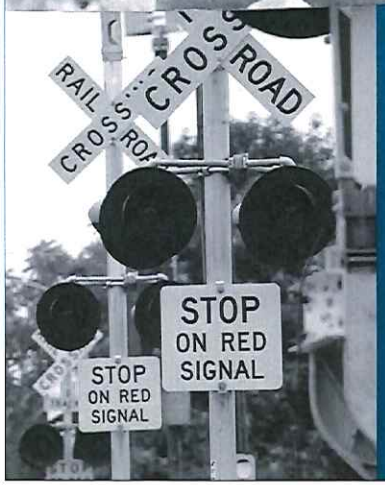
QUIET ZONE PRESENTATION



Appleton, Wisconsin

April 26, 2106

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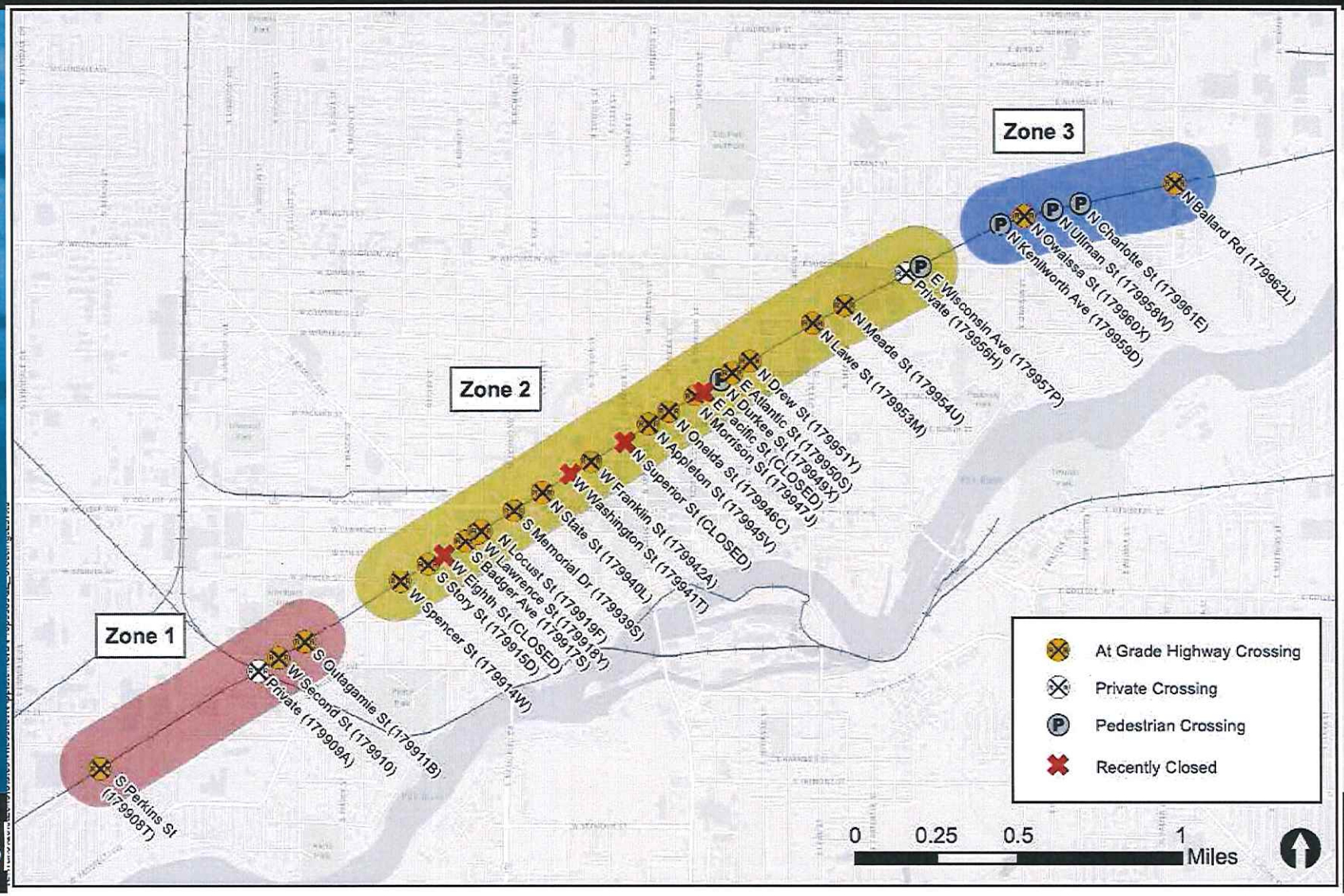
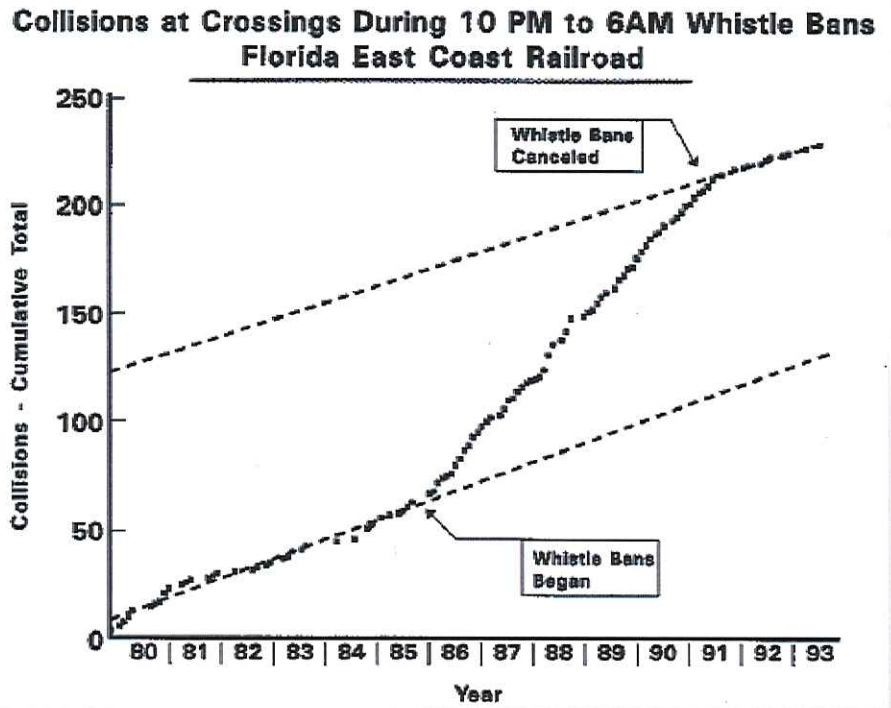
Consulting Group, Inc.

Proposed Quiet Zone Crossings



Train Horn Rule Background

- Florida East Coast Railroad Whistle Ban caused increase in collisions



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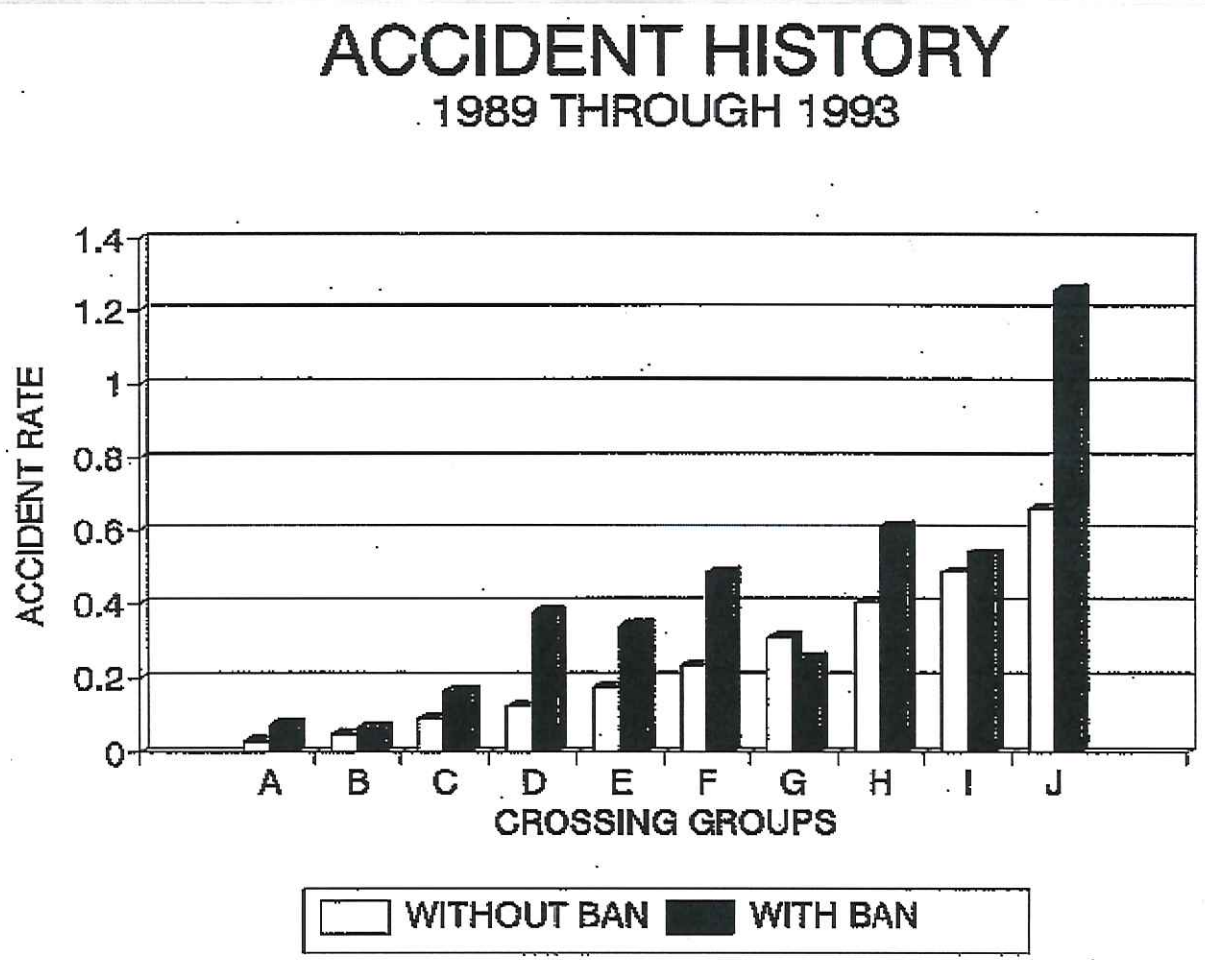
Train Horn Rule Background



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Train Horn Rule Background

- 1994: Congress mandates Federal regulation of horns at grade crossings with exceptions to allow "quiet zones"
- 1994-2003: FRA solicits input from stakeholders
- 2005: Train Horn Rule goes into effect

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Minimum Requirements

- Quiet Zone must be at least 1/2-mile long and include all crossings within the quiet zone limits
- All public grade crossings must meet pre-qualifying criteria:
  - Gates and flashing lights
  - Power-out indicators
  - Constant warning time detectors

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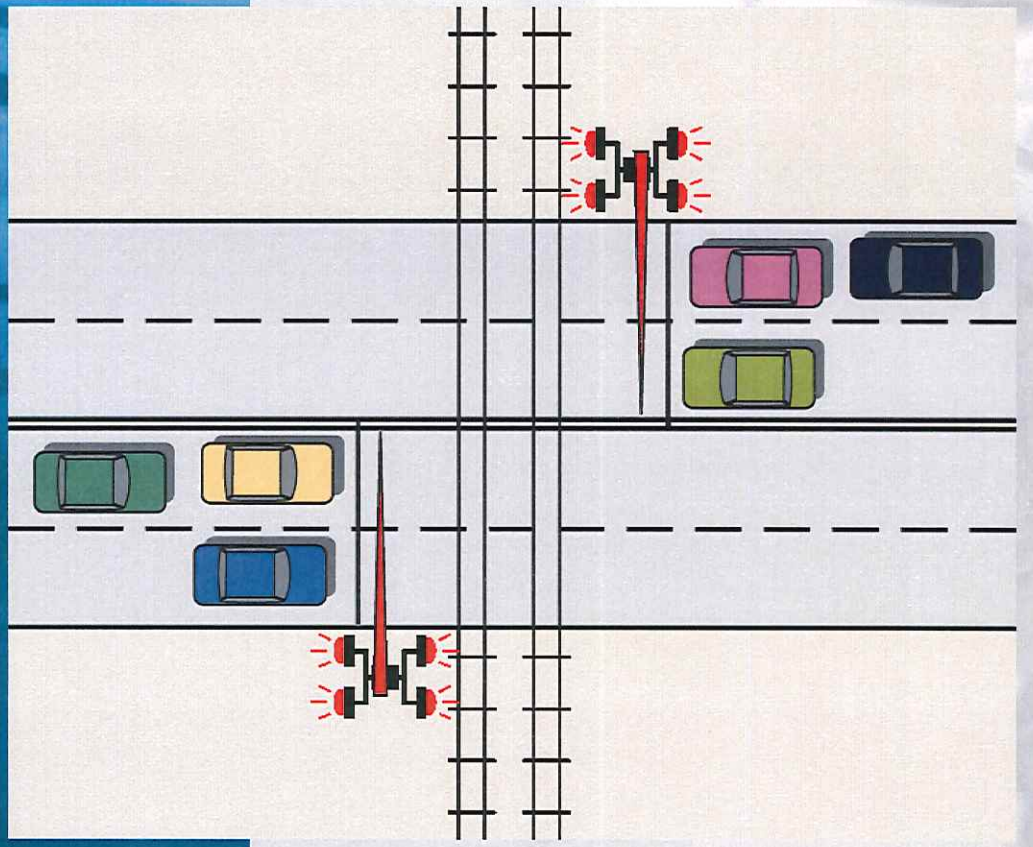
Two-Quadrant Vehicle Gates, Warning Lights, Constant Warning Time



- Cost = $250K
- Required for quiet zone designation
- Railroad controls:
  - installation
  - scheduling
  - requirements
  - cost

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Two-Quadrant Gate Example

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Quiet Zone Risk Levels

- Quiet Zone Implementation based on risk analysis
- DOT Accident Prediction Model
  - Highway volumes and speed
  - Rail volumes and speed
  - Crossing surface and geometry
  - Previous crash history (5 years)
  - Estimated cost by crash type

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Quiet Zone Risk Levels

- Quiet Zone Risk Index (**QZRI**)
  - Risk level after crossing improvements and no horn sounding
- Risk Index With Horns (**RIWH**)
  - Existing conditions with horns
- Nationwide Significant Risk Threshold (**NSRT**)
  - National average of risk for all crossings in the U.S.
  - Adjusted annually (Current level = 14,347)

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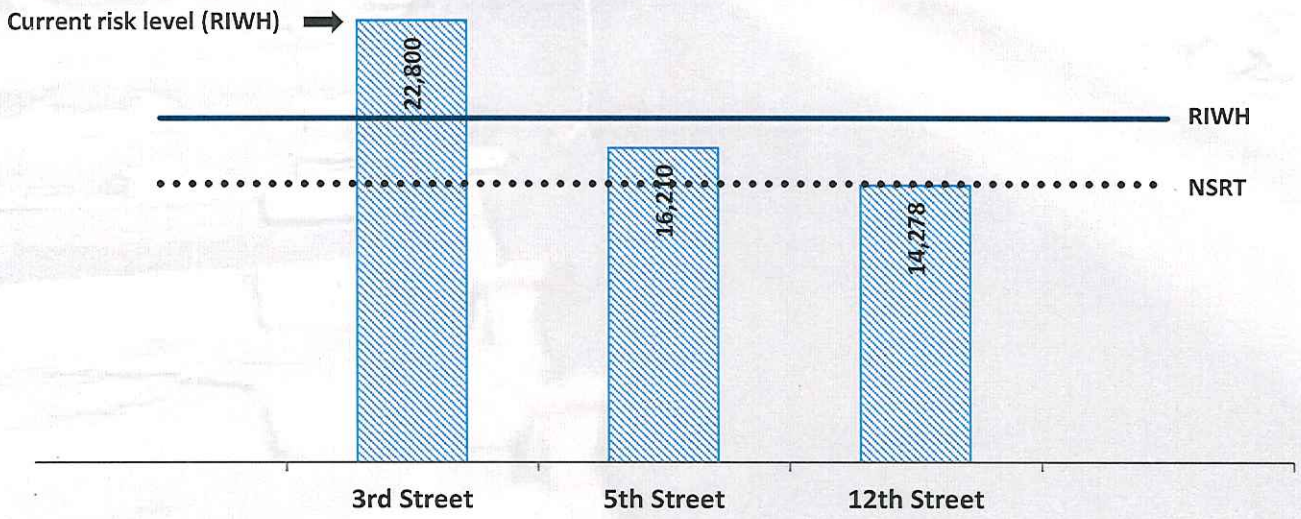
Quiet Zone Risk Example



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Quiet Zone Risk Example

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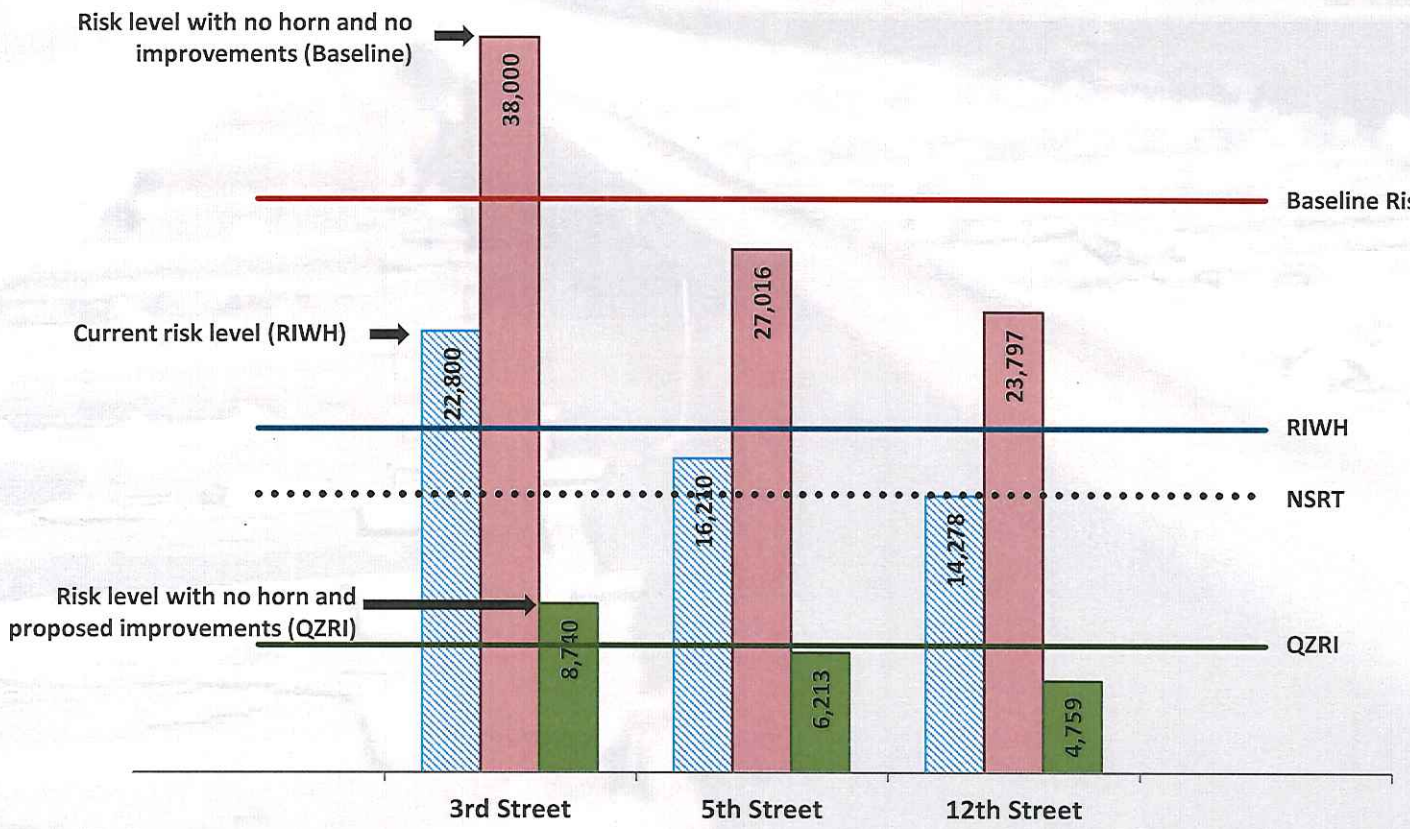
Quiet Zone Risk Example



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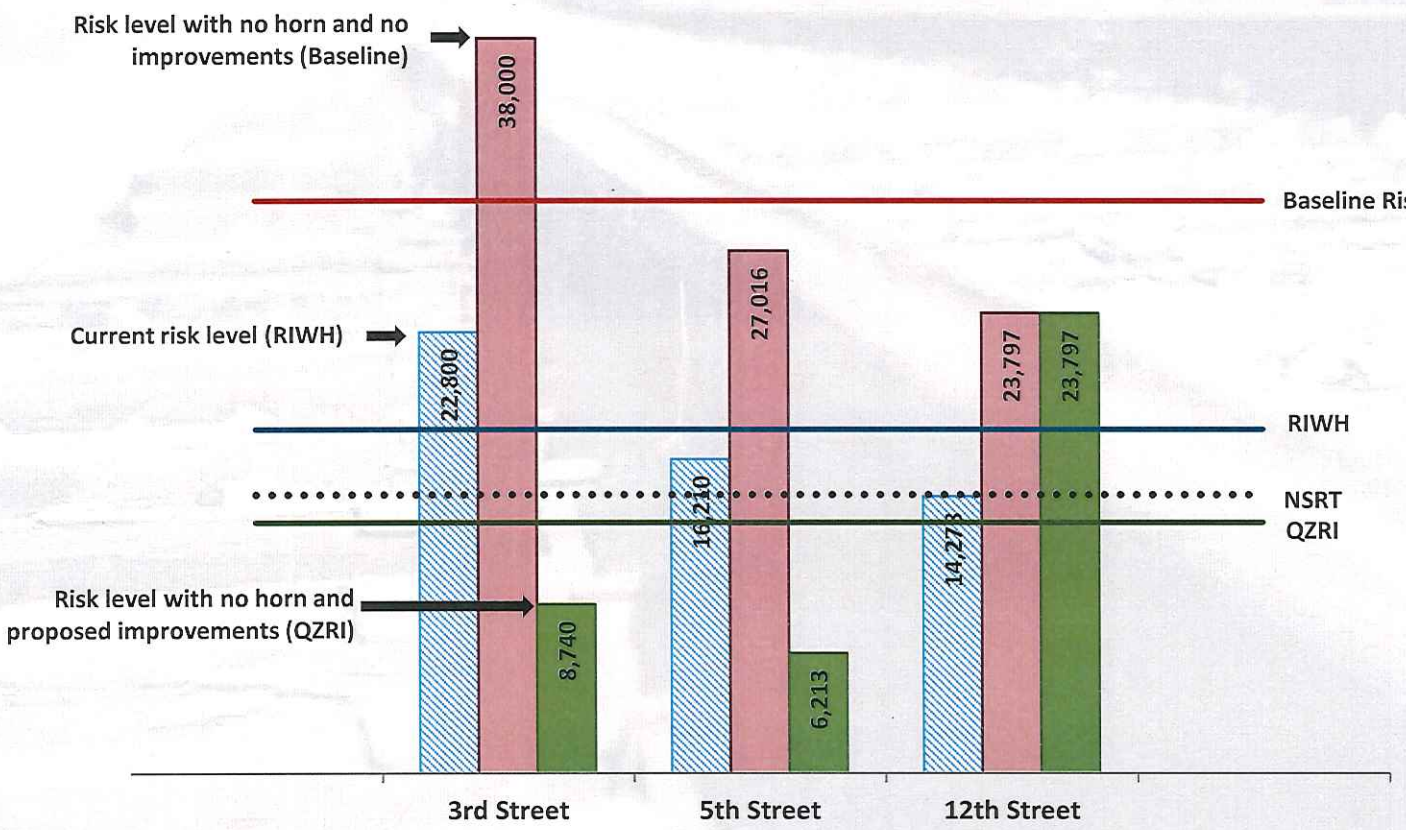
Quiet Zone Risk Example



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Supplementary Safety Measures (SSMs)

- Four-quadrant vehicle gates
- Medians/channelization devices
- Closure (temporary or permanent)
- One-way street
- Wayside horns

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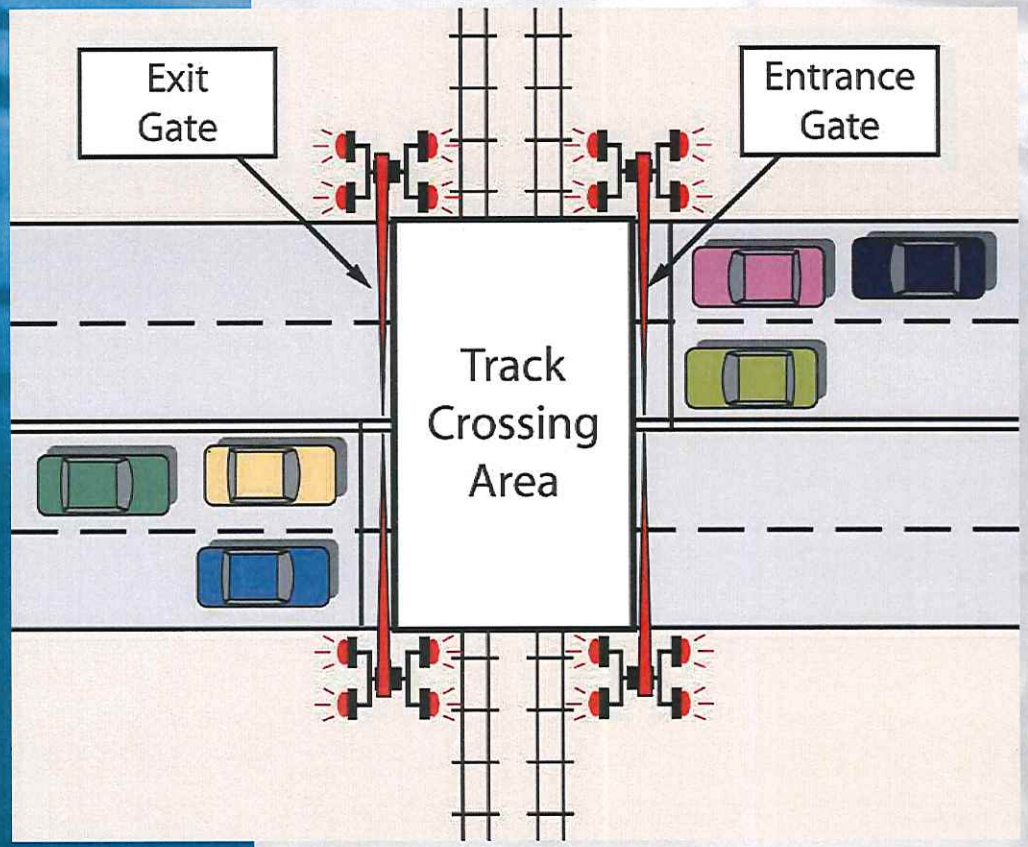
Four-Quadrant Vehicle Gates



- Cost w/ detection = $700K
- Railroad agreement
- Maintenance costs = $7K annually
- Railroad controls:
  - Installation requirements
  - Construction schedule
  - Cost
- No access impacts
- 77-82% risk reduction

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Four-Quadrant Gate Example

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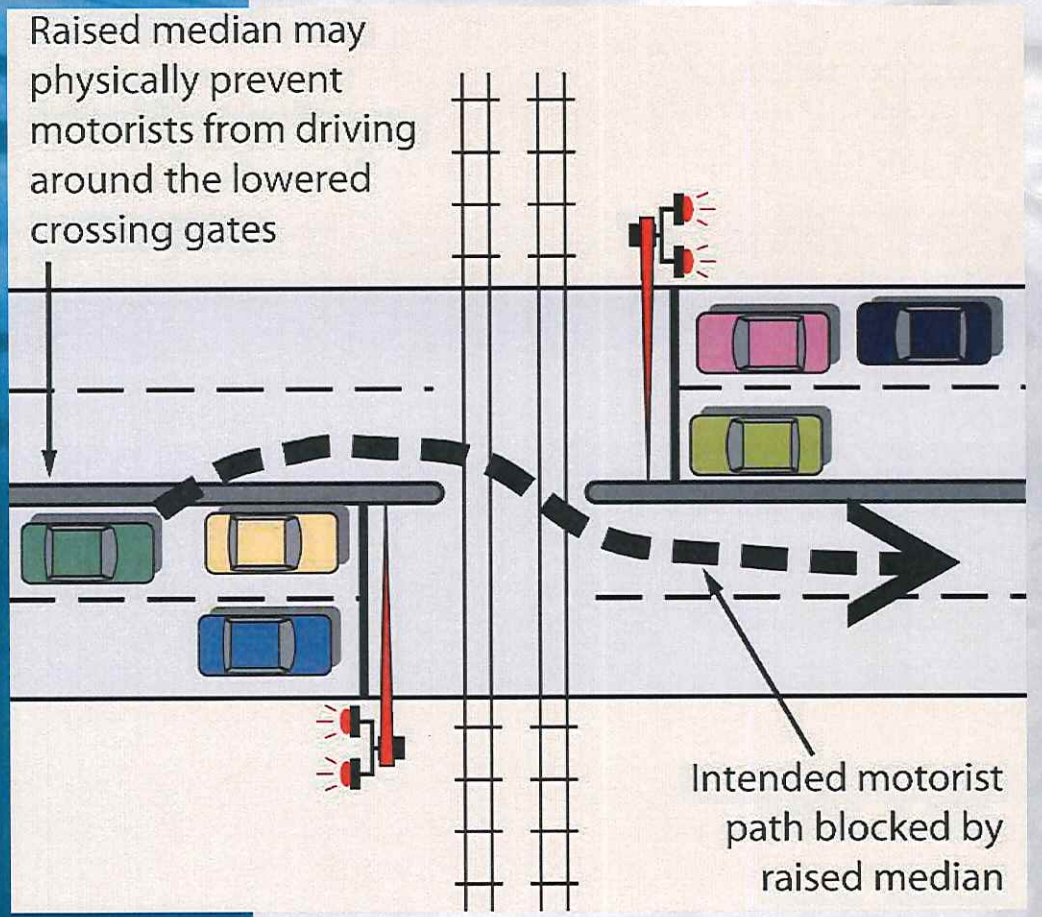
Non-Traversable Medians/ Channelization Devices



- Cost = $10 - 100K
- Minimal maintenance costs
- City controls:
  - installation
  - scheduling
  - Cost
- 75-80% risk reduction

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Non-Traversable Median Example

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Channelization Device Example

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Channelization Device Example

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Crossing Closure

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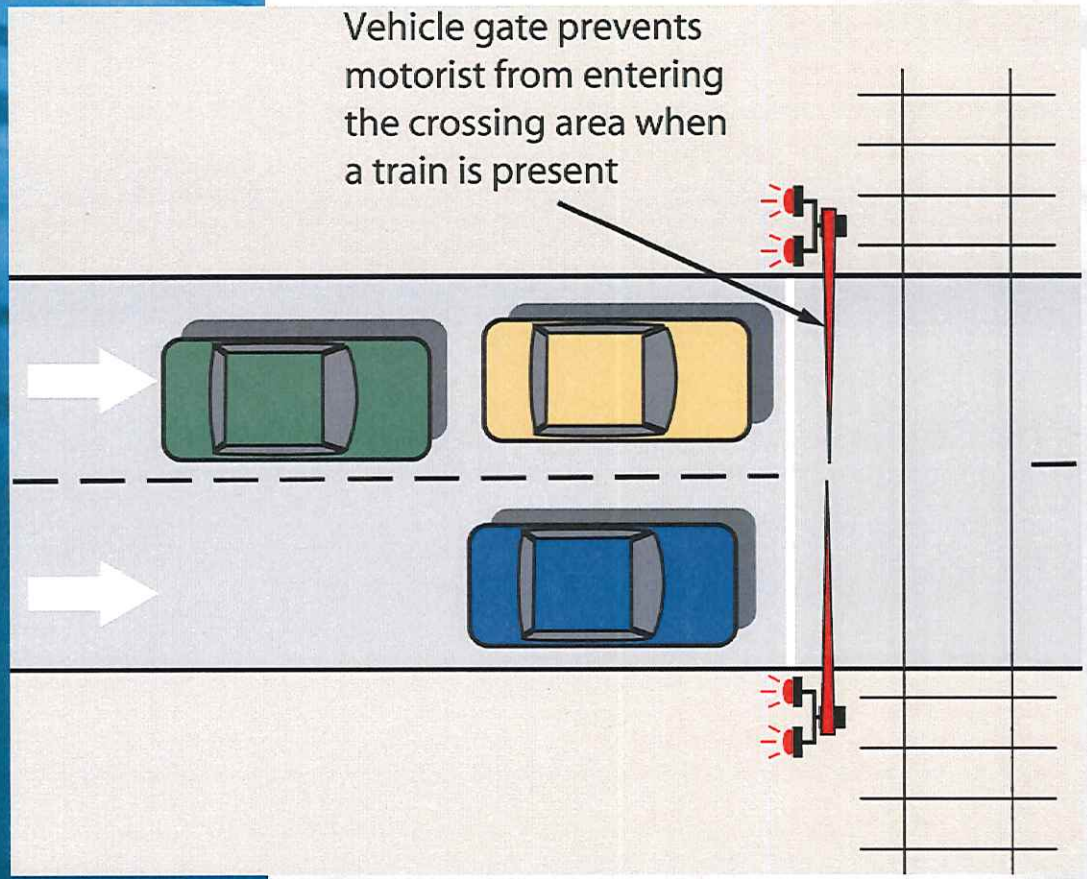
One-Way Street



- Costs variable
  - Gate relocation?
  - Street conversion?
- Typically done as one-way pairs
- 82% risk reduction

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Wayside Horns

- Cost w/ detection = $100K
- Annual maintenance costs = $5K
- Stationary horn sounded in place of train horn
- Railroad installs train detection system – requires RR Agreement
- No access impacts
- Less expensive than four-quadrant gates
- Equal risk to train horn

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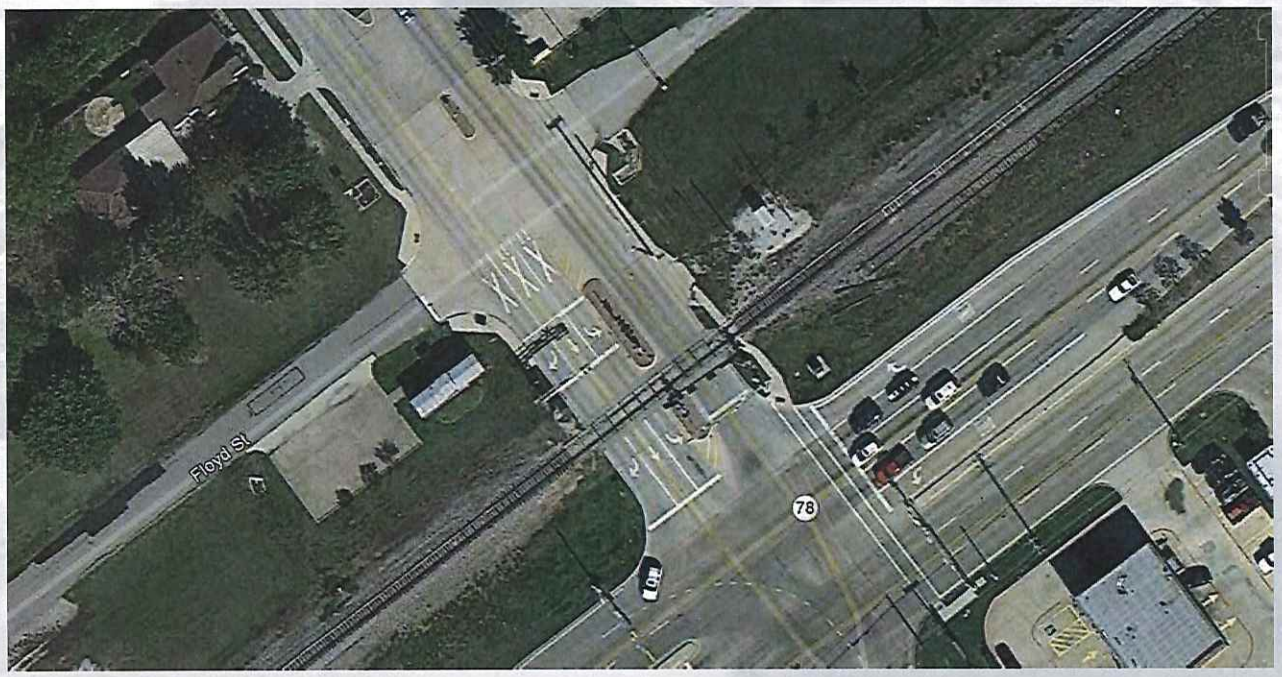
Alternative Safety Measures (ASM)

- Reduced Length Non-Traversable Medians/Channelization Devices



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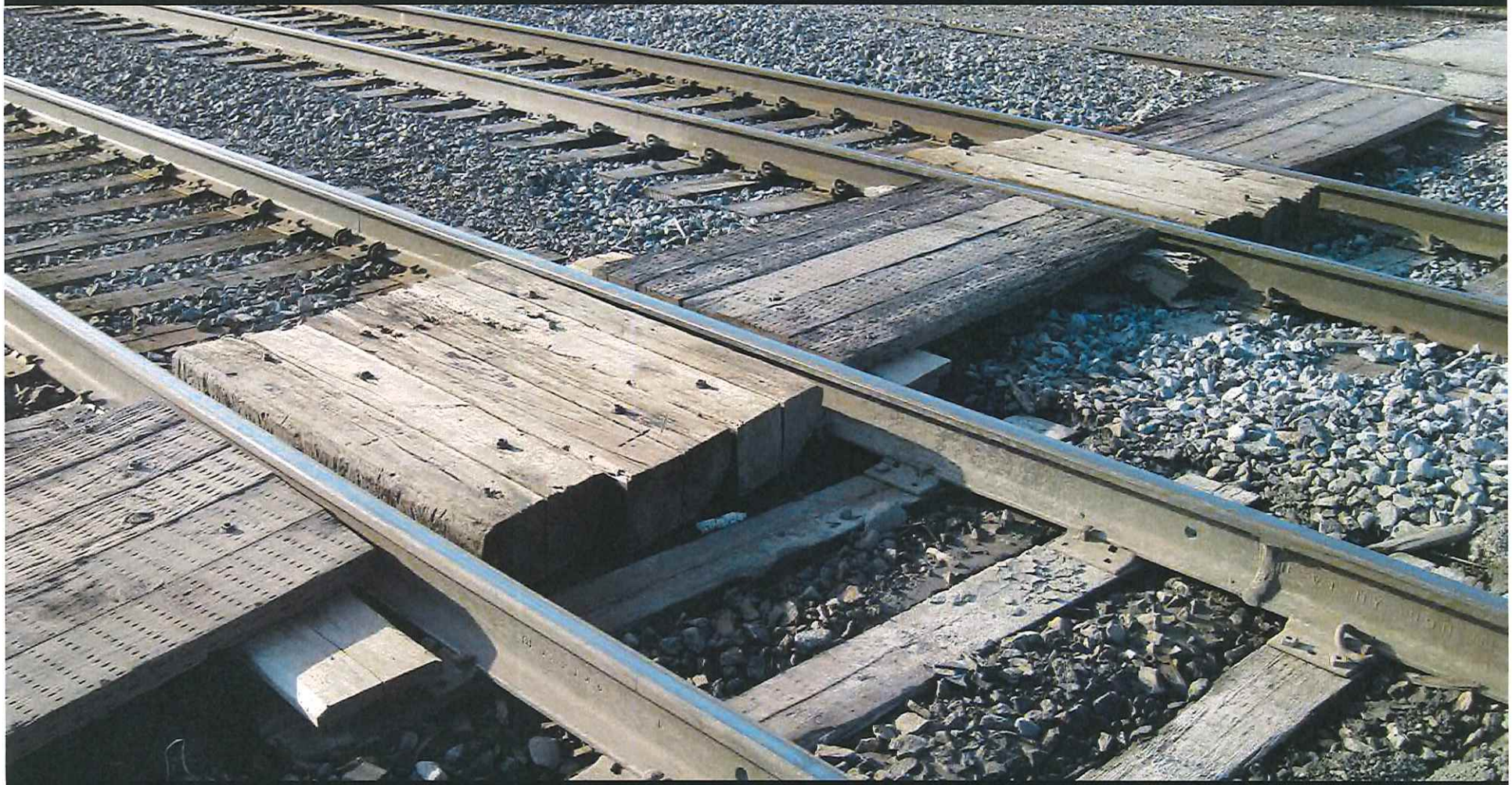
Pedestrians



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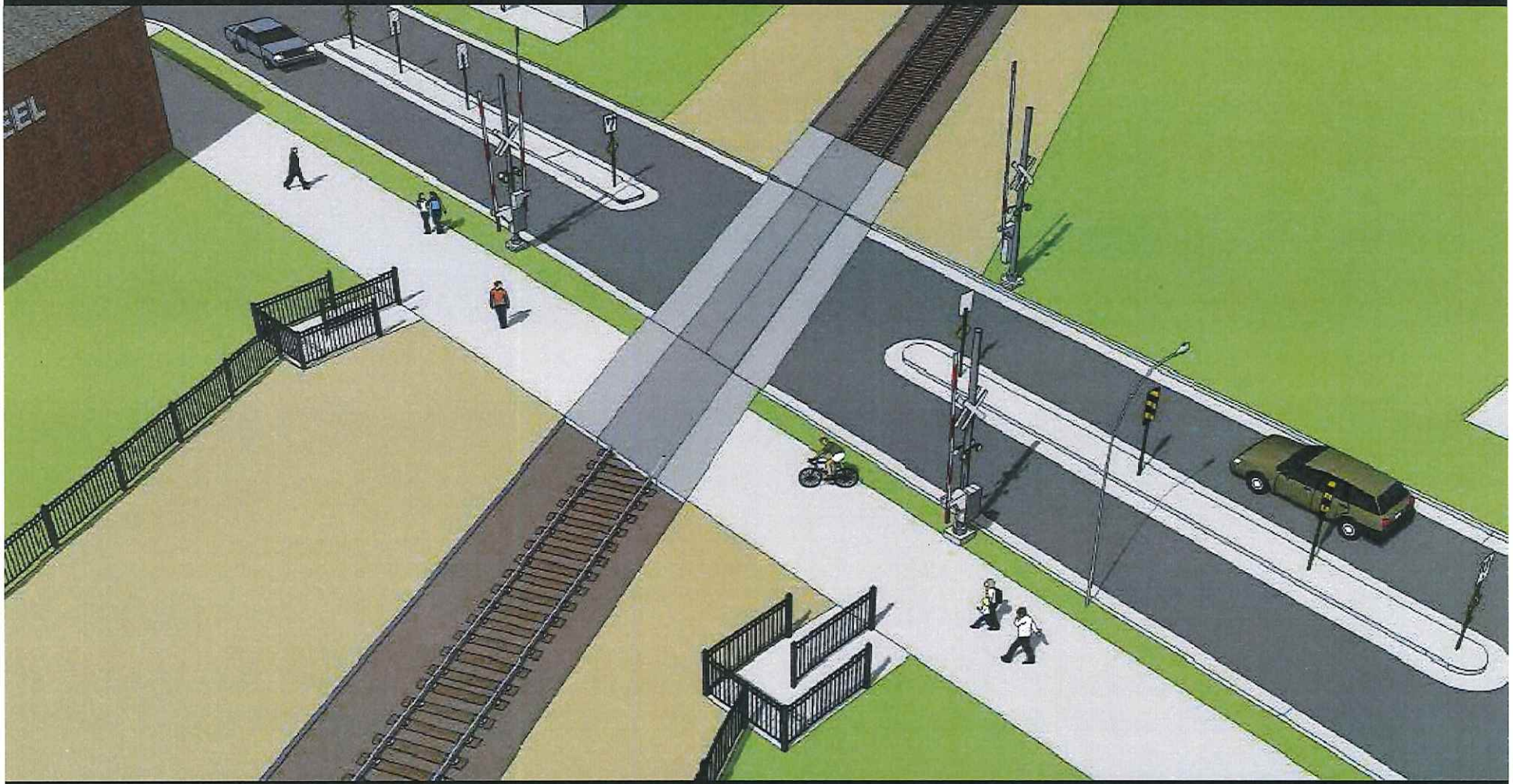
Pedestrians



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Diagnostic Meeting

- Site visit to review all RR crossings
- Representatives from:
  - City
  - County (if County Roads present)
  - State Department of Transportation
  - Federal Railroad Administration (FRA)
  - Railroad
  - Other Stakeholders
- Identify Potential Crossing Improvements

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Implementation Steps

1. Diagnostic Meeting
2. Determine Necessary Crossing Improvements
3. Notice of Intent
4. Application Required if ASMs are Used
5. Install Crossing Improvements
6. Notice of Establishment

Typical Quiet Zone Project takes 1-2 Years

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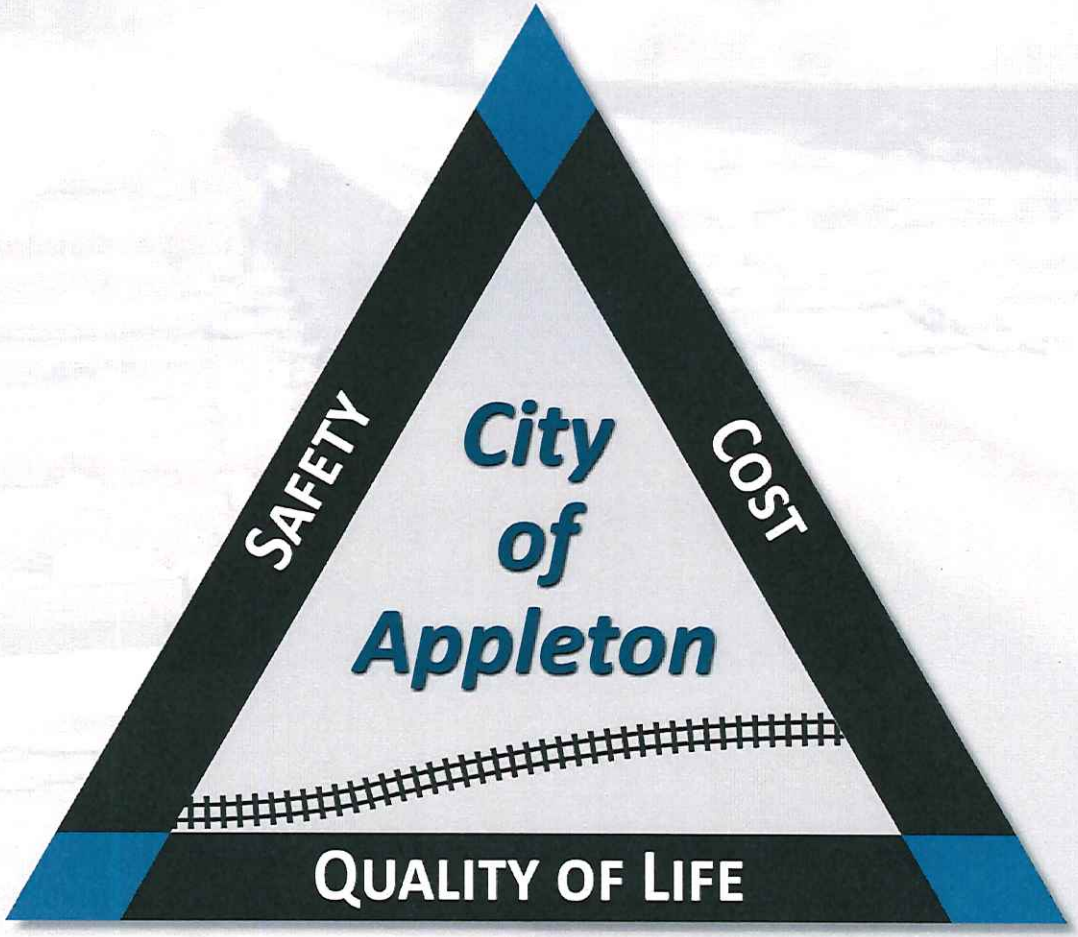
Quiet Zone Decision Process



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Questions?

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