

Massena Green Hydrogen Project

SAFE | RELIABLE | RESPONSIBLE

Massena Public Meeting
July 12, 2023



Introductions

Trip Oliver

Director, Government and Community Relations

Air Products

Agenda

- Air Products Overview & Safety Culture
 - Fred Schneider, North Region Line Manager, Air Products
- Air Products Hydrogen Capabilities
 - Harry Johnston, Director Large Project Business Development, Air Products
- Site Plan Discussion
 - Jonathan Traynor, Senior Project Manager, Air Products
- Project Environmental Review
 - Eric Kenna, Department Manager, C&S Engineers, Inc.
- Questions

Air Products Overview & Safety Culture

Fred Schneider

North Region Line Manager, Air Products

Air Products Overview & Safety Culture

Fred Schneider – North Region Line Manager

- Background with Air Products & Current Role
- Air Products Overview
- Hydrogen Summary
- Safety Culture
- Overview of Design Safety Features

Air Products Today

only US-based global industrial gas company

\$12.7
billion in FY22 sales

21,000+
employees

50+
countries

~70B
market cap

80+
years in business

200,000+
customers

1,800
miles of industrial
gas pipeline

750+
production
facilities

30+
industries
served

Air Products is...

- World-leading industrial gases company in operation for over 80 years **with 60+ years of global hydrogen experience**
- Safety and sustainability a core value: *Grow, Conserve, Care*
- Industry leader across several hydrogen technology platforms and in pipeline design, operations and safety
- Recognized expert at developing multi-source, multi-customer production and distribution networks; significantly improving efficiency by scale and modern technology
- Member of the Hydrogen Council, a global CEO-led initiative with a united and long-term vision to develop the hydrogen economy



Hydrogen
Council

AIR
PRODUCTS 

Hydrogen summary

- Most abundant element in the universe
- No CO₂ emissions, produces only water during combustion
- Very light, rises quickly as a gas
- As a liquid only weighs 0.6 lbs/gallon vs. 8.3 lbs/gallon for water



Total Safety Philosophy

Maintaining a safe workplace is a **fundamental and moral responsibility.**



We take the approach that all accidents are preventable.
The only acceptable goal is **zero** accidents and incidents.
We will strive toward that goal in **every location, every day.**

Massena Facility Safety Design

Plant Design

- Proper material selection & fully welded systems
- Pressure relief devices for overpressure protection
- Ambient gas monitoring for leak detection
- Mechanical integrity inspections to ensure system integrity for the life of the facility

Fleet Transportation

- 60 years transporting LHY on roadways with no inner tank failures or liquid release
- Trailers are constructed per DOT / ASME vessel designs, specific for liquid H₂
- Regulatory inspections routinely conducted on fleet



Air Products Hydrogen Capabilities

Harry Johnston

Director Large Project Business Development

Air Products

Hydrogen and Battery Electric are Complementary Ways to Decarbonize



Electricity & Battery Electric Technologies



Hydrogen & Fuel Cell Technologies

Cars	Light industries
Buses on shorter routes	Commuter rail (via catenary)
Light- and medium-duty trucks	Heating / cooling

Buses on longer / more challenging routes	Port equipment (drayage trucks, yard switchers etc.)
Medium- and heavy-duty trucks	Heavy industries
Rail	Storage of renewable energy

Hydrogen Production

Leading the transition to low carbon hydrogen

>110 Hydrogen Production Facilities
(SMR, Electrolysis, Liquid and Gaseous H₂)

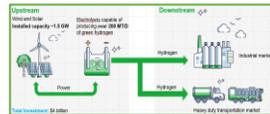
>9,000 MTD Capacity
~600 MTD of H₂
at Port Arthur, TX

>3,300 MTD in development

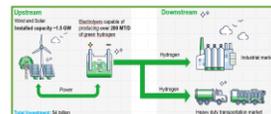
Edmonton H₂
Louisiana H₂
NEOM H₂
Texas H₂
Massena H₂
Arizona H₂



**Edmonton
H₂ Canada**



Arizona H₂



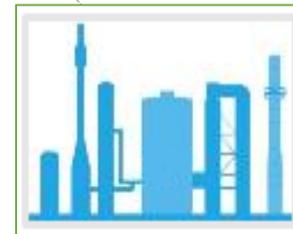
Texas H₂



**Port Arthur,
Texas H₂**



**New York
H₂**



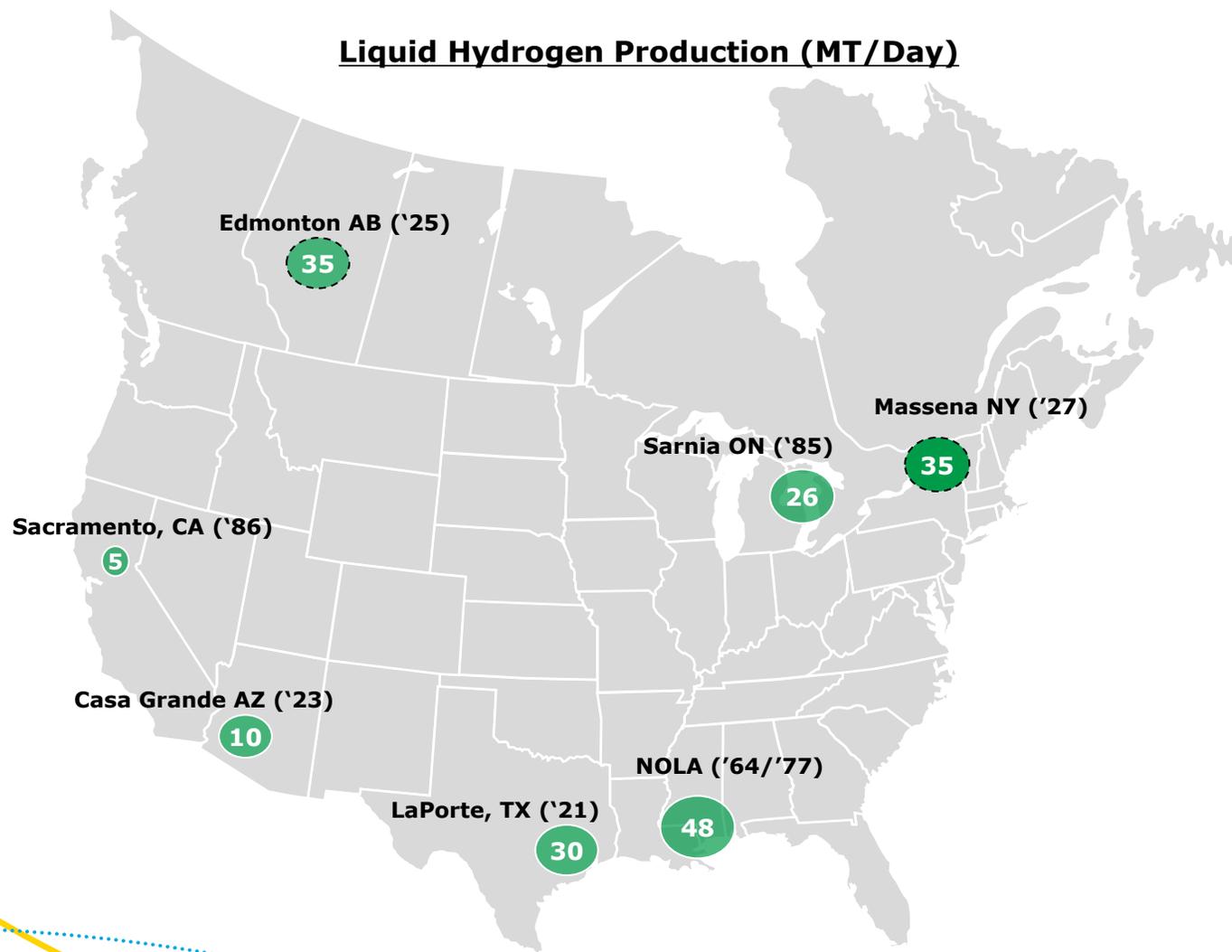
Louisiana H₂

NEOM H₂
Saudi Arabia



Liquid Hydrogen Production & Distribution

Liquid Hydrogen Production (MT/Day)



15 Million miles driven / Year



Liquid Trailer



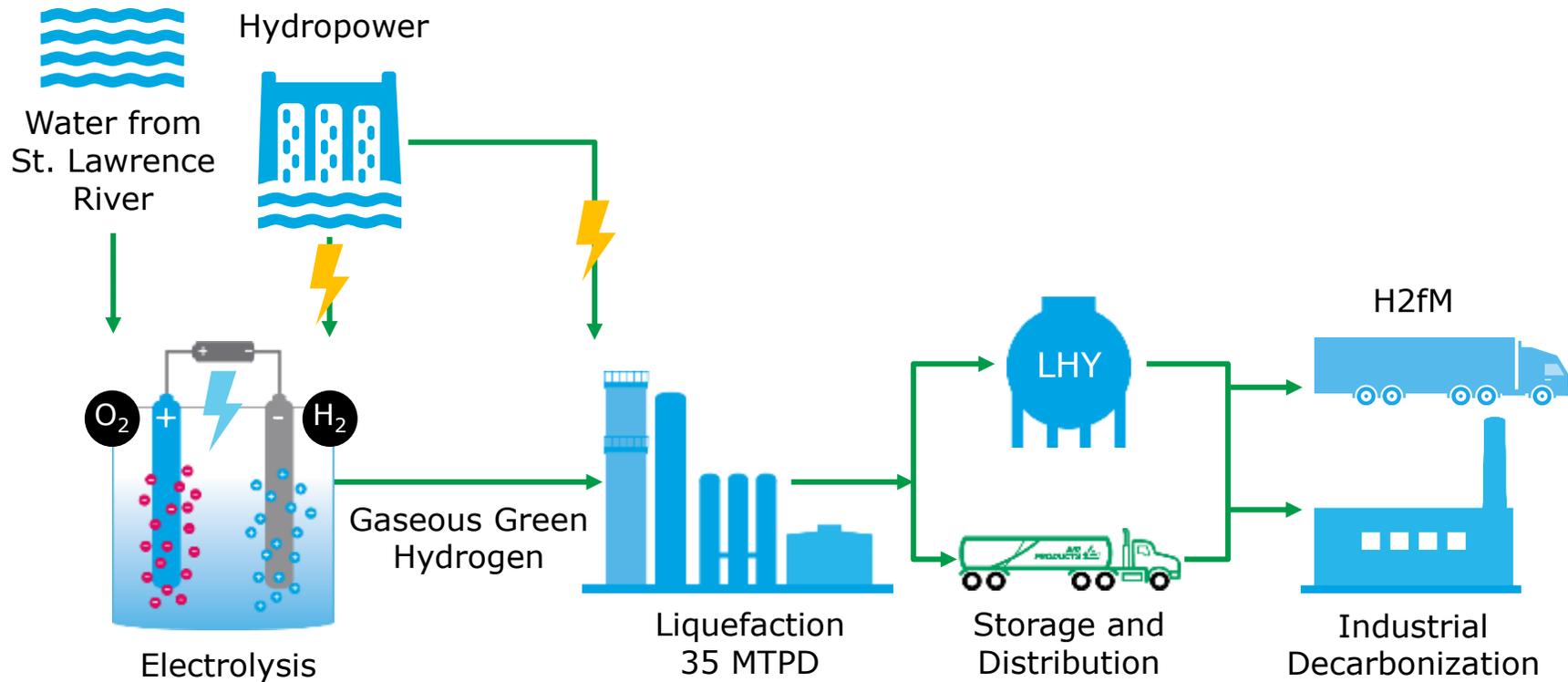
Gaseous Tube Trailer



Mobile Fueler

Massena Green Hydrogen Project

Hydrogen for mobility and industry



- Capital: ~**\$0.5 billion**
- Ownership: **100% Air Products**
- Production: **35,000 kg/day** of carbon-free Hydrogen
- Start of production: **2026/27**
- Environmental Impact: **6 million tonnes of CO2 avoided** (equivalent to 600 million gallons diesel)

Future Climate Benefits of Air Product Projects

Zero- & low-carbon H₂ projects in execution

If all the H₂ from Air Products' projects is used for the heavy-duty truck market:

Expected future climate benefits of

500M+

tonnes of CO₂e avoided over the projects' lifetime

.....



Air Products Projects

=

Equivalent to avoiding emissions from

~50B

gallons diesel fuel (or ~190B liters)

.....



Traditional Oil Supply

Massena Project Overview

Jonathan Traynor
Senior Project Manager, Air Products

Massena Project Overview

Jonathan Traynor – Senior Project Manager, Air Products

- Review of Project Development Plans
 - Description of buildings
 - Description of other process equipment
- Construction timeline
- Job Opportunities

Massena Green Hydrogen Project



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Massena Environmental Review

Eric Kenna

Department Manager, C&S Engineers Inc.

Project Environmental Review

SEQRA Compliance

- Site / Setting
- Zoning Actions / SEQR
- Water Source
 - Process Water / Potable Water
- Water Discharge
 - Process Water / Sanitary
- Stormwater
- Wetland Impacts



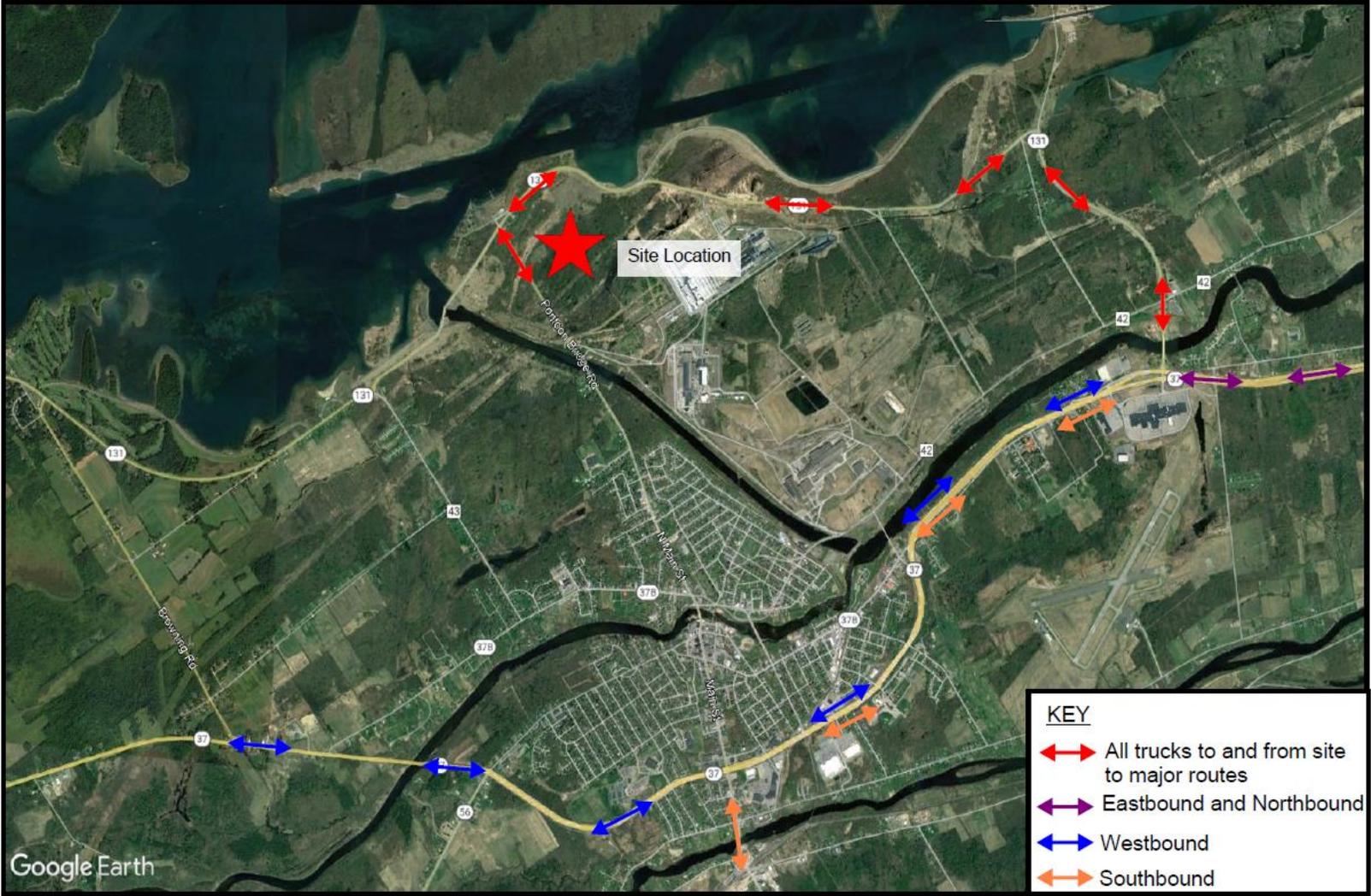
Project Environmental Review

Permits / Approvals

- SPDES Permit for Process Water Discharge – NYS DEC
 - On Site Septic System
- SWPPP for disturbance over 1 acre – NYS DEC
- Wetlands
 - Site - Jurisdictional Determination – USACE
 - Process Water Discharge - USACE Permit under Section 404
 - NYSDEC – Water Quality Certification
- Air Registration Only – No Permit Required

Project Environmental Review

Traffic Study - Overview of Traffic Impacts



Thank you
tell me more

