

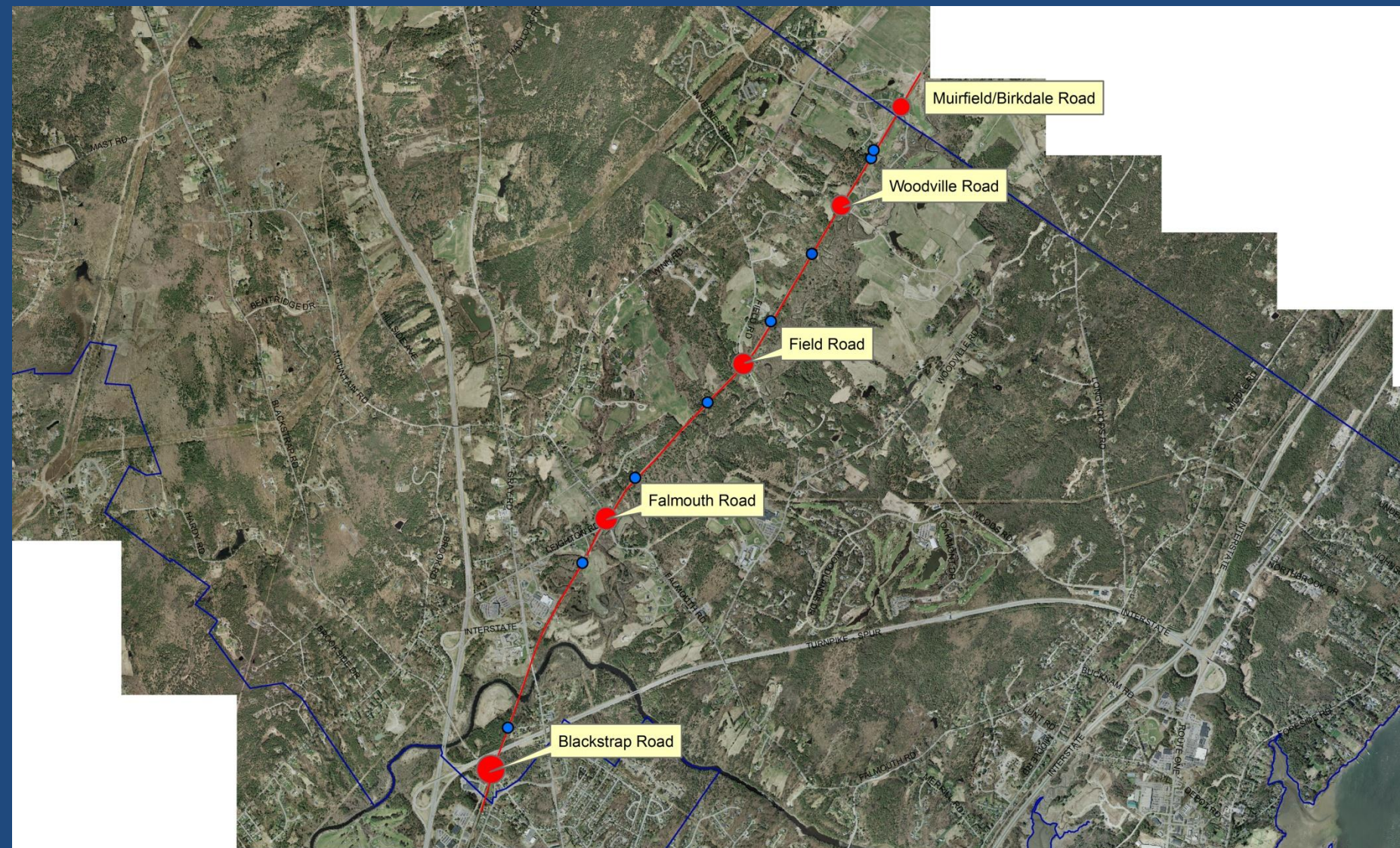
# Rail Crossing/Neighborhood Issues along Pan Am Railways line



*Note: Preliminary research was conducted by Town staff and has not been reviewed by other parties*

# Pan Am Railways Line

- Four (4) rail crossings in Falmouth: Blackstrap, Falmouth, Field, and Woodville roads
- One (1) crossing on private road: Muirfield Road/Birkdale Road (but located in Cumberland)
- Three (3) public crossings in Cumberland: Route 9, Tuttle, and Greely roads



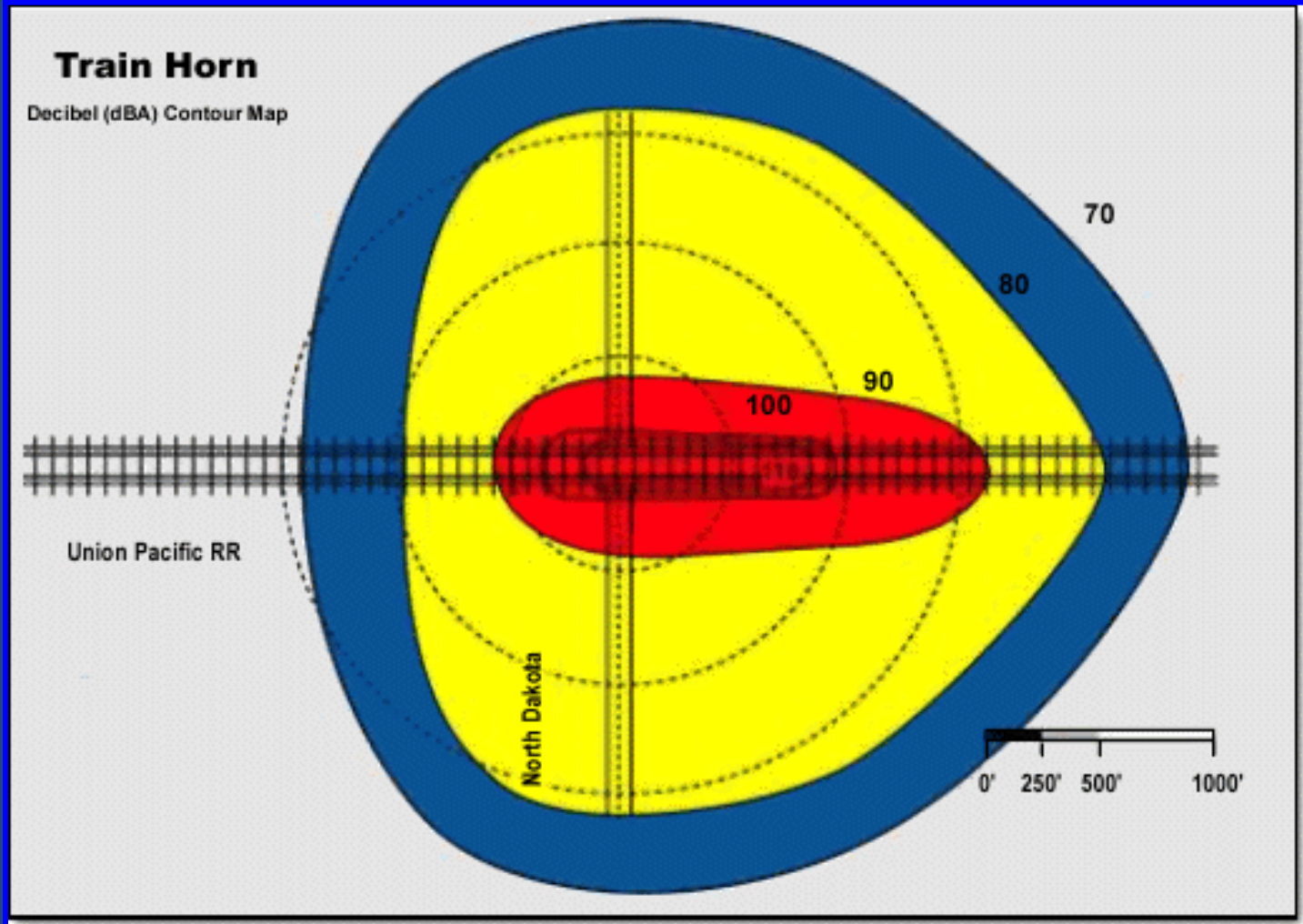
# Railroad Crossings in Falmouth

# Federal Horn Rule

- Routine sounding of train horn for max.  $\frac{1}{4}$  mile or max. 20 seconds before crossing
- Max. (110 dB) and min. (96dB) sound level set
- No horn is sounded if sufficient safety measures are in place (“Quiet Zone”)
- “44% more accidents at crossings with whistle ban and gates than without one”

(Source: Final Environmental Impact Statement, FRA, page 4-2)

# Noise Impact



Decibel contour footprint impact of train horn

# “Quiet Zone” (QZ)

- Blackstrap and Falmouth crossings are currently located in what is called a "Quiet Zone" (QZ) - approved by Federal Railroad Authority (FRA).
  - No routine train whistle will sound in this zone.
- QZ is only allowed if there are adequate supplemental safety measures in place that will ensure similar or greater safety related conditions than reliance on a train whistle.
  - Emergency sounding of horn is permitted.

# Downeaster Impact

- Current rail traffic: 8 freight trains/day
- New Downeaster extension of service from Portland to Brunswick: + 6 trains/day
- Upgrades paid for by the Northern New England Passenger Rail Authority (NNEPRA), operator of the Downeaster.
- Rail upgrade will allow freight trains to travel at higher speeds (from 40 to 60 mph)

# Crossing Upgrades

- NNEPRA-funded crossing upgrades may not be enough to either maintain QZ at Blackstrap and Falmouth Roads or add a new QZ to Field and Woodville Roads.
  - Upgrades planned for mid September
- There are supplemental safety measures (SSM's) that can be added to maintain or add a QZ in Falmouth for the Council to consider.
- Quiet zone measures are typically all Town cost



# QZ Safety Improvement Options

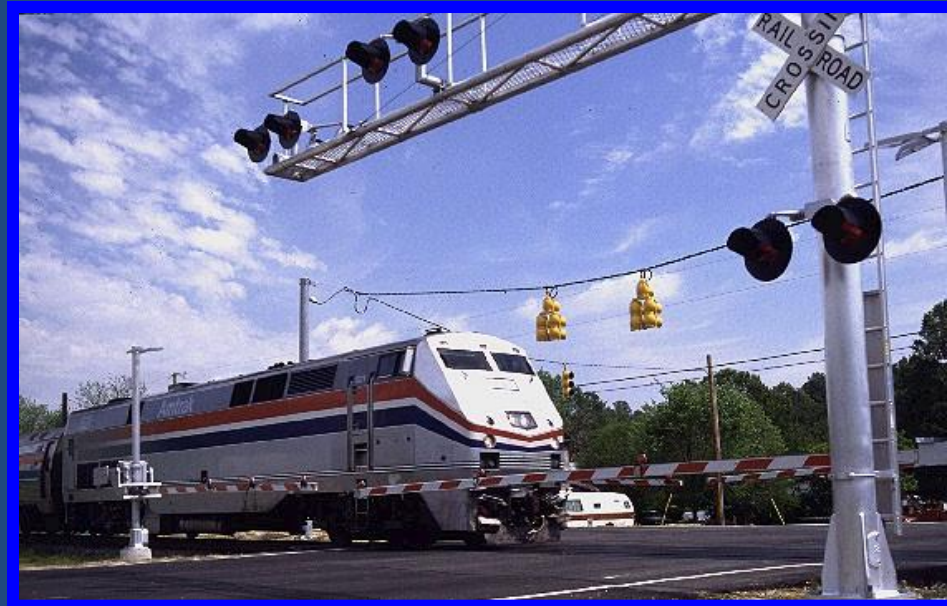
- Quad gate system \$\$\$
- Gates with medians or channelization \$
- One way street with gates N/A
- Temporary closures N/A

No QZ, but reduce horn noise:

- Wayside horn \$\$
- Alternative Safety Measures may be possible

# Quad gate system

- Gates at a crossing sufficient to block traffic from entering crossing when the gates are lowered
- When train approaches, all lanes on both sides of crossing are spanned by gates
- Upgrade from 2 to 4 gates: \$150K + road costs



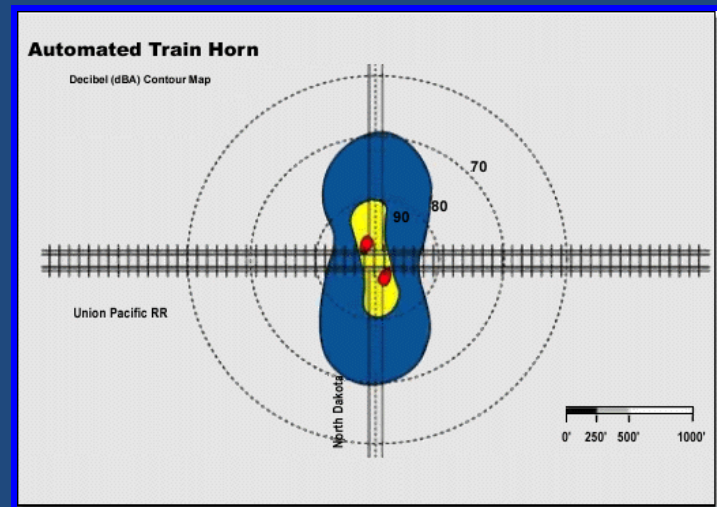
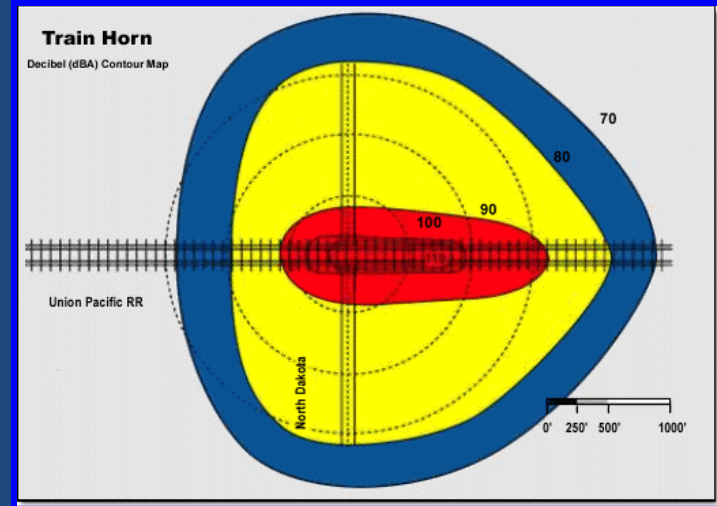
# Gates with medians or channelization

- Prevents drivers from circumventing the gates by switching into oncoming traffic lane and driving around the lowered gates to cross the tracks
- Must extend at least 60-100 feet from the gate arm
- Cost: \$15K



# Wayside horn

- Stationary horn system mounted at crossing rather than at train
- Automatically activated when train approaches
- Sounds like a train horn
- Activated until train reaches crossing
- Sound impact much more limited, but constant
- Cost: \$100K



# 1. Maintain Existing QZ?

- NNEPRA:
  - Will make min. required crossing improvements
  - Limited to 2 gates at crossings (these already exist at Blackstrap and Falmouth)
  - Supports train horn
  - Environmental Assessment states “no noise impact”
- May not maintain QZ. Whose responsibility is it to maintain existing quiet zone?

## 2. Add New QZ?

- Field and Woodville Road improvements are Town responsibility
- Muirfield/Birkdale improvements are private responsibility, but may require municipal endorsement
- New QZ in Cumberland too?

# Quiet Zone Qualifications

- Nationwide Significant Risk Threshold
  - = average risk with flashers, gates and train horns
- Risk Index with Horns
  - = risk at a crossing within QZ with train horns
- Quiet Zone Risk Index
  - = average risk for all crossings in a QZ: added risk due to no horns – reduced risk due to safety measures

# FRA's Quiet Zone Calculator

- Type of warning device
- Vehicles per day
- Trains per day
- Trains per daylight hours
- Number of tracks
- (Un)paved road
- Max. train speeds
- Number of lanes
- Number of years for accident analysis
- Number of accidents during analysis years



# QZ Preliminary Options

Crossing Location	Option 1	Option 2	Option 3
Blackstrap	Quad gates	Channelization/one-way road (Davis Farm Road)	Wayside Horn
Falmouth	Quad gates	Channelization/road realignment (Leighton Road)	Wayside Horn
Field	Channelization	Wayside Horn	Quad gates
Woodville	Channelization	Wayside Horn	Quad gates
(Muirfield/Birkdale)	Channelization	Wayside Horn	Quad gates



Blackstrap Road : Quad gates?



Falmouth Road: Quad gates?



# Field Road: Channelization?



# Woodville Road: Channelization?



Muirfield Road/Birkdale Road: Channelization?

# Next Steps

- Informational meeting is being scheduled with FRA officials for September 19th in Cumberland Town Hall (to be confirmed).
- In case QZ is to be pursued:
  - Channelization costs estimates are being investigated by Town staff
  - Discussion should be held with FRA and NNEPRA