



# CSX Train Derailment – Hyndman, PA

Multiagency Response Overview  
Regional Response Team Meeting  
November 15, 2017

Tom Wolf, Governor

Secretary Patrick McDonnell

## Morning 8-2-17

- ~0500 CSX train consisting of 5 locomotives and 178 cars derails in Hyndman Borough, Bedford County PA
- ~0710 Southcentral ER hotline notified
- ~0730 SCRO staff en route to accident site
- PEMA CRCC activated at 0910

# Morning 8-2-17

- Initial Report:
  - 12 cars derailed
  - 2 breached
    - LPG venting and on fire
    - Liquid Asphalt leaking and on fire
  - ~500 residents evacuated within ½ mile



# Morning Concerns

- Evacuation zone not sufficient at ½ mile
  - Potential for BLEVE
- 33 cars derailed and not 12
  - 16 cars listed as hazmat on consist including two additional LPG cars next to the one on fire
- Molten Sulfur on fire and not asphalt

# Derailment Site 8-2-17



Photo from State Police

# Derailment Site 8-2-17



Photo from State Police

## Afternoon 8-2-17

- Received modeling from Interagency Modeling and Atmospheric Assessment Center (IMAAC)
- Evacuation zone pushed to 1 mile and command post and shelter moved
  - ~1000 residents impacted
- Confirmed molten sulfur car on fire



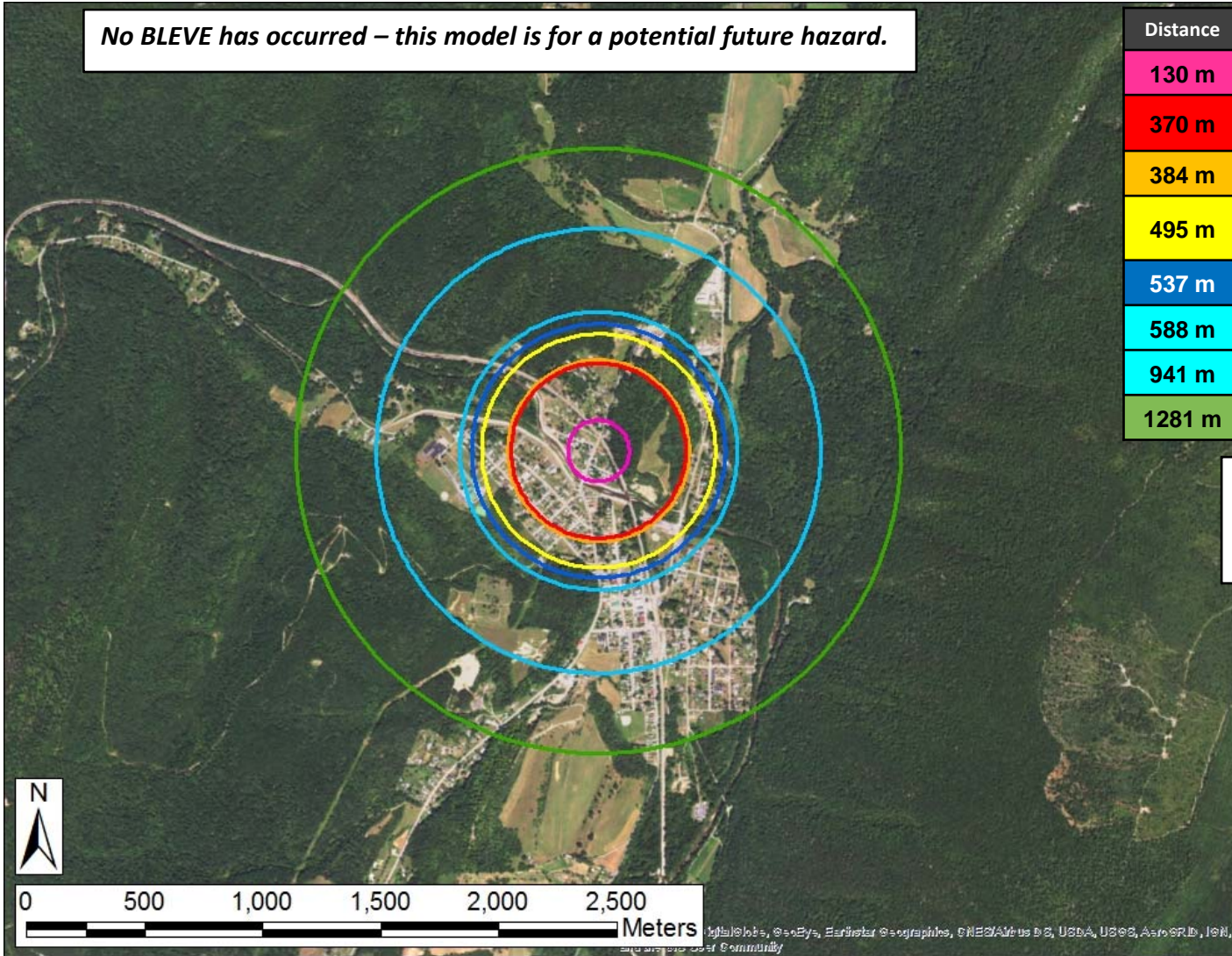
## Afternoon 8-2-17

- Started coordination with ATSDR and DOH
- Worked with CSX to identify air monitoring resources for H<sub>2</sub>S and SO<sub>2</sub>
- Confirmed that public water supply not capable of supporting fire suppression



# Potential BLEVE (30,000 gallons propane) – Thermal Effects

No BLEVE has occurred – this model is for a potential future hazard.



Distance	Effect
130 m	Radius of Fireball
370 m	3 <sup>rd</sup> Degree Burns
384 m	50% Lethality
495 m	1% Lethality
537 m	2 <sup>nd</sup> Degree Burns
588 m	Upper Range of Blistering
941 m	Lower Range of Blistering
1281 m	Threshold of pain

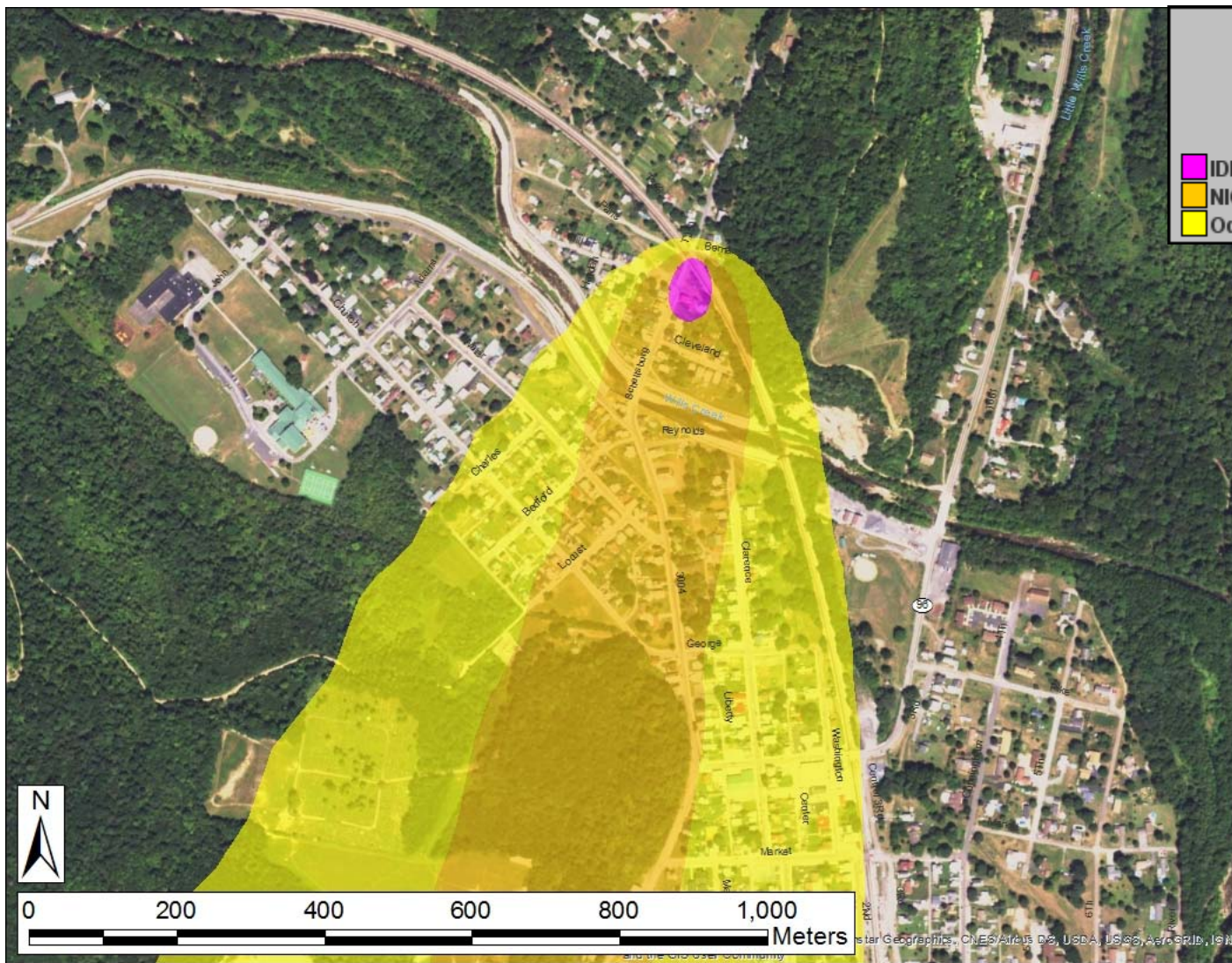
Shielding from buildings can reduce the hazard-to-effect contour distances shown in the slides. The contours produced are representative of open terrain effects.

**FACTS**  
 Hyndman, PA  
 Location: 39.825943° N / 78.722140° W  
 Type: Propane BLEVE  
 Amount: 30,000 gallons  
 Dissemination: Rail Accident/Fire  
 Model: AIChE



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# Sulfur Dioxide – 1400Z (1000 Local) – Near View – Initial Response



Sulfur Dioxide(Total) Concentration 02-Aug-17 14:00:00Z (5.000 hr)		
	ppm	In contour population
IDLH	100.0	1
NIOSH STEL	5.0	169
Odor Threshold	0.45	682

This quick response used a weather prediction model; and was not coordinated with other IMAAC participants. Coordination will follow, and product will be updated as needed.

<b>FACTS</b>	
Hyndman, PA	
Location: 39.826313° N / 78.722013° W	
Event Time: 0500 Local, 02AUG2017	
Type: Sulfur fire	
Amount: 90,000 kg	
Dissemination: Rail Accident	
Weather: 12 km NAM	
Model: HPAC 6.4	
Static Population Estimates:	
LandScan 2015	

# State Police flyover 8-2-17



Photo from Pennsylvania State Police

# 8-2-17 Overnight

- LPG car venting/burning overnight
- Prepare for monitoring stations
- Staff CRCC

# Burning LPG 8-3-17



Photo from Pennsylvania State Police

## 8-3-17 Morning

- LPG car still burning
  - Volume expected to be minimal with no BELVE potential
- CSX supplied Area Rae's w/ H<sub>2</sub>S and SO<sub>2</sub> sensors
- Began re-entry planning

# Derailment Site 8-3-17



Photo from Pennsylvania State Police



## 8-3-17 Evening

- Air monitoring conference call
  - CSX – DOH – DEP – ATSDR – EPA
- Review air sampling plan
  - Fixed monitors + roving monitors w/ wind direction
- Discussion on action levels for H<sub>2</sub>S and SO<sub>2</sub> for re-entry

## 8-3-17 Challenges

- Reunification of evacuees with pets and medications left behind
- Decision on appropriate action levels of SO<sub>2</sub>
  - AEGL vs more conservative acute risk level
- Detection limits of available meters and potential sampling

## 8-3-17 Overnight

- LPG car venting w/ ~1500-2000 gallons left
  - Attempt to extinguish fire by rotating car to empty liquid LPG
- Sampling capability for SO<sub>2</sub>?
- Prepare for DOH (ATSDR) / DEP meeting with 'unified command' onsite on 8/4/17

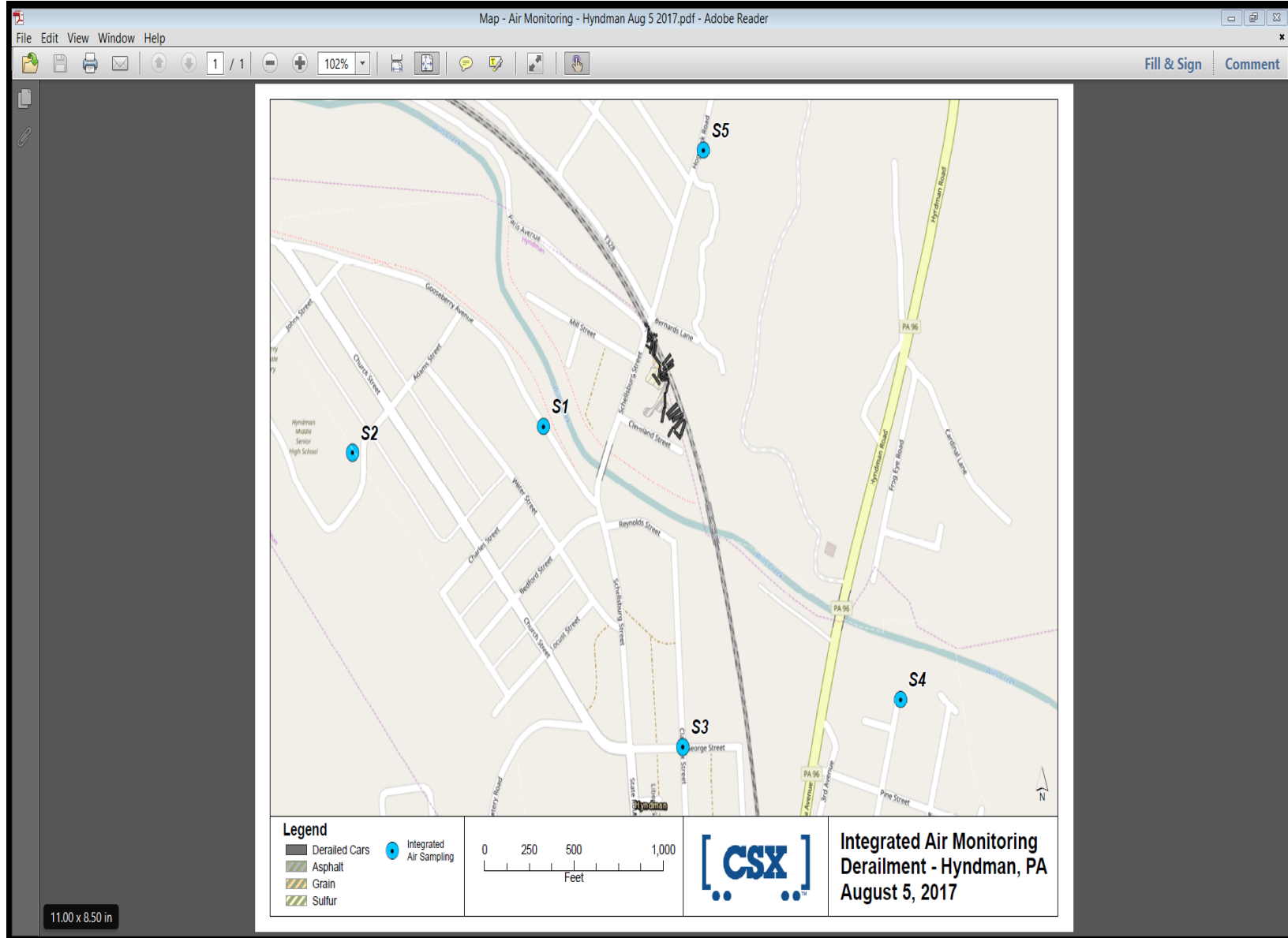
8-4-17

- Onsite Unified Command meeting with state agencies
- Fires out for both cars (molten sulfur and LPG)
- Cleanup operations started for grain, asphalt and other cars not involved in the fire

## 8-4-17 Challenges

- Approvals for waste materials going to landfills
  - Paperwork for acceptance / landfill permitting
- Communications / terms used between Commonwealth agencies and CSX staff
- Continued discussion on reentry air monitoring and messaging to public

# Air Monitoring Locations



8-5-17

- Cleanup operations underway to remove hazardous materials
- Development of citizen fact sheets for contaminants
- Public messaging discussion w/ DOH / DEP / ATSDR with respect to press release and CSX
- Residents allowed in at noon



# Cleanup as of 8-9-17

- Air monitoring continued until 8-16-17
- Cleanup of cars and property continued for several weeks
- Several AAR's at local and Commonwealth level





# Cleanup as of 8-9-17





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