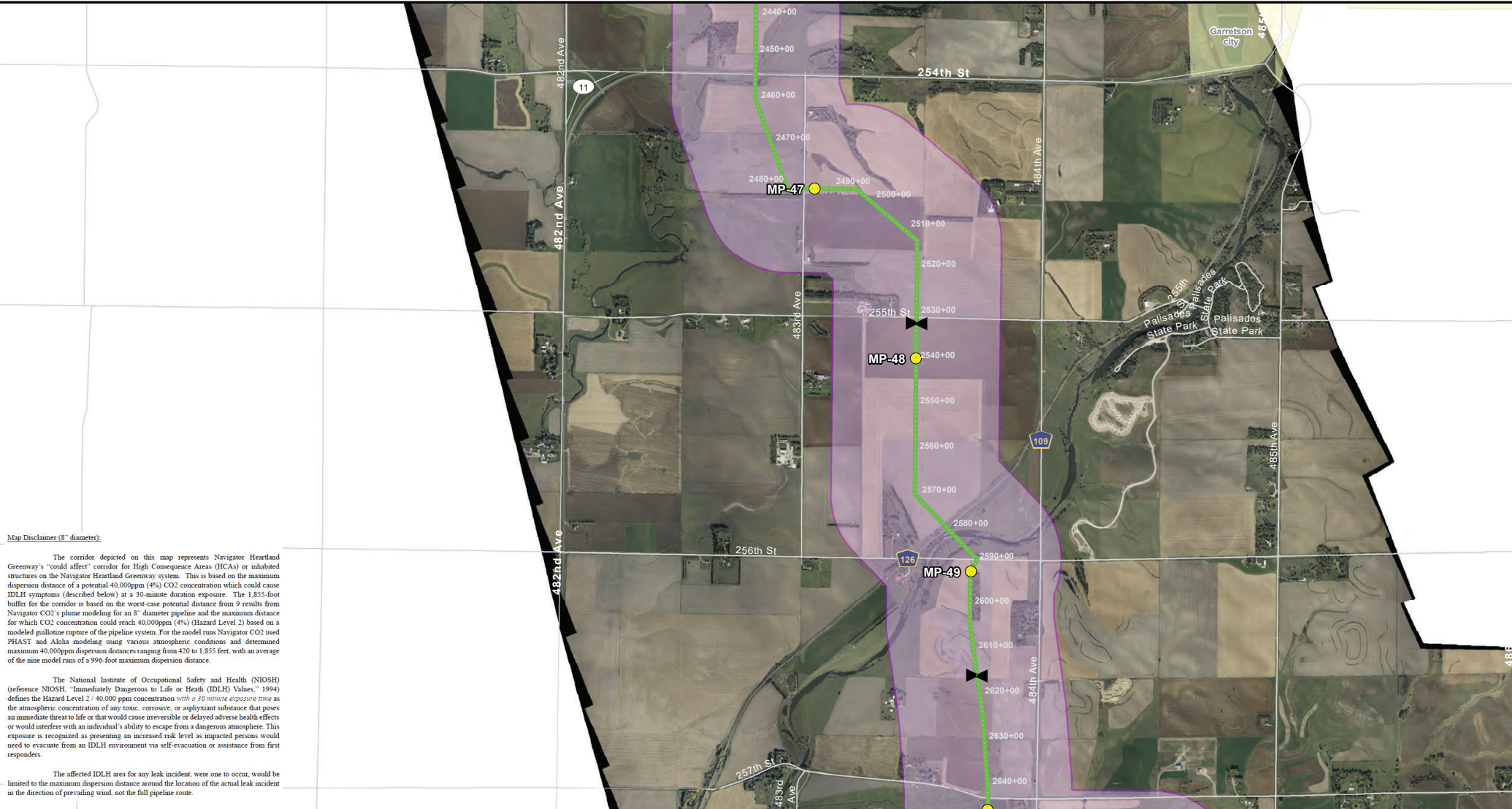
HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC
LIQUIDITY. ACCURACY. LEGACY.



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Legend	
Heartland Greenway	Population
Proposed Centerline	National HPA
HCA Buffers	National OPA
IDLH Buffer (1,855')	States
Stations	Counties
Mile Posts	Interstates/High...
Valve	Roads
	Railroads

Minnehaha County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 14 of 29

HEARTLAND GREENWAY

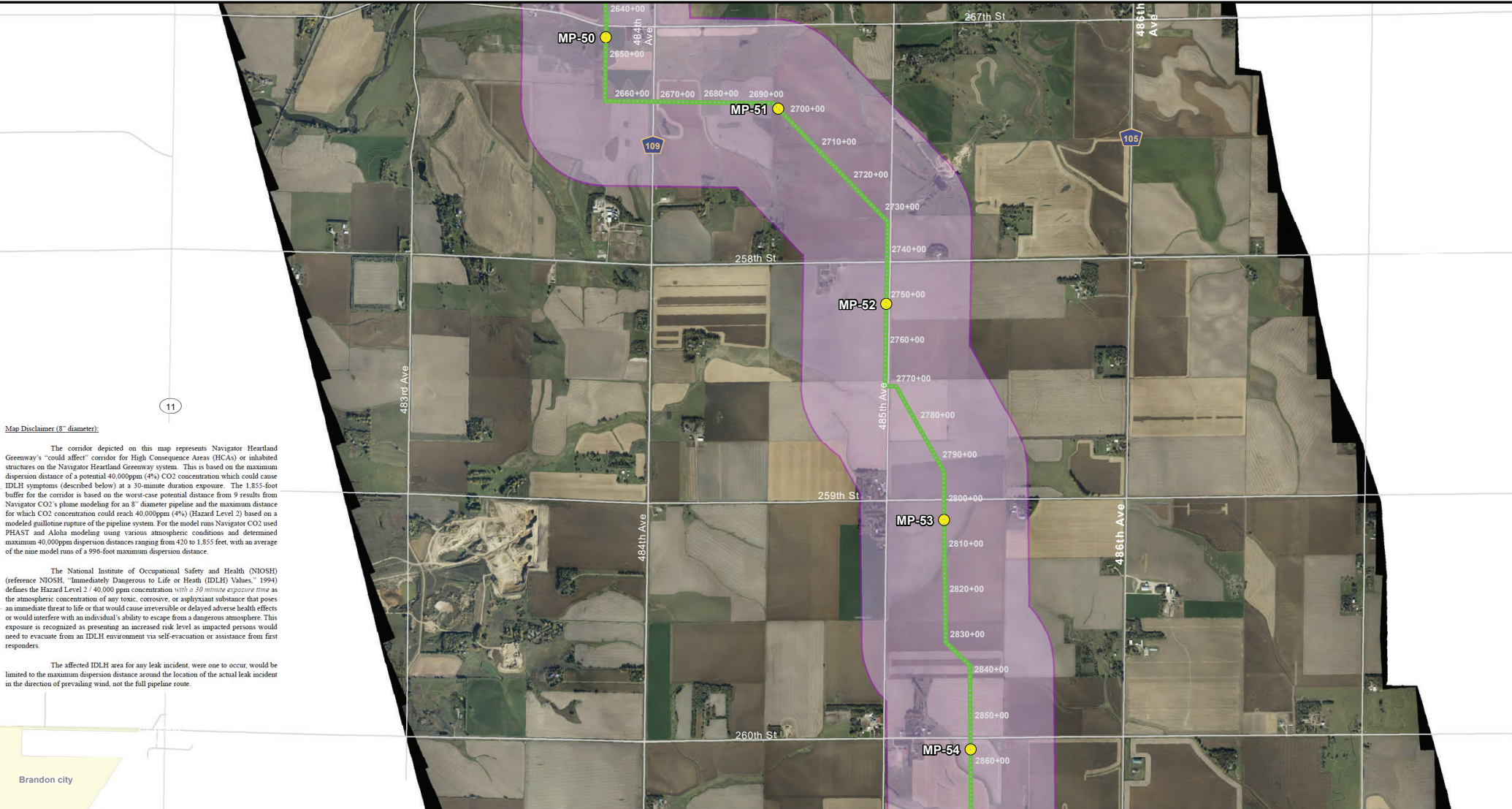
Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. LEGACY.



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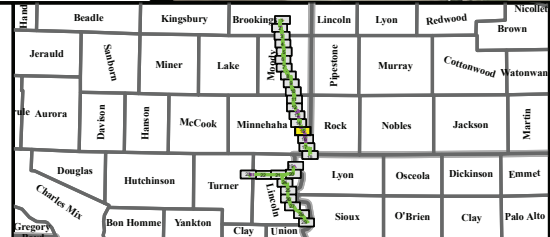
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Minnehaha County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 15 of 29

HEARTLAND GREENWAY

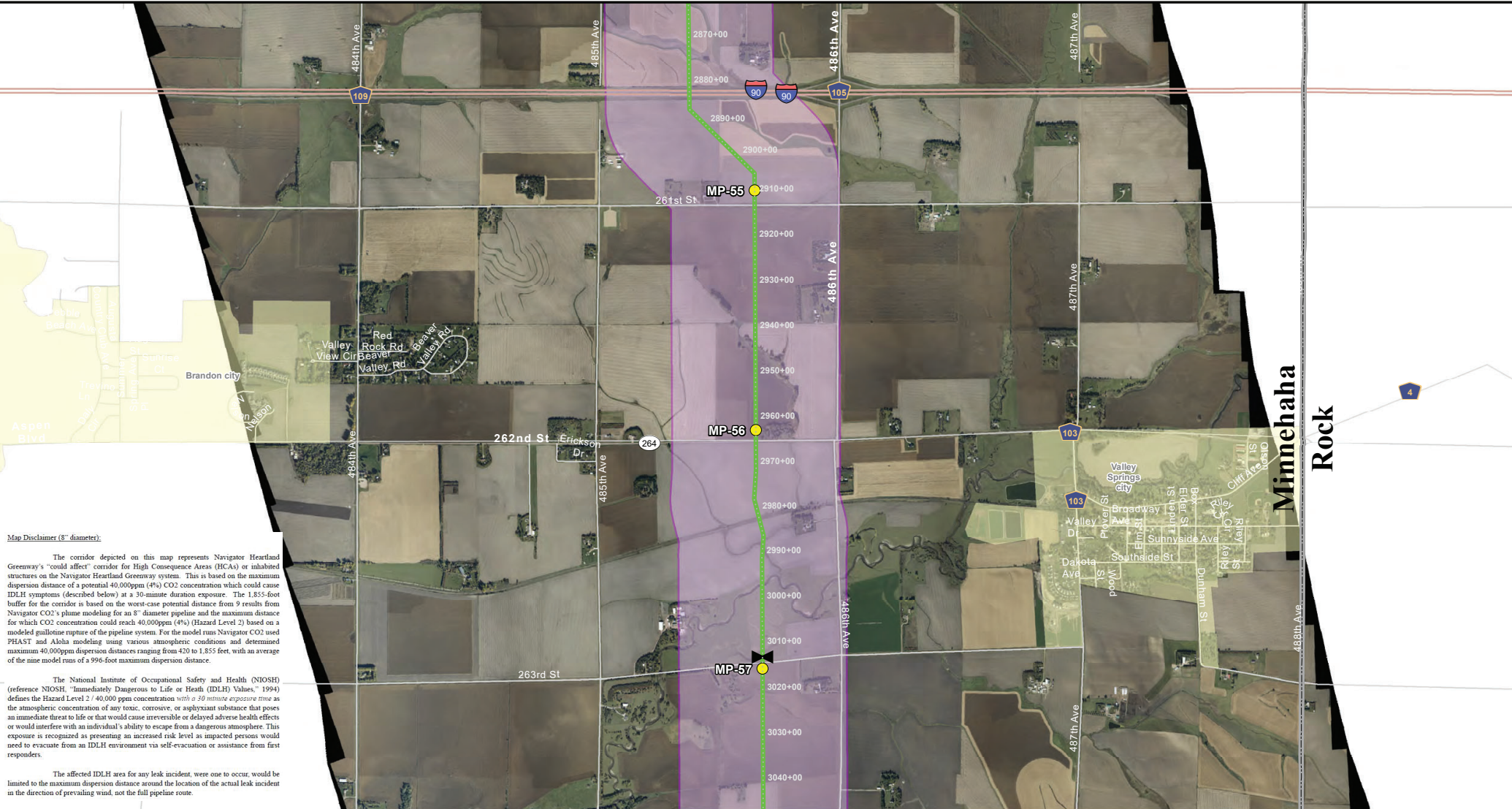
Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. LEGACY.



Map Disclaimer (8" diameter)

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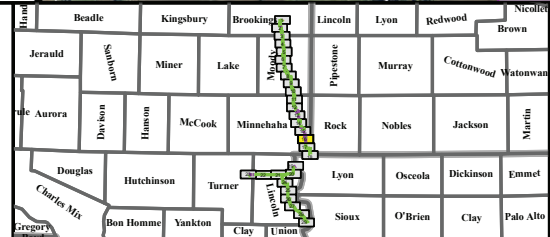
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Minnehaha County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 16 of 29

HEARTLAND GREENWAY

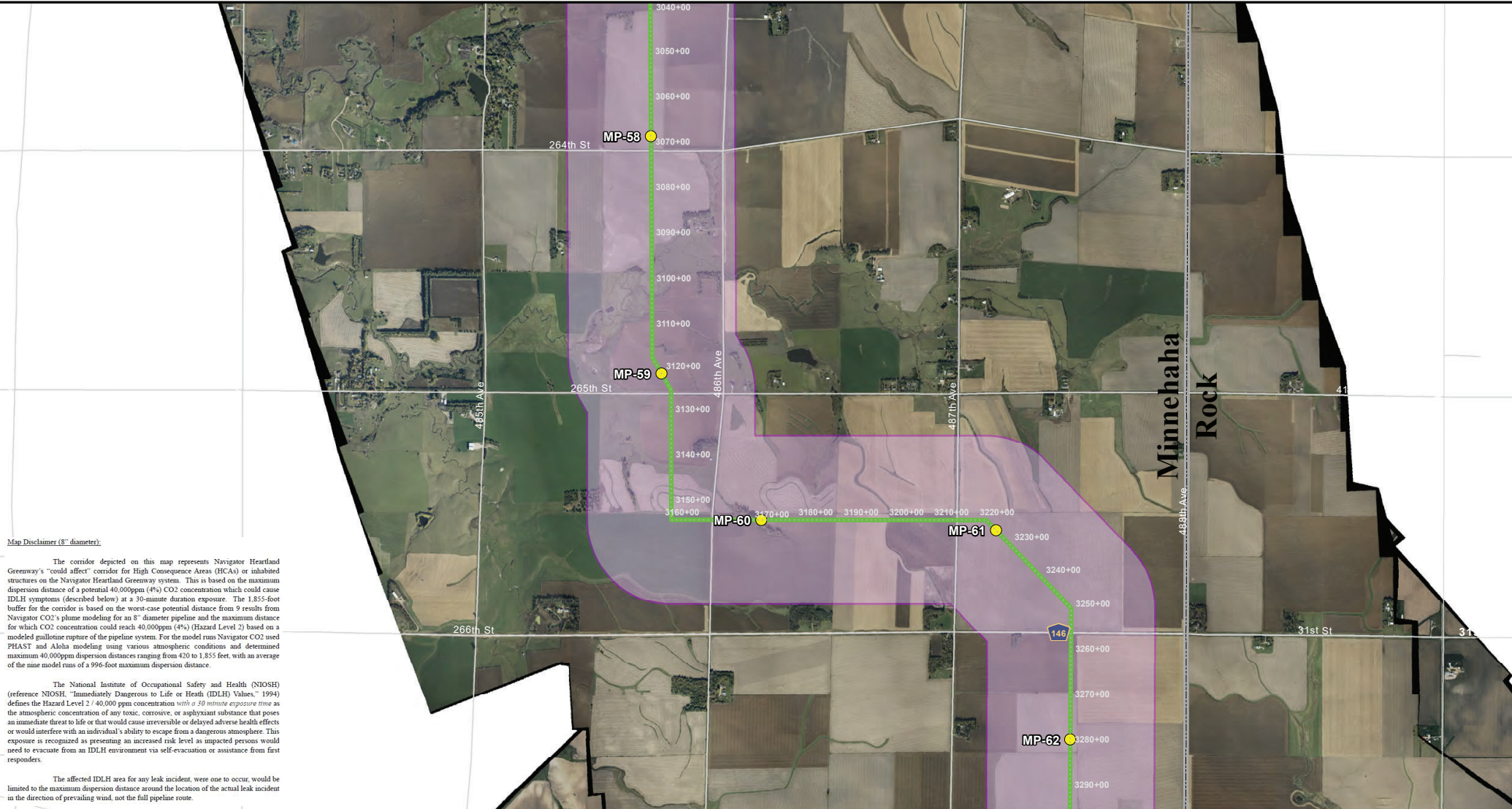
Navigator CO2

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

LIABILITY - MINORITIES - LEGALITY



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Legend	
Heartland Greenway	Population
Proposed Centerline	National HPA
HCA Buffers	National OPA
IDLH Buffer (1,855')	States
Stations	Counties
Mile Posts	Interstates/High...
Valve	Roads
	Railroads

Minnehaha County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 17 of 29

HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. LEGACY.



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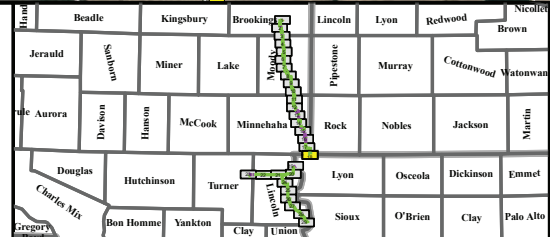
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,855')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/Highways
- Roads
- Railroads



Minnehaha County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6 Aurora Lateral 8"

Exhibit: 18 of 29

HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

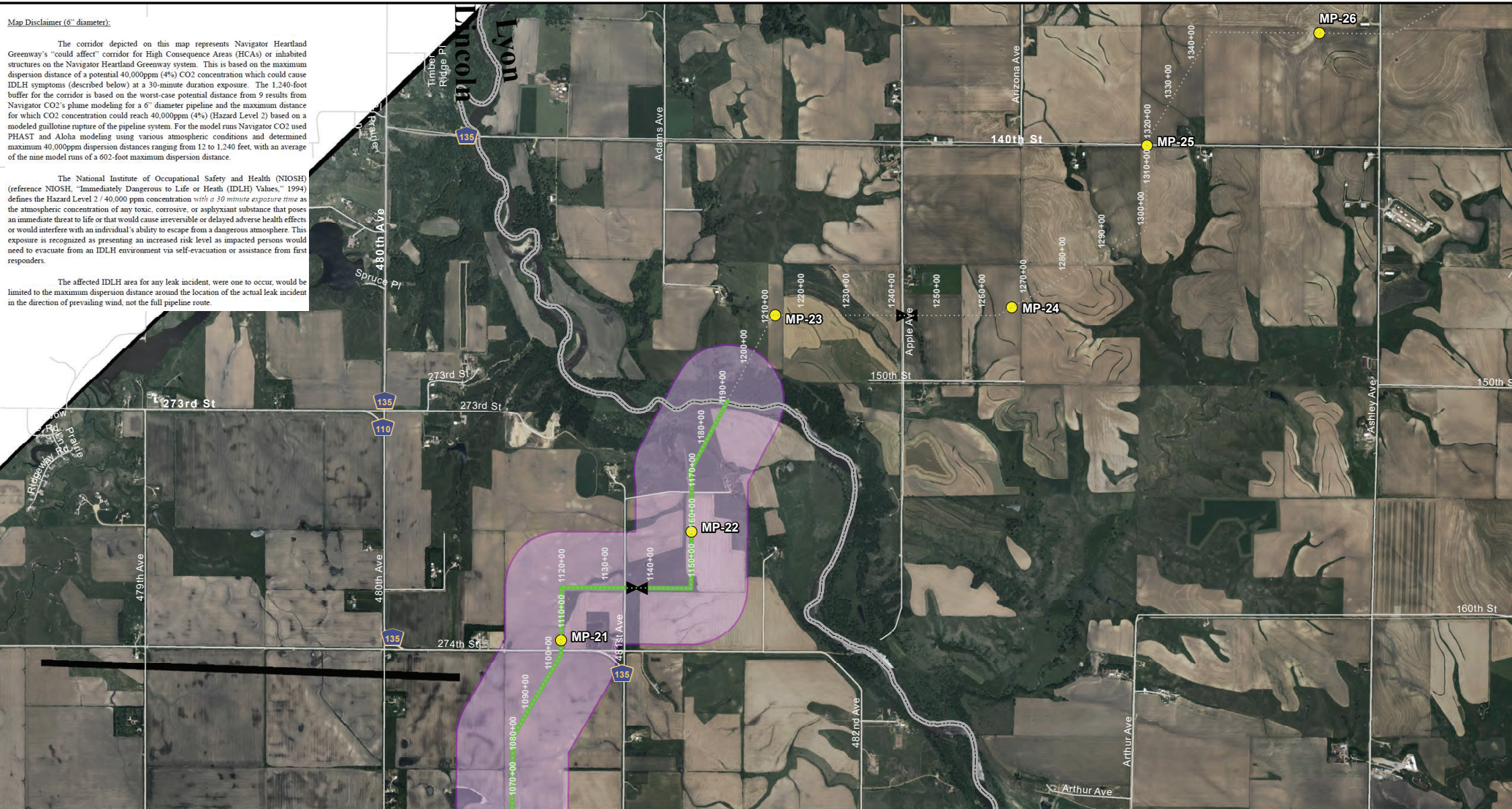
TOPOGRAPHIC
QUALITY. ACCURACY. INTEGRITY.

Map Disclaimer (6" diameter):

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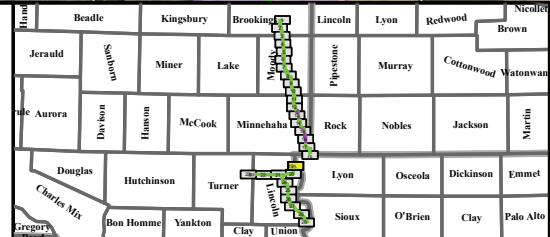
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Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers**
- IDLH Buffer (1,240')
- Stations
- Mile Posts
- Valve
- Population**
- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Lincoln County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6A Chancellor Lateral 6"

Exhibit: 19 of 29

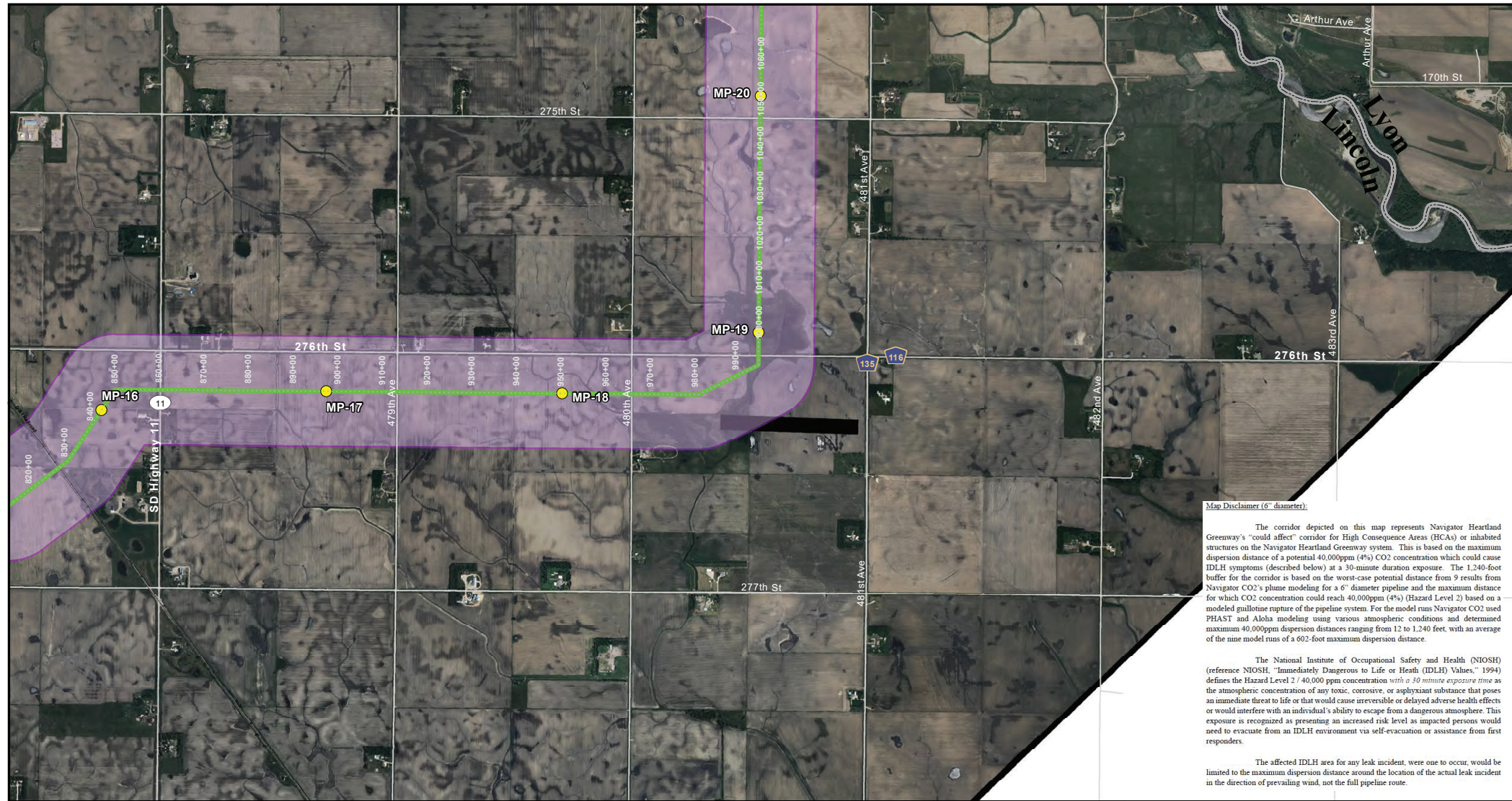
Heartland Greenway

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC
Loyalty. Accuracy. Integrity.



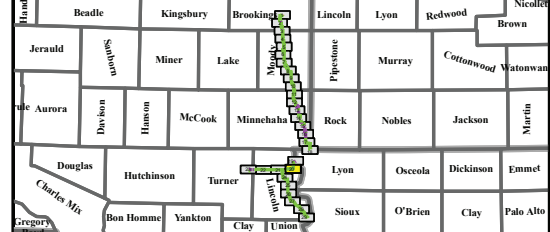
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- Legend**
- Heartland Greenway
 - Proposed Centerline
 - HCA Buffers**
 - IDLH Buffer (1,240')
 - Stations
 - Mile Posts
 - Valve
 - Population**
 - National HPA
 - National OPA
 - States
 - Counties
 - Interstates/High...
 - Roads
 - Railroads




Lincoln County, South Dakota


Heartland Greenway System

South Dakota HCA Impact Spread 6A Chancellor Lateral 6"


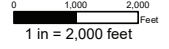

Exhibit: 20 of 29



HEARTLAND GREENWAY



Navigator CO₂

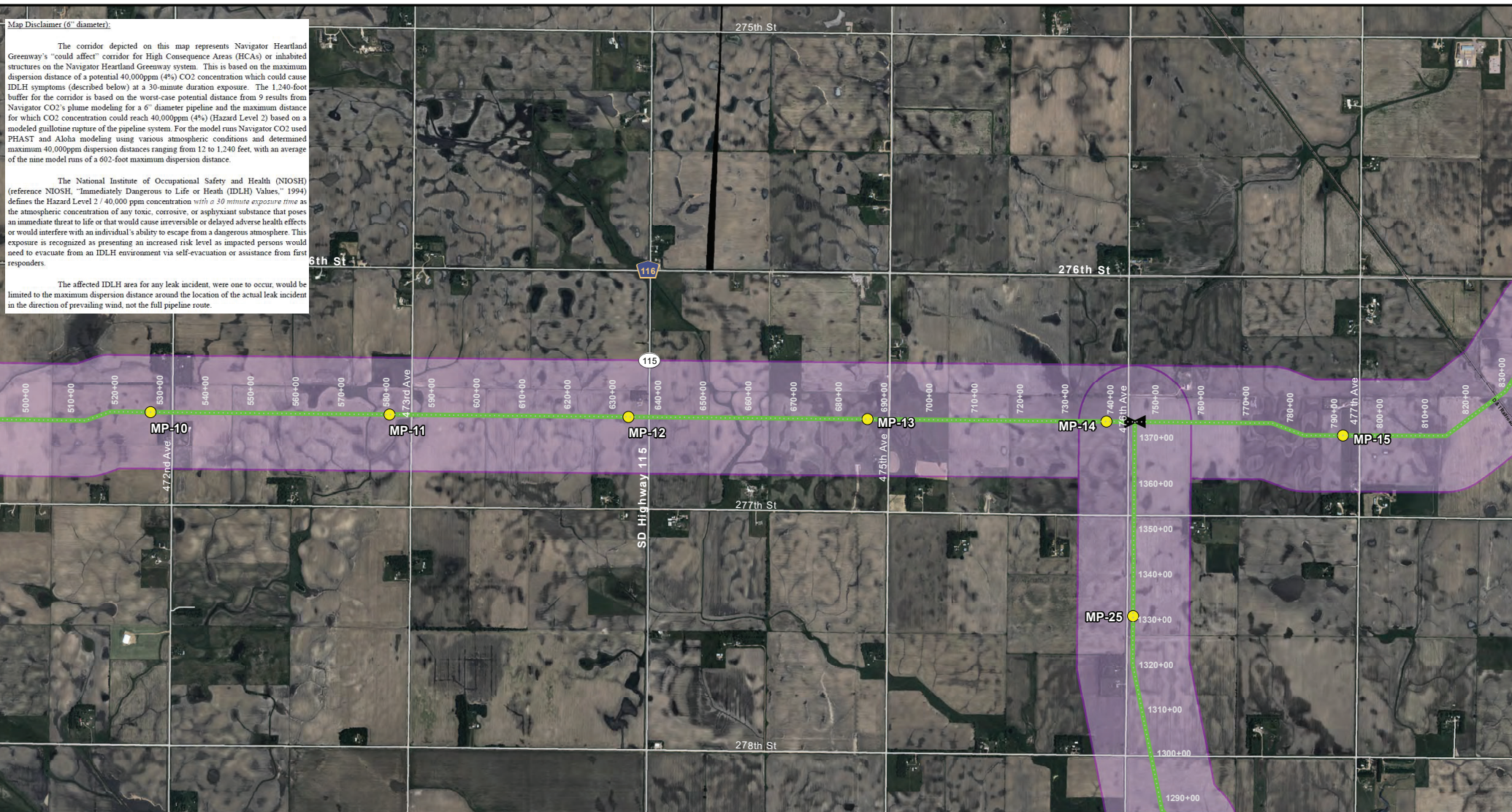
TOPOGRAPHIC
LIABILITY. ACCURACY. LEGACY.

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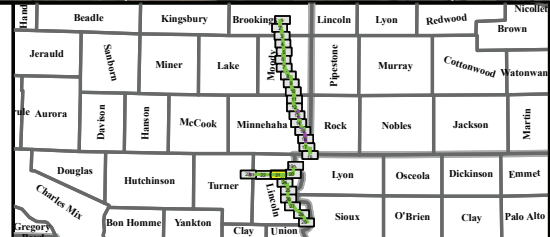


Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,240')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/Highways
- Roads
- Railroads



Lincoln County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6A Chancellor Lateral 6"

Exhibit: 21 of 29

HEARTLAND GREENWAY

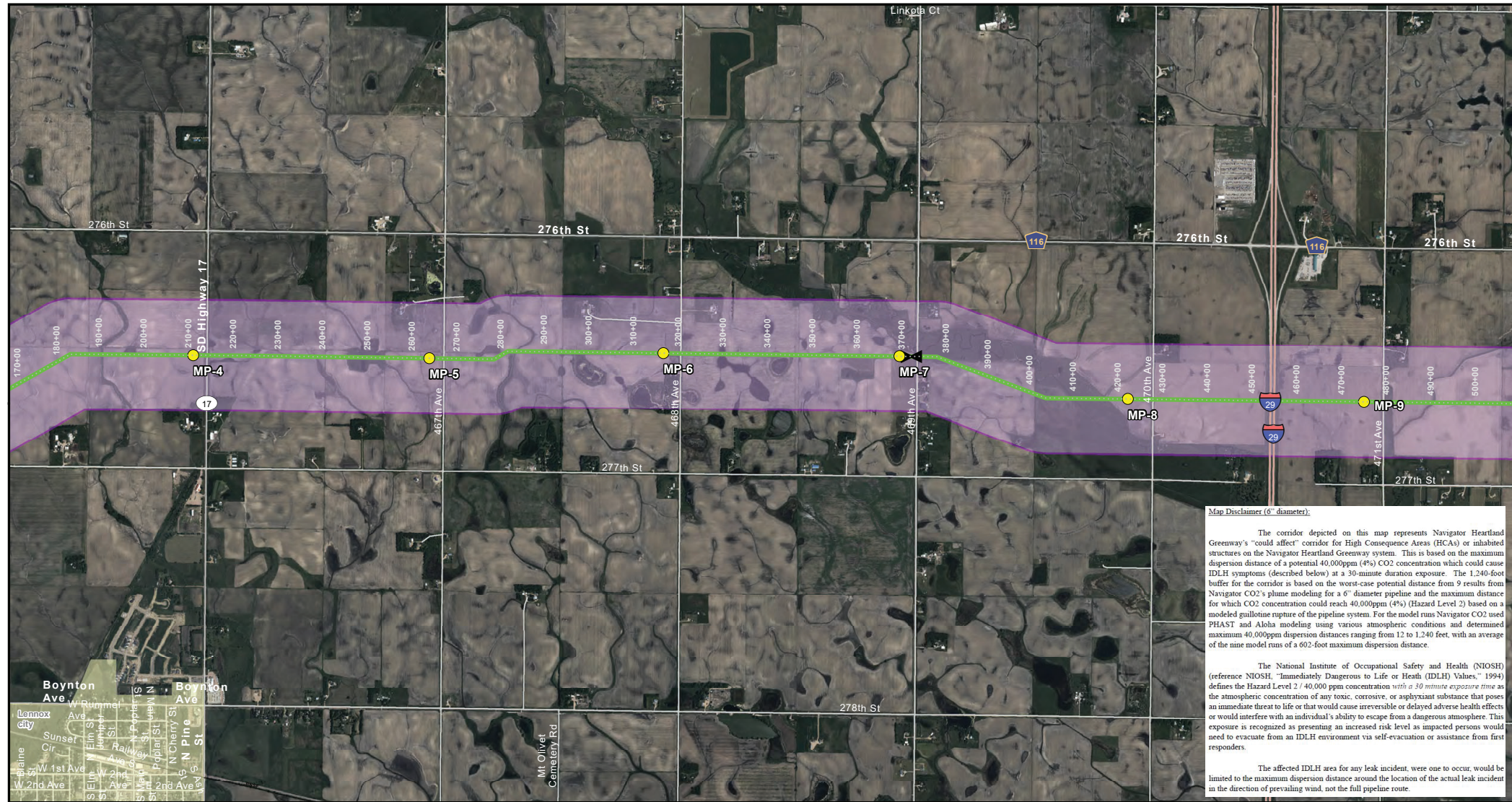
Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. INTEGRITY.



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<p>Legend</p> <ul style="list-style-type: none"> Heartland Greenway Proposed Centerline HCA Buffers IDLH Buffer (1,240') Stations Mile Posts Valve 	<p>Population</p> <ul style="list-style-type: none"> National HPA National OPA States Counties Interstates/High... Roads Railroads 	
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Lincoln County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6A Chancellor Lateral 6"

Exhibit: 22 of 29

HEARTLAND GREENWAY

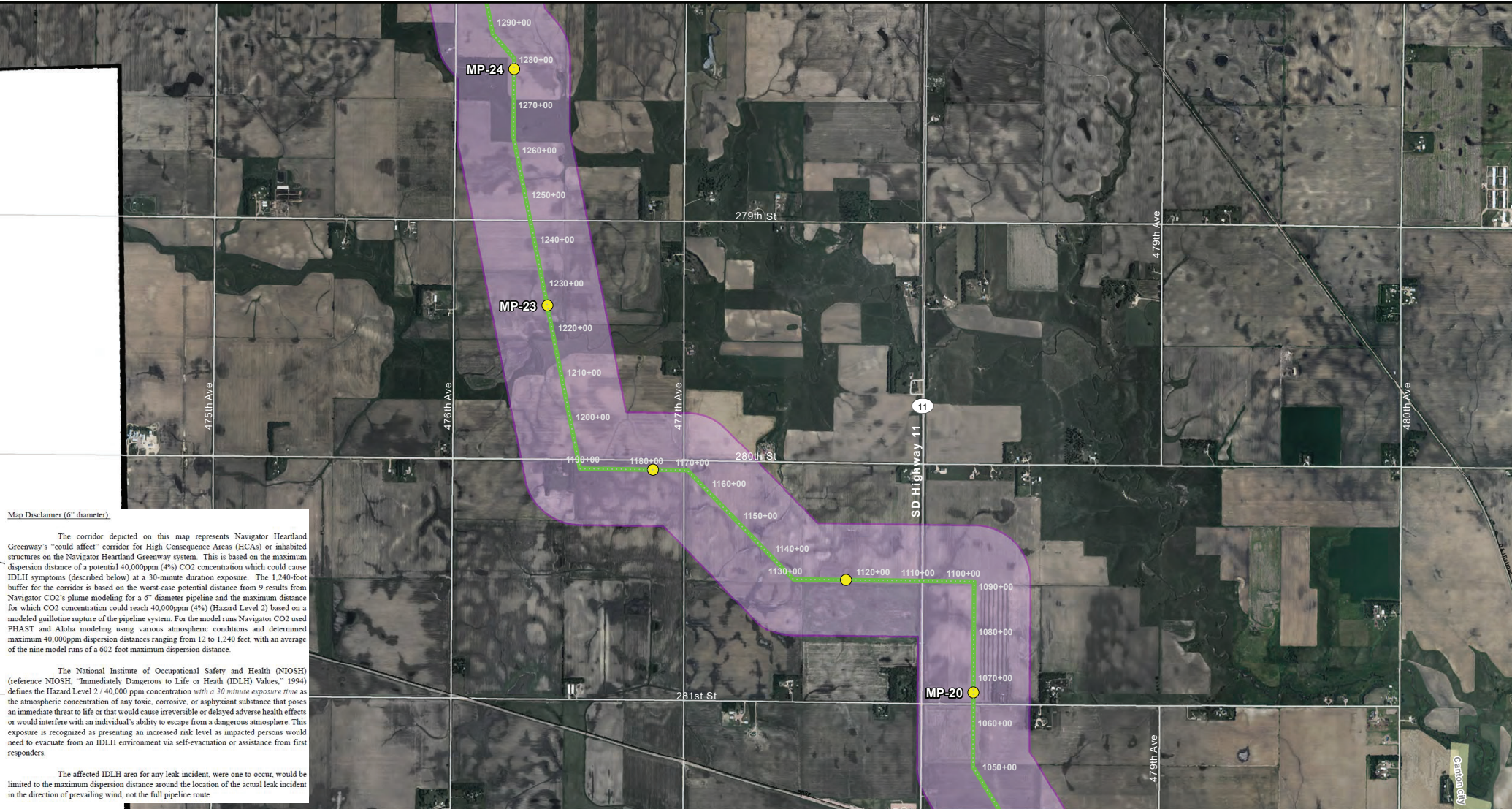
Navigator CO₂

N
E
S
W

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC
LITHO • ALUMINUM • STAINLESS



Map Disclaimer (6" diameter):

The corridor depicted on this map represents Navigator Heartland Greenway's "could affect" corridor for High Consequence Areas (HCAs) or inhabited structures on the Navigator Heartland Greenway system. This is based on the maximum dispersion distance of a potential 40,000ppm (4%) CO₂ concentration which could cause IDLH symptoms (described below) at a 30-minute duration exposure. The 1,240-foot buffer for the corridor is based on the worst-case potential distance from 9 results from Navigator CO₂'s plume modeling for a 6" diameter pipeline and the maximum distance for which CO₂ concentration could reach 40,000ppm (4%) (Hazard Level 2) based on a modeled gullotine rupture of the pipeline system. For the model runs Navigator CO₂ used PHAST and Aloha modeling using various atmospheric conditions and determined maximum 40,000ppm dispersion distances ranging from 12 to 1,240 feet, with an average of the nine model runs of a 602-foot maximum dispersion distance.

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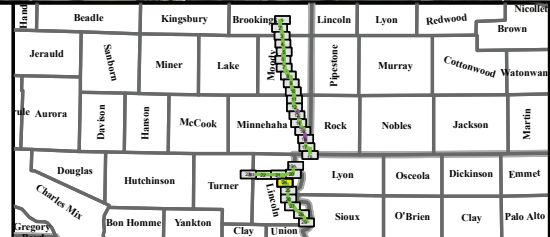
The affected IDLH area for any leak incident, were one to occur, would be limited to the maximum dispersion distance around the location of the actual leak incident in the direction of prevailing wind, not the full pipeline route.

Legend

- Heartland Greenway
- Proposed Centerline
- HCA Buffers
 - IDLH Buffer (1,240')
- Stations
- Mile Posts
- Valve

Population

- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Lincoln County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6A Hudson Lateral 6"

Exhibit: 24 of 29

Heartland Greenway

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. LEGACY.



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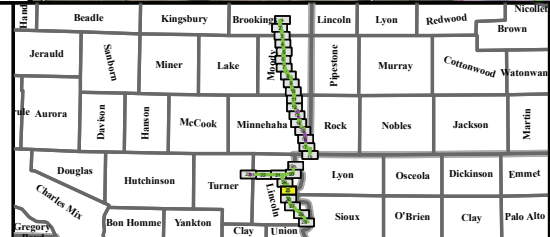
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Legend

- Heartland Greenway
- Proposed Centerline
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 - IDLH Buffer (1,240')
- Stations
- Mile Posts
- Valve

Population

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- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads



Lincoln County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6A Hudson Lateral 6"

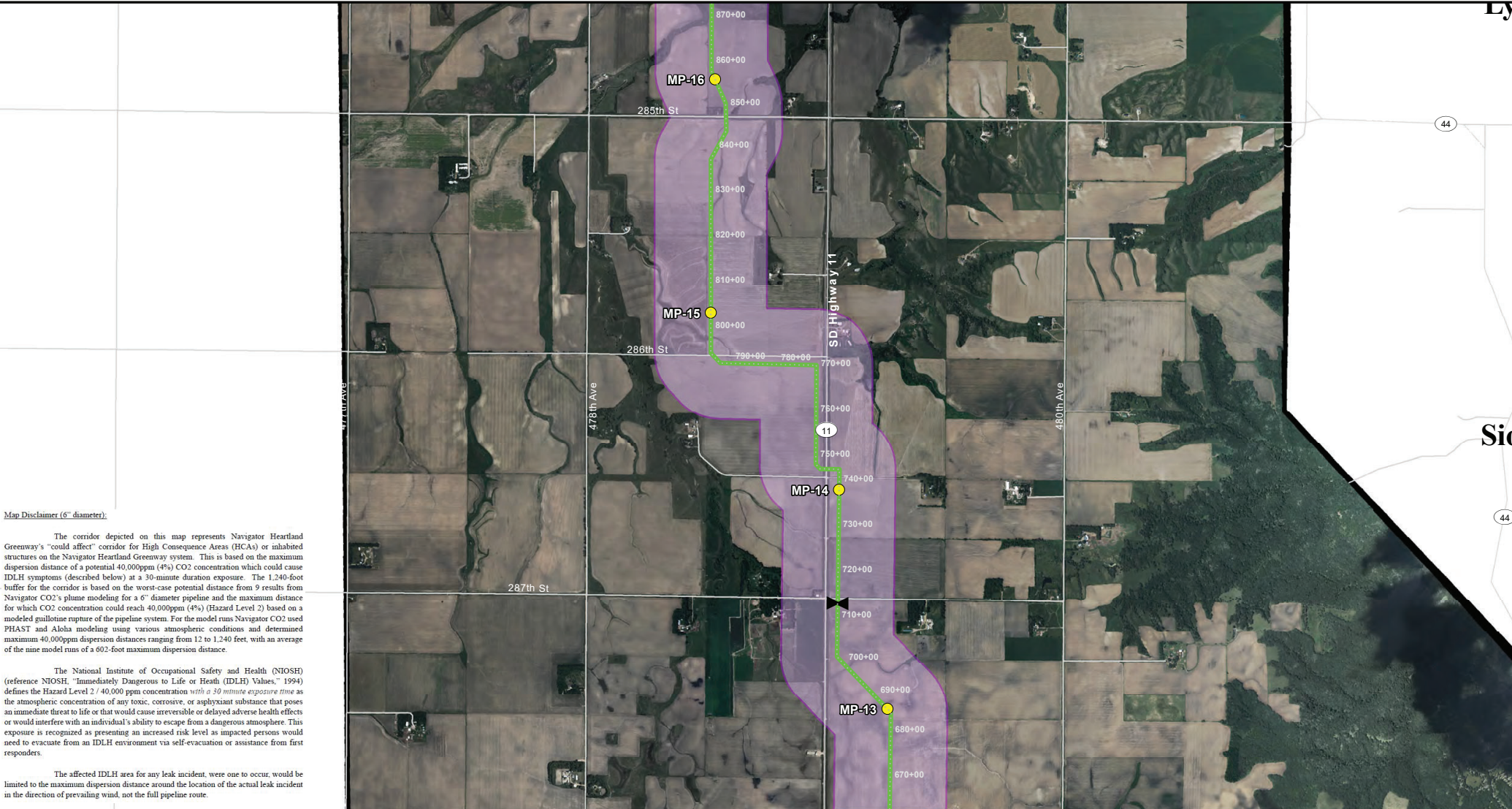
Exhibit: 25 of 29

HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet
1 in = 2,000 feet

TOPOGRAPHIC
QUALITY. ACCURACY. INTEGRITY.



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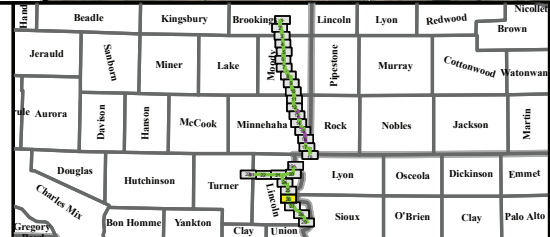
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Legend

- Heartland Greenway
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- Stations
- Mile Posts
- Valve

Population


- National HPA
- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads




Lincoln County, South Dakota

Heartland Greenway System


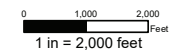

South Dakota HCA Impact Spread 6A Hudson Lateral 6"
Exhibit: 26 of 29

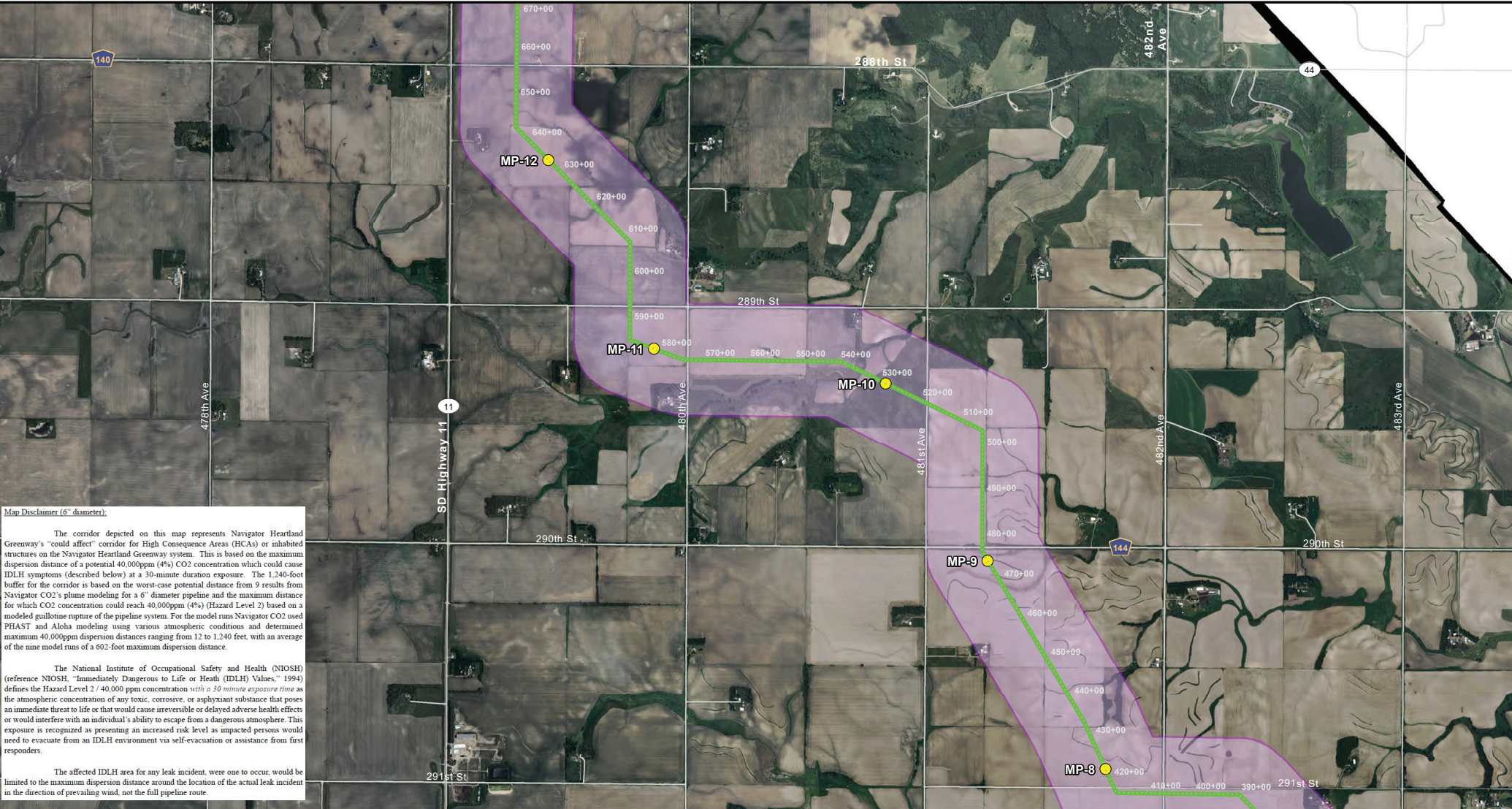


HEARTLAND GREENWAY



Navigator CO₂



Map Disclaimer (6" diameter):

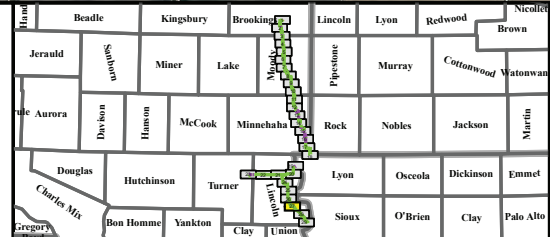
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Legend


- Heartland Greenway
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- HCA Buffers**
- IDLH Buffer (1,240')
- Stations
- Mile Posts
- Valve
- Population**
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- National OPA
- States
- Counties
- Interstates/High...
- Roads
- Railroads




Lincoln County, South Dakota

Heartland Greenway System


South Dakota HCA Impact Spread 6A Hudson Lateral 6"
Exhibit: 27 of 29




HEARTLAND GREENWAY




Navigator CO₂



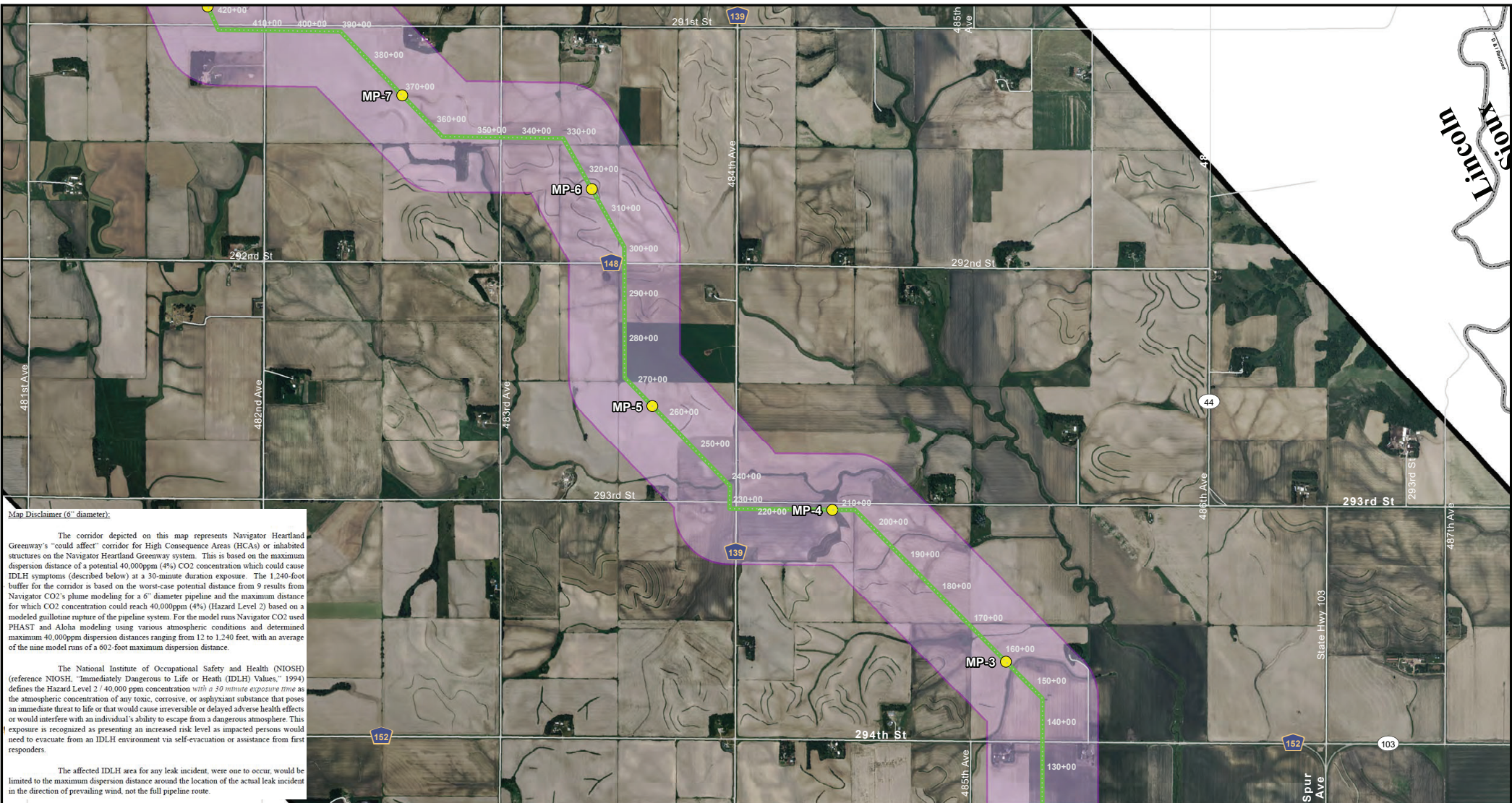
N
E
S
W



0 1,000 2,000 Feet
1 in = 2,000 feet



TOPOGRAPHIC
QUALITY. ACCURACY. INTEGRITY.



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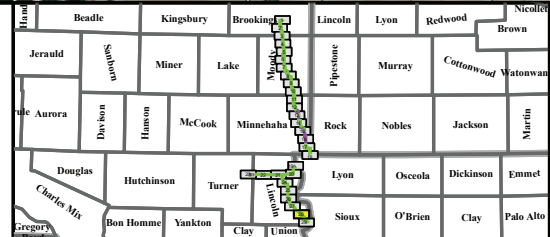
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Legend

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Lincoln County, South Dakota

Heartland Greenway System

South Dakota HCA Impact Spread 6A Hudson Lateral 6"

Exhibit: 28 of 29

HEARTLAND GREENWAY

Navigator CO₂

0 1,000 2,000 Feet

1 in = 2,000 feet

TOPOGRAPHIC

QUALITY. ACCURACY. INTEGRITY.



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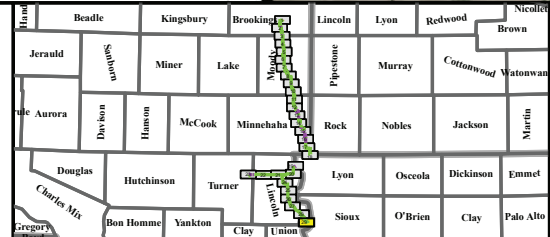
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Lincoln County, South Dakota


Heartland Greenway System

South Dakota HCA Impact Spread 6A Hudson Lateral 6"


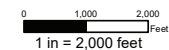

Exhibit: 29 of 29



HEARTLAND GREENWAY



Navigator CO₂

TOPOGRAPHIC
QUALITY. ACCURACY. LEGACY.