

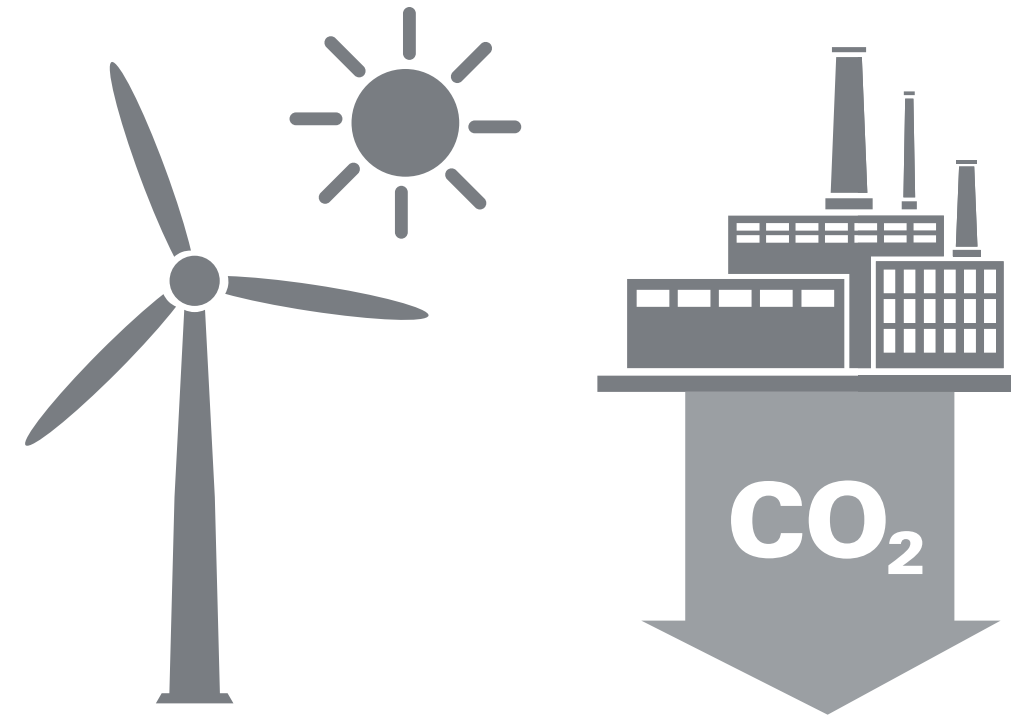


# Hydrogen-Natural Gas Blending Demonstration Project

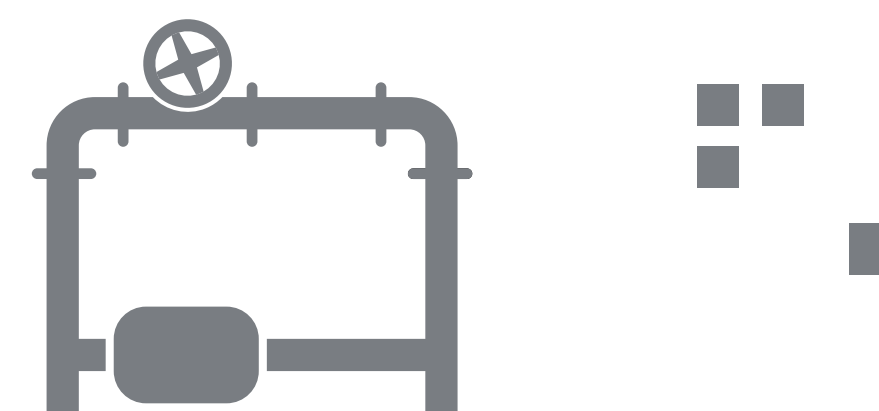
# WELCOME

## Public Open House

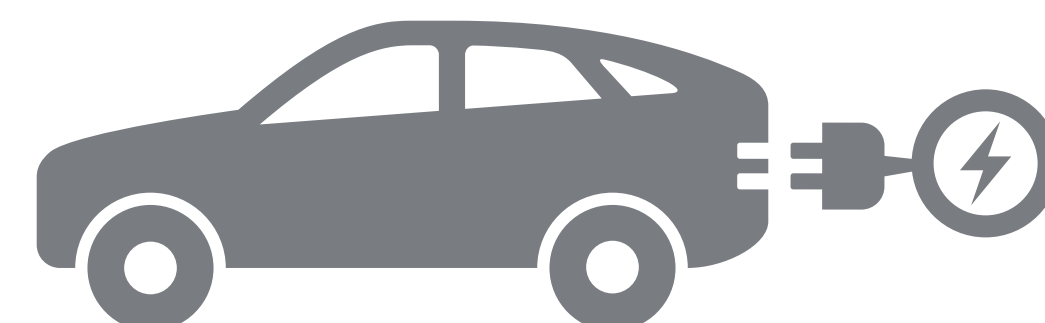
# 2050 NET-ZERO ENERGY GOAL



**100% Carbon-Free Electricity**



**Net-Zero Natural Gas**



**Zero-Carbon Transportation**

# XCEL ENERGY'S CLEAN ENERGY VISION FOR NATURAL GAS

Reduce greenhouse gas emissions 25% by 2030\*, on the way to delivering gas service with net-zero emissions by 2050

Our vision covers the supply, distribution and customer use of natural gas

## Natural Gas Suppliers



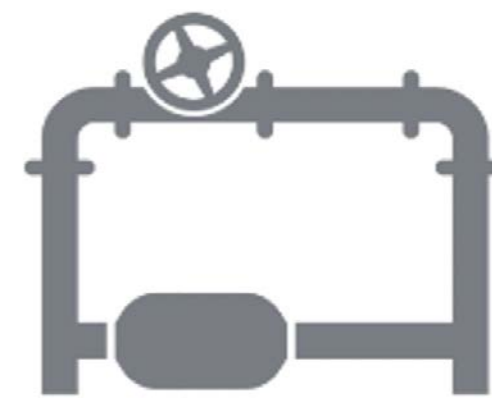
### Influence natural gas suppliers

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Purchase only natural gas with certified low-methane emissions by 2030

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## Xcel Energy System



### Operate the cleanest system possible

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Achieve net-zero methane emissions on the system by 2030

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## Customers



### Offer more options and cleaner fuels

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Expand conservation programs

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Provide electrification options (water heaters, cooling-heating, all-electric new builds)

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Pursue low-carbon gas supply, including hydrogen and renewable natural gas

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# ABOUT THE HYDROGEN-NATURAL GAS BLENDING DEMONSTRATION PROJECT



- Short-term demonstration to blend 2-10% hydrogen into natural gas in an existing distribution system.
- About 250 customers in Adams County will receive hydrogen-blended natural gas.
- Customers still enjoy the convenience of natural gas while using their existing appliances.

## Early 2023:

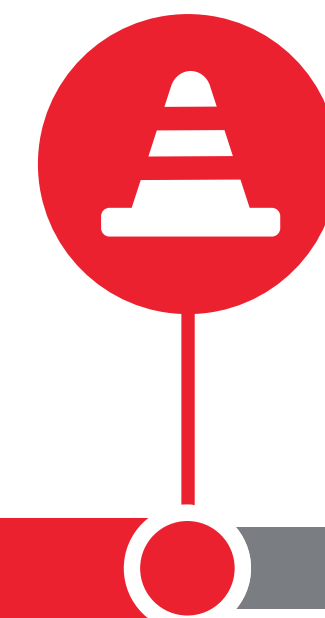
Project identification and initial engineering



2023

## Fall 2023:

Construction



## Late 2023-Late 2025:

Demonstration operating



2025



**Early 2023 through Fall:**  
Permitting, engineering and public outreach



**Late 2023:**  
In-service

2024



**Late 2025:**  
Restoration and completion of the demonstration

**Schedule is subject to change.**





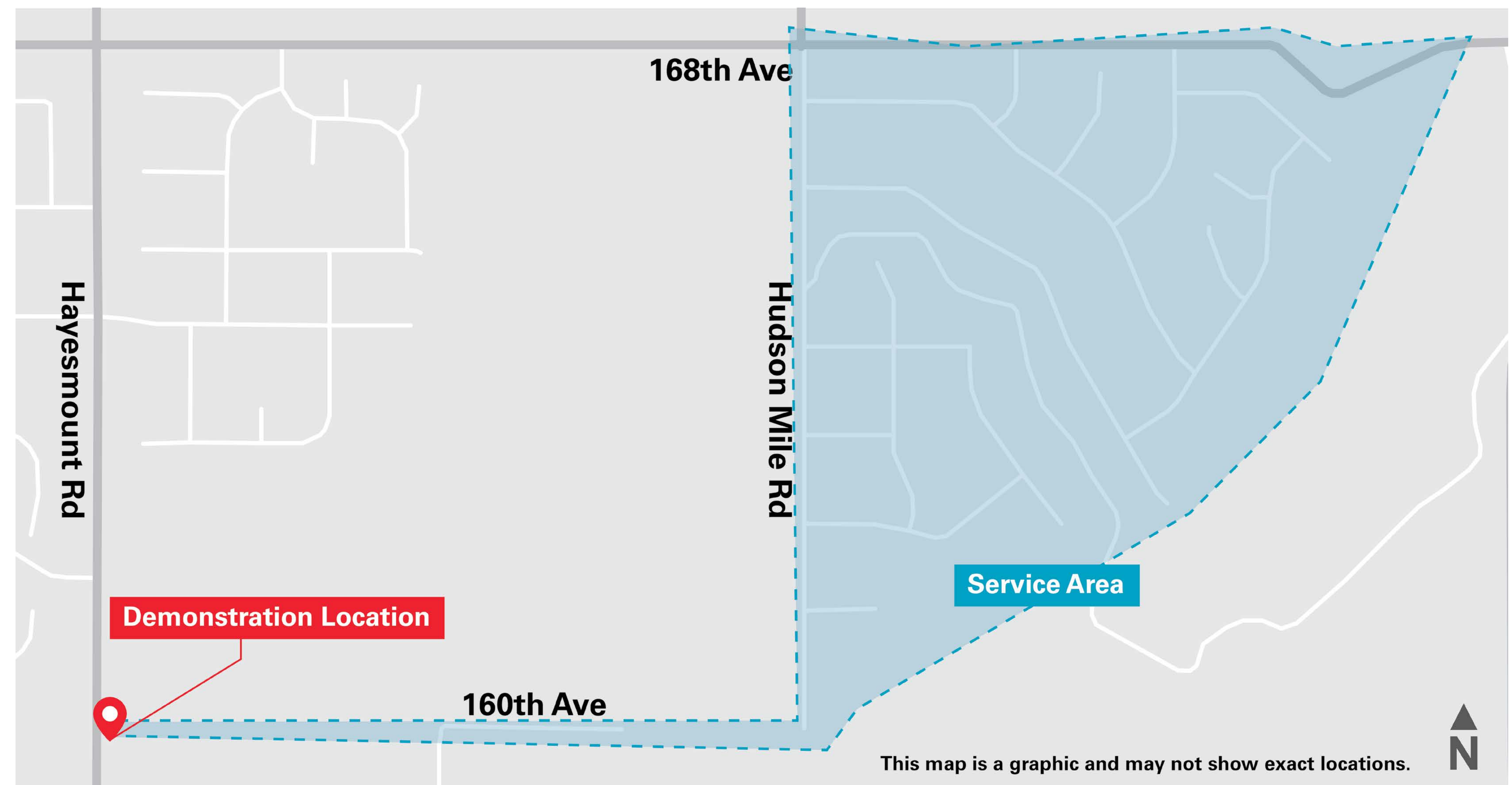
# LOCATION



Proposed demonstration site located near 160th Avenue and Hayesmount Road

## Location identified based on:

- System serving only residential customers
- Available land
- Being near existing natural gas infrastructure
- Compatibility with allowable land use





# WORKING TOGETHER



We'll develop a demonstration that complies with permit and agency requirements and keep our stakeholders informed.

## We'll seek the following permits and conduct consultations.

- Adams County Permitting
- Consultations with Agencies
- Coordination with Emergency Responders
  - Adams County Office of Emergency Management
  - Adams County Sheriff's Office
  - Brighton Fire Rescue District



# WHY HYDROGEN?



- Hydrogen is a safe, reliable energy source that when blended into natural gas allows us to reduce carbon emissions.
- It has been used safely and reliably throughout the world for the last 50 years.

## Hydrogen use in North America

### | **Hawai'i Gas**

Safely providing hydrogen-blended natural gas since the 1970s.

### | **New Jersey Natural Gas**

Providing hydrogen-blended natural gas in Howell since 2021.

### | **Enbridge**

Providing hydrogen-blended natural gas to 3,600 customers near Toronto since 2021.

### | **CenterPoint Energy**

Providing hydrogen-blended natural gas in the Minneapolis region since 2022.

### | **ATCO Gas**

Providing hydrogen-blended natural gas to 2,100 customers in Alberta since 2022.

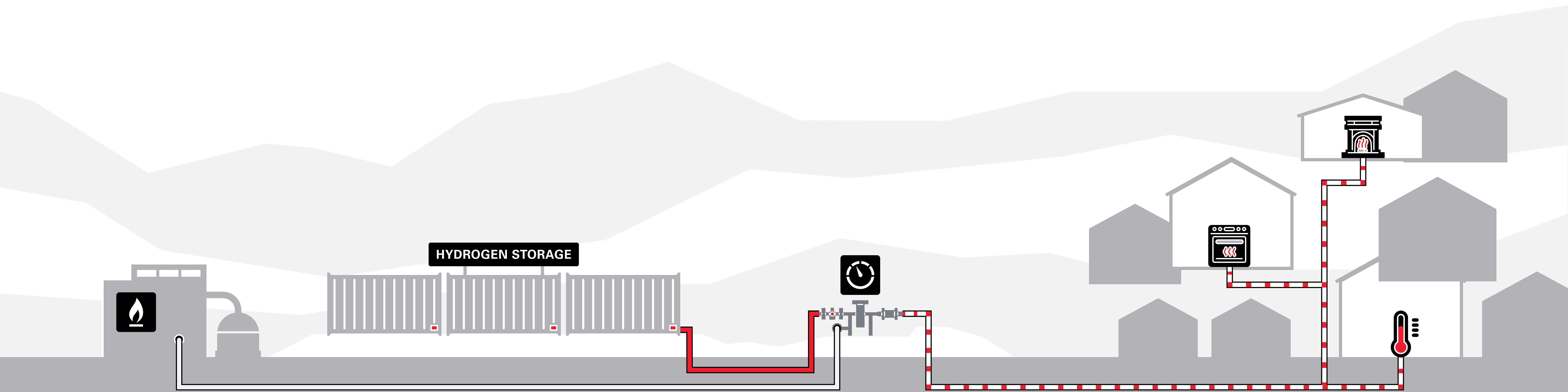
### | **SoCalGas**

Working with University of California Irvine to provide hydrogen-blended natural gas (planned for 2024).





# HYDROGEN-NATURAL GAS BLENDING PROCESS



## Natural Gas Supply

We have an existing network of natural lines that serve customers throughout Colorado.

## Hydrogen Supply

During this temporary demonstration, about 20-40 truckloads of hydrogen will be delivered each year to the location and safely stored until needed.

## Natural Gas System Connection

Hydrogen will be blended into the existing natural gas system serving the community.

## Blended Natural Gas

Up to 10% of the total natural gas blend local customers receive will be hydrogen.

## Customer Use

Customers continue to enjoy safe, reliable service while using their existing appliances.



# BENEFITS OF HYDROGEN-BLENDED NATURAL GAS



When implemented on a wider-scale in the future, hydrogen-natural gas blending will offer the following benefits to the communities we serve:



## | **Less Carbon**

Blending hydrogen into natural gas reduces carbon emissions that would normally be released using just natural gas without hydrogen.



## | **Keep Your Appliances**

With hydrogen-blended natural gas, there's no need to get new appliances or change how you heat your home.



## | **Convenient**

Hydrogen-blended natural gas offers the convenience of natural gas while allowing you to be a partner in reducing environmental impacts.

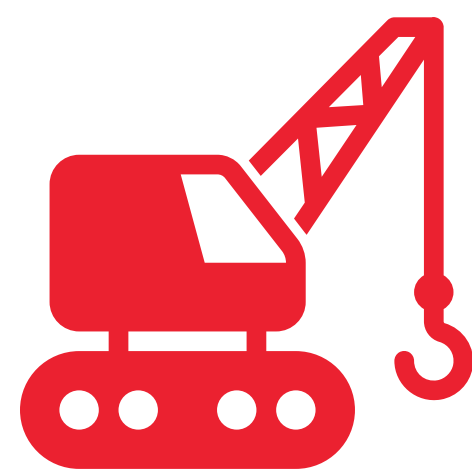




# WHAT TO EXPECT



While we only plan for construction of this demonstration to take about 6-8 weeks, our goal is to limit inconveniences while we work. You may experience the following impacts:



**Workers on-site, truck traffic and delivery of materials**



**Work during permitted hours**



**Noise**



**Testing procedures**

Natural gas service interruptions are not expected.



# DEMONSTRATION SAFETY AND SECURITY MEASURES



**| Delivering safe, reliable energy.**

## **Comprehensive safety measures:**

- 24/7 monitoring.
- Equipment to identify leaks.
- Secure site.
- Hydrogen-blended natural gas will have a rotten-egg or sulfur-like odor.
- Remote shutoff in case of emergencies.

**We'll provide emergency responders with details on how to respond to a potential emergency or a leak that involves hydrogen-blended natural gas.**



# NATURAL GAS SAFETY



## | Public safety is at the foundation of all we do.

If you ever suspect a natural gas leak, leave your location immediately. Once safely away, call 911, then Xcel Energy at 800-895-2999.

### Signs of a natural gas leak include:

- “Rotten egg” or sulfur-like odor. It may smell different to you, though.
- Hissing, whistling or roaring noise outside near the natural gas line or inside near appliances.
- Dirt spraying into the air or continuous bubbling in a creek or pond.
- Unexplained dead or dying vegetation.





# PHOTO SIMULATION



## Current Conditions

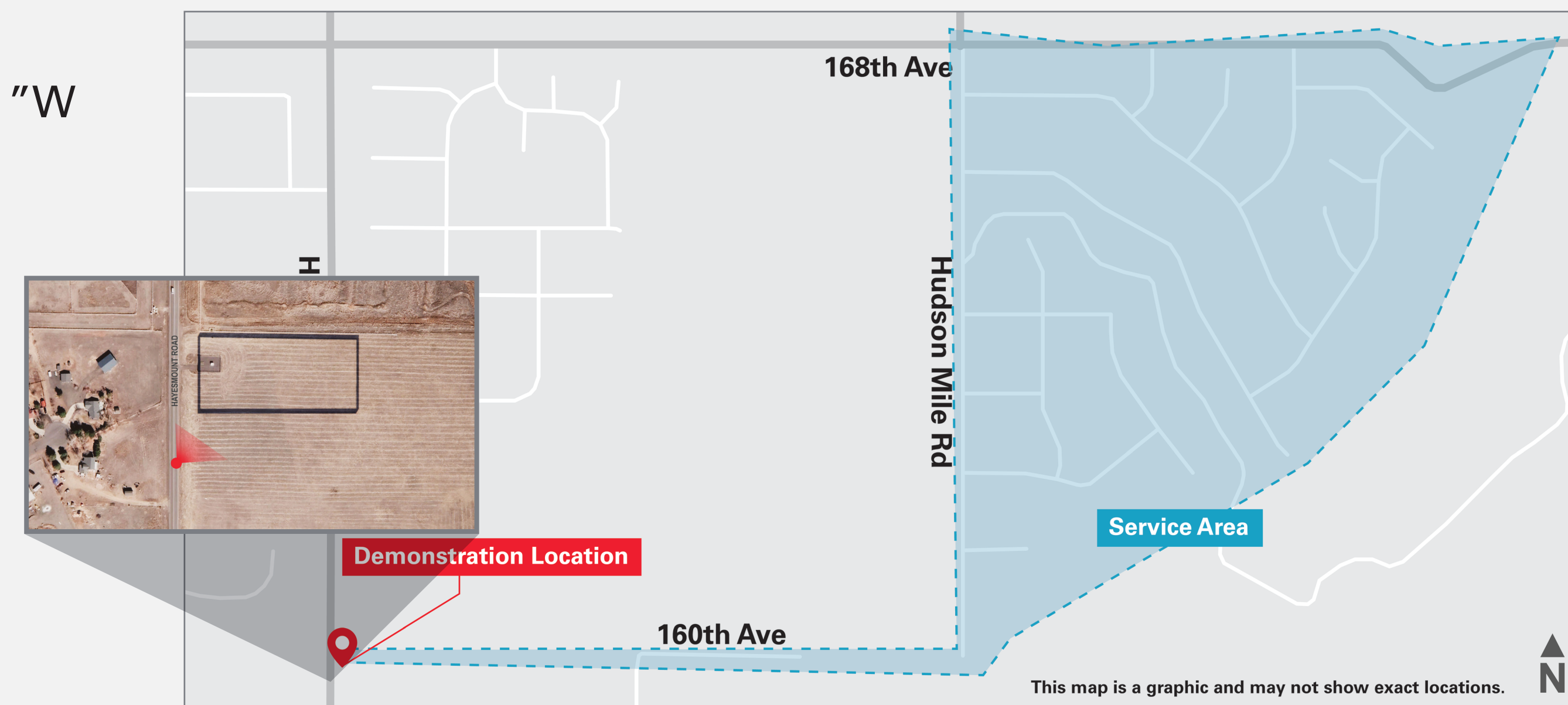


## Simulated Conditions



 **Date:** Friday, March 10, 2023

**Coordinates:** 39°59'8.00"N x 104°38'26.31"W



This simulation is a graphic and may not show final conditions. Adjustments may be made based on final engineering design.





# PHOTO SIMULATION



## Current Conditions

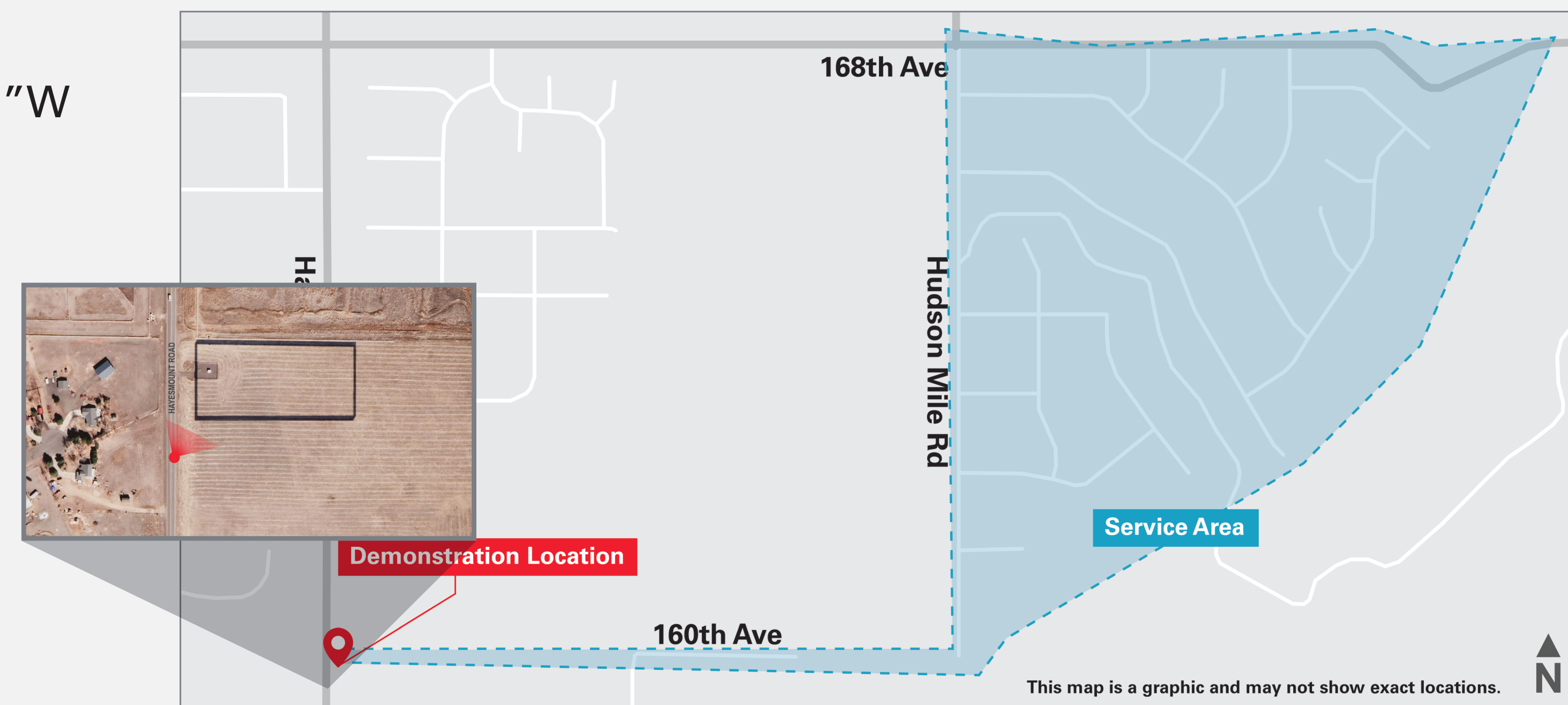


## Simulated Conditions



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**Coordinates:** 39°59'8.53"N x 104°38'26.30"W



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# PHOTO SIMULATION



## Current Conditions

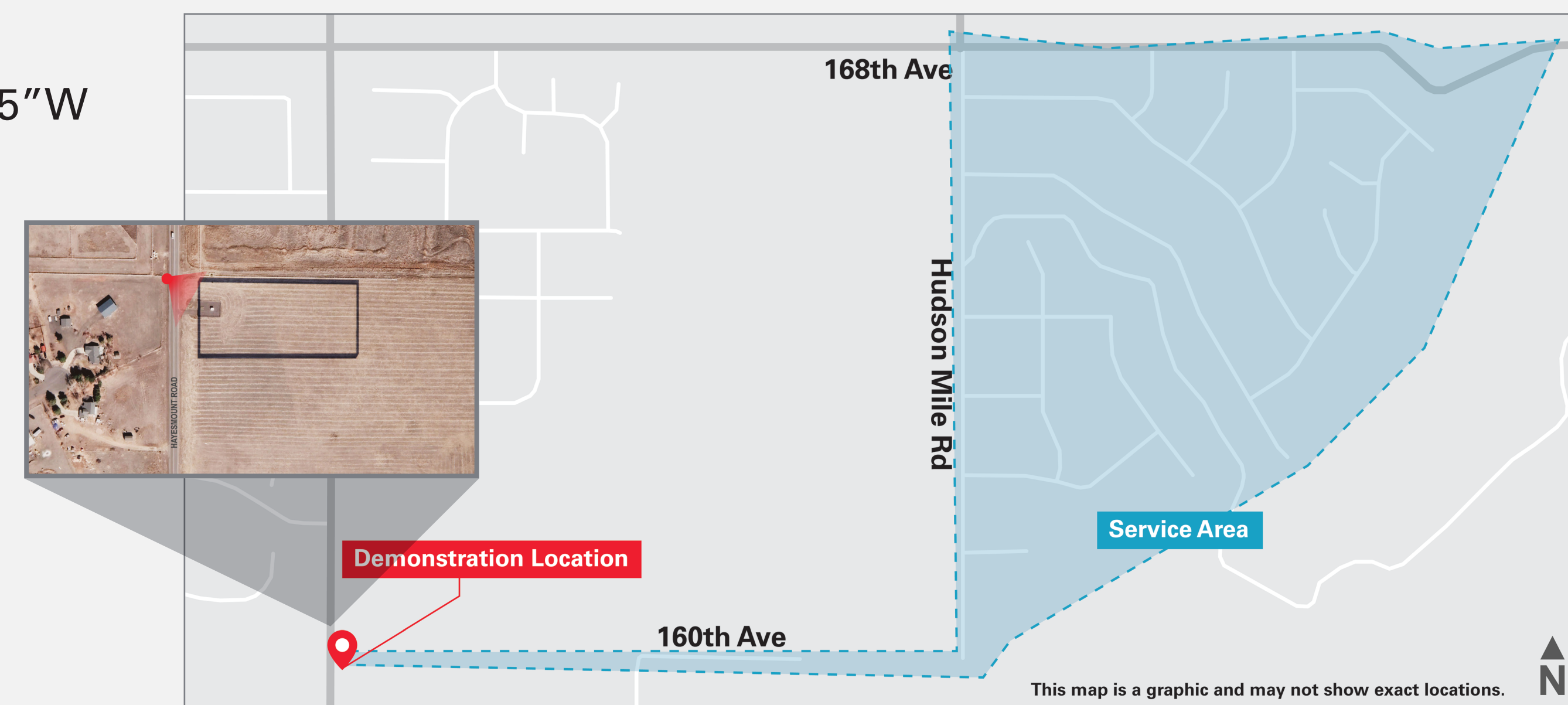


## Simulated Conditions



 **Date:** Friday, March 10, 2023

**Coordinates:** 39°59'11.63"N x 104°38'26.75"W



This simulation is a graphic and may not show final conditions. Adjustments may be made based on final engineering design.





# CONTACT US



## Scan me



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