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# Establishing the Downtown Railroad Quiet Zone

A Report by the Quiet Zone Advisory Committee

February 23, 2016

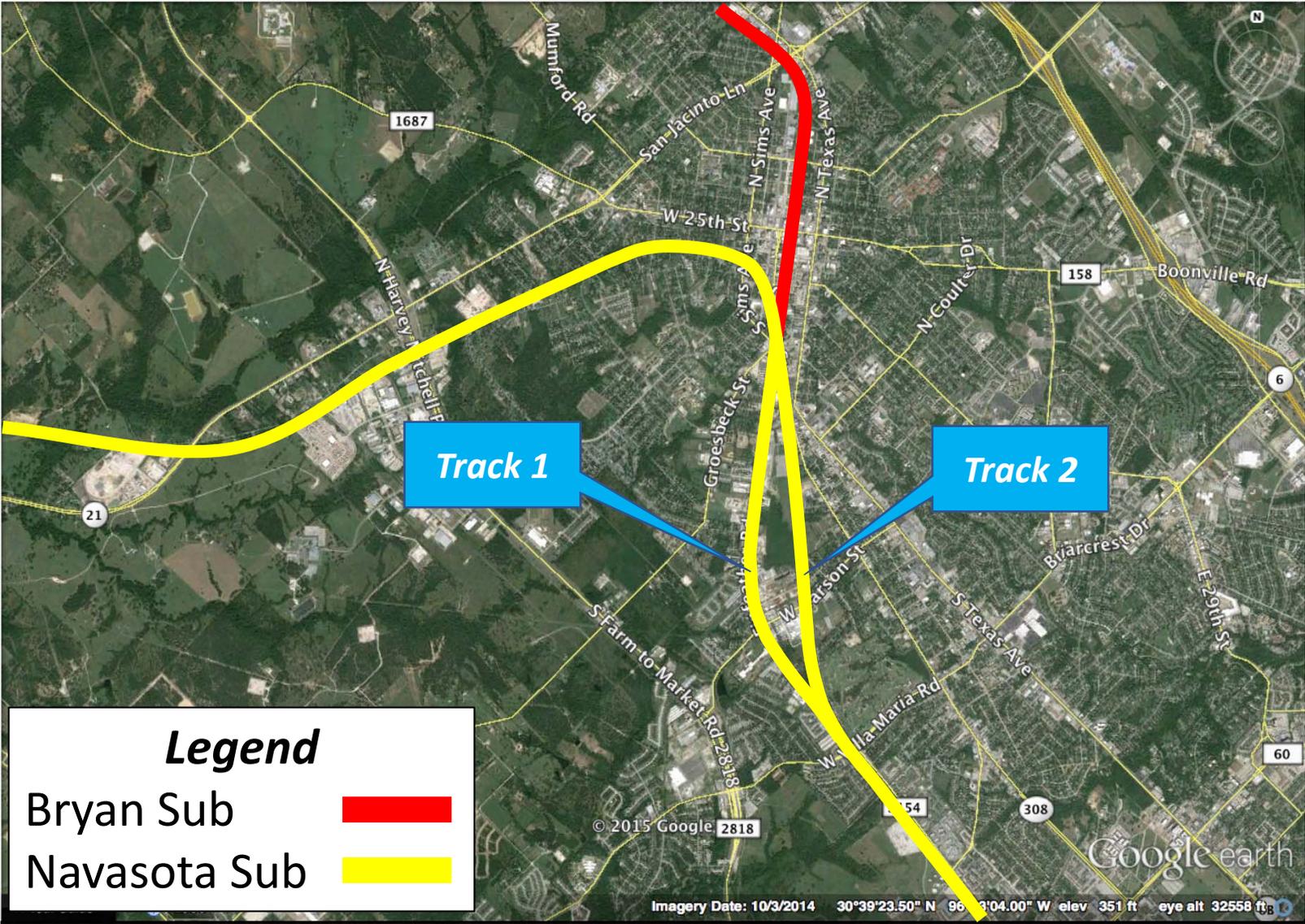
# Quiet Zone Advisory Committee

- Established by Council Action December 15, 2015
- Members
  - Council Member Al Saenz, SMD 1
  - Chris Lawrence, CEO, BCS Modern Living
  - Randall Spradley, Sr. VP, Aston Partners
  - Gary W. Schatz, P.E., Transportation Engineering Consultant
  - Solomon Nyanhongo, E.I.T., City of Bryan Traffic Operations
- Mission: Research and report to Council on the feasibility of implementing a quiet zone in and around downtown Bryan

# Railroad Crossing Inventory

- Two main lines owned by UPRR (Sole operator)
  - Navasota Subdivision (Sub)
    - 24 Trains per day south of Groesbeck Street
    - 14 Trains per day north of Groesbeck Street
  - Bryan Subdivision (Sub)
    - 10 Trains per day
- Citywide – 30 at-grade main line crossings
  - 28 public crossings – City of Bryan
  - 1 public crossing – TxDOT (FM 158/Wm. J. Bryan)
  - 1 pedestrian crossing – City of Bryan (Library)

# Railroad Crossing Inventory

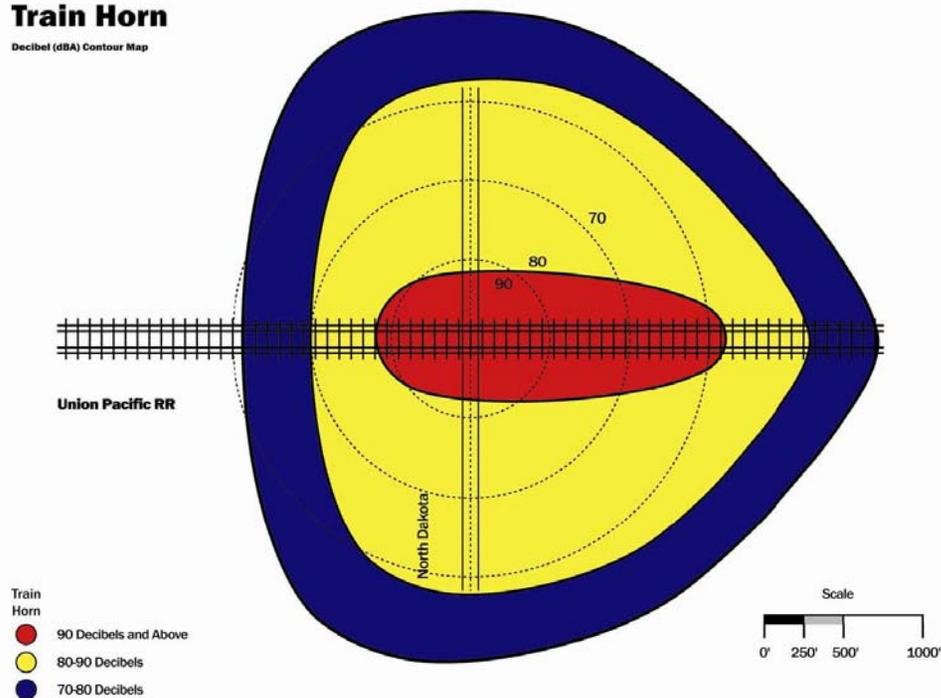


# Train Horn Sound Impact Area

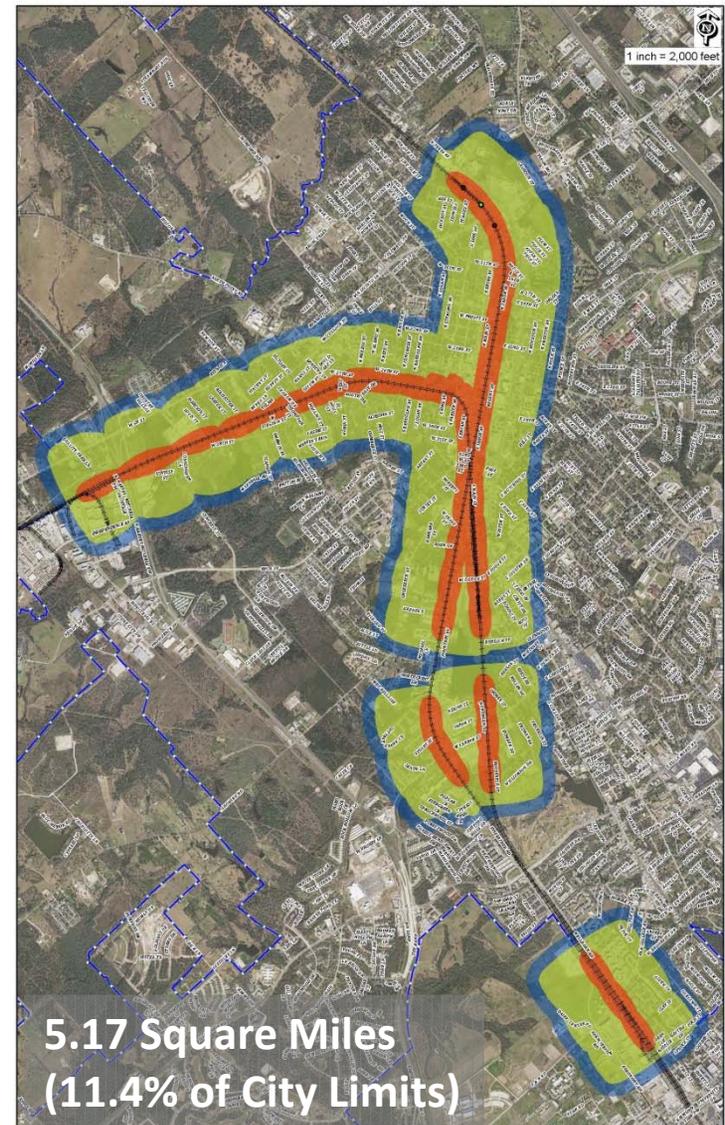
- Train Horn Sound Contours

## Train Horn

Decibel (dBA) Contour Map



*Image courtesy of CTC, Inc.*



# Railroad Quiet Zone Process

- *Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule (49 CFR Parts 222 and 229)*
  - All at-grade crossings have risk of crash
  - No train horn - risk increases 66.8%
  - Enhance crossing safety to reduce risk
- Required Documents for FRA
  - Notice of Intent (NOI)
  - Application for Quiet Zone
  - Notice of Establishment (NOE)

# Quiet Zone Strategies

- Optimize timeline of activities
- Minimize trackside improvements
- Minimize Quiet Zone Risk Index
- Utilize innovative designs
- Consider aesthetics
- Minimize future maintenance needs
- Leverage partnering opportunities

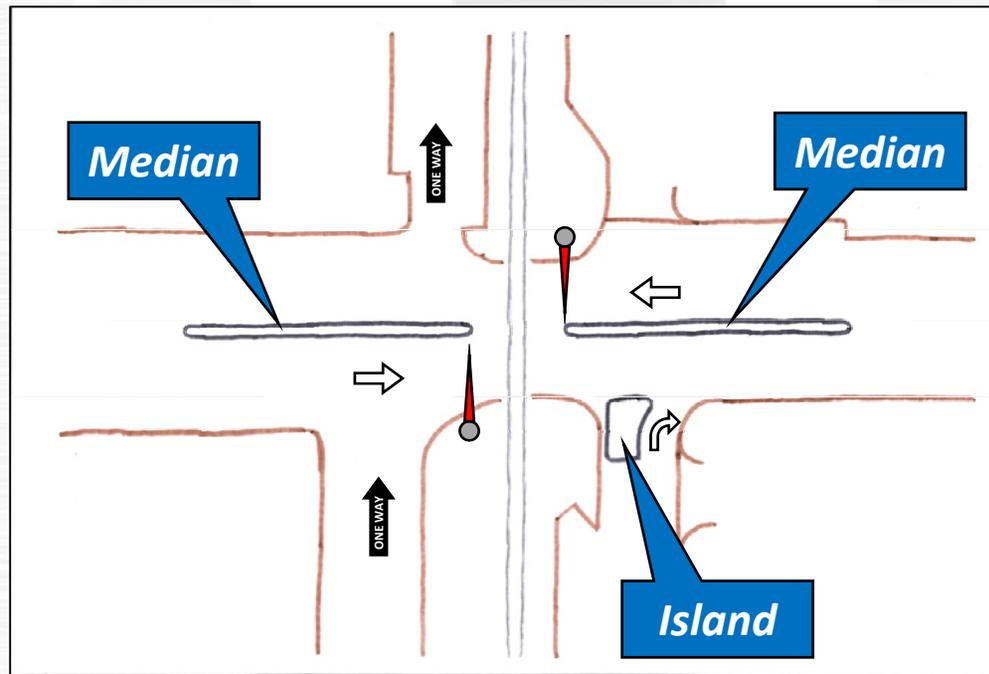
# Downtown Quiet Zone

- Proposed Downtown Quiet Zone – 25 Crossings:

<b><i>Navasota Sub:</i></b>		<b><i>Bryan Sub:</i></b>	
Pease (Trk 2)	Parker	S. Main	E. 24th
Groesbeck (Trk 1)	S. Sims	E. 32 <sup>nd</sup>	E. 23 <sup>rd</sup>
Groesbeck (Trk 2)	S. Reed	E. 29 <sup>th</sup>	E. 22 <sup>nd</sup>
W. 32 <sup>nd</sup>	Brazos	E. 28 <sup>th</sup>	E. Martin L. King
W. 29 <sup>th</sup>	Graham	Library Walkway	E. 15 <sup>th</sup>
Bryan/W. 28 <sup>th</sup>	W. 28 <sup>th</sup>	E. 26th	N. Sims
		E. WJB/FM 158	

# Quiet Zone Safety Improvements

- Gates with Channelization – 18 Crossings
  - Channelization owned and maintained by City
  - Aesthetic features to be considered in design



*E. 26<sup>th</sup> at UPRR*

# Quiet Zone Safety Improvements

- Permanent Closure of At-Grade Crossings
  - Recommended for one crossing
  - Considered for two other crossings
  - Likely controversial; stakeholder consensus important
  - Shifts traffic to other routes and crossings; risk indices change
  - Consider trial closure(s) of at least 90 days to gauge impacts and receive community comments

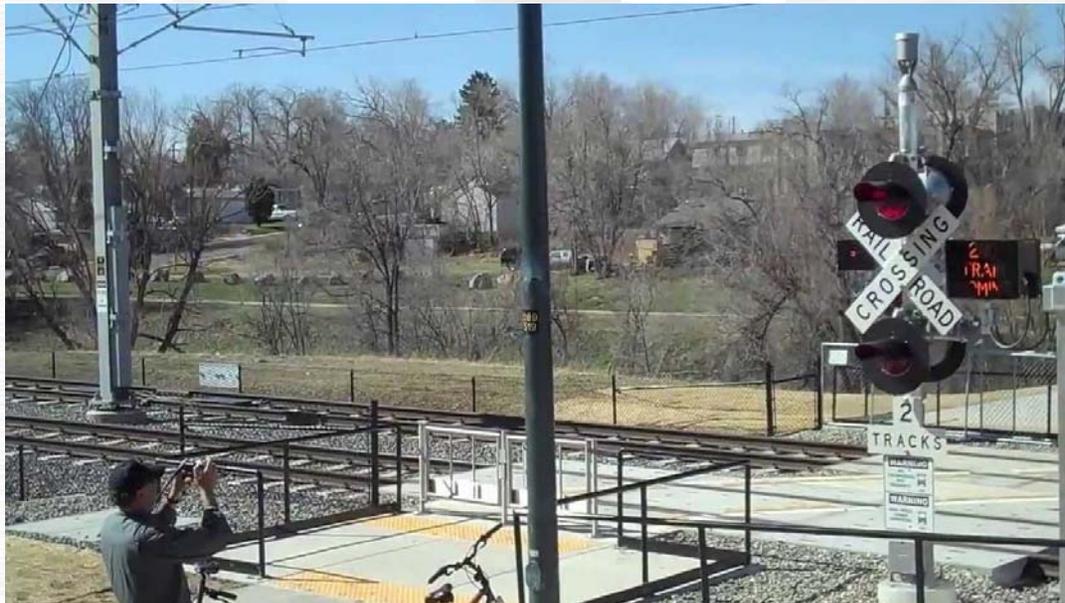
# Quiet Zone Safety Improvements

- Four-Quad Gate Systems
  - Required for one crossing; considered for two other crossings
  - Owned and maintained by UPRR
  - \$1,350,000 (est'd) to install, paid by City
  - Annual maintenance fee paid to UPRR (up to \$10k)



# Quiet Zone Safety Improvements

- Pedestrian Gate System – Library Crossing
  - Crossing equipment owned and maintained by UPRR
  - Fencing and approaches owned and maintained by City
  - \$450,000 (est'd) to install, paid by City
  - Annual maintenance fee paid to UPRR (up to \$10k)



# Quiet Zone Safety Improvements

- Wayside Horns
  - Required for one crossing; may encounter technical challenges
  - Used in lieu of locomotive horn
  - Smaller sound impact area
  - Interconnected with railroad signal equipment
  - Installed on railroad right-of-way
  - \$165,000 (est'd) per crossing
  - City owns and maintains equipment



*Image courtesy of CTC, Inc.*

# Quiet Zone Safety Improvements

- Wayside Horns

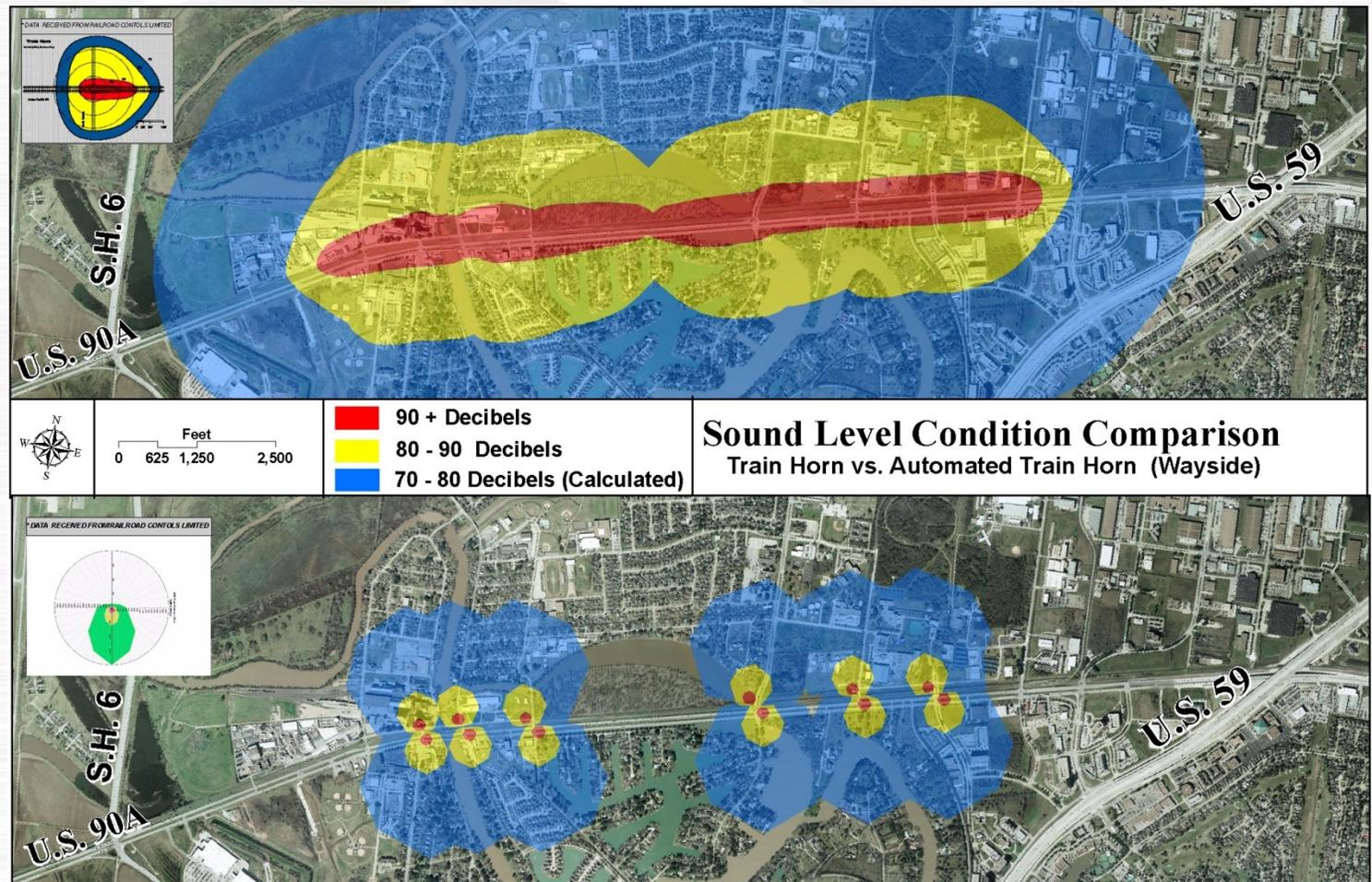
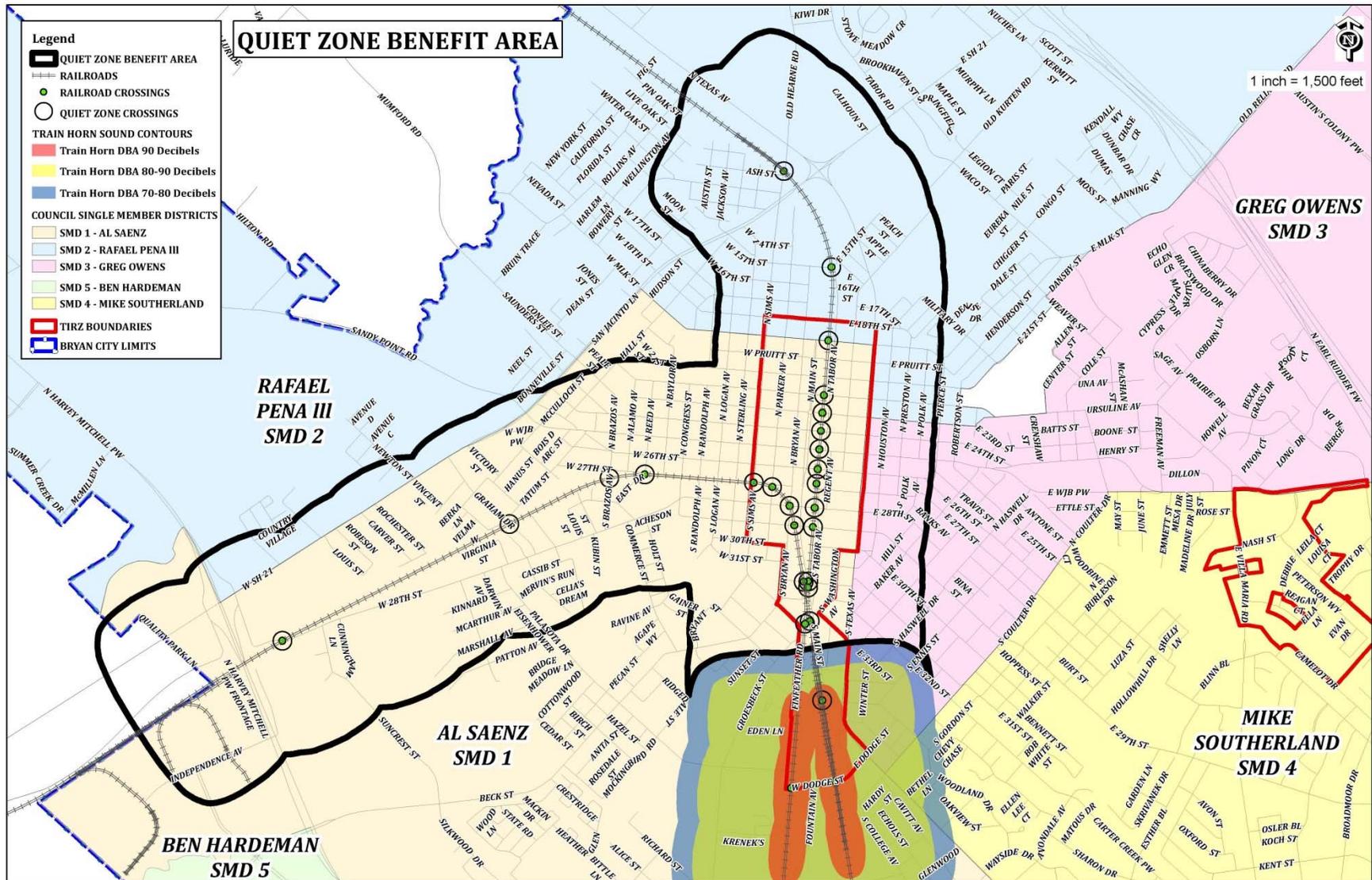


Image courtesy  
of CTC, Inc.

# Quiet Zone Benefit Area



# Downtown Quiet Zone Options

- Two Preferred Options for Establishing Quiet Zone

- Option 1

• 18 Crossings – Channelization Only	\$197,528
• N. Sims – Channelization + Signal*	\$338,019
• S. Sims – Quad Gates	\$1,353,354
• S. Reed – Full Closure	\$34,216
• Library Walkway – Pedestrian Gates	\$455,092
• Pease – Wayside Horns	\$165,053
• Groesbeck – Quad Gates + Roundabouts	\$1,483,432

- Estimated Potential Budget **\$4,026,694**

\* Subject to approval by TxDOT

# Downtown Quiet Zone Options

- Two Preferred Options for Establishing Quiet Zone

- Option 2

• 18 Crossings – Channelization Only	\$197,528
• N. Sims – Channelization + Signal*	\$338,019
• S. Sims – Quad Gates	\$1,353,354
• S. Reed – Full Closure	\$34,216
• Library Walkway – Pedestrian Gates	\$455,092
• Pease – Wayside Horns	\$165,053
• Groesbeck – Full Closure	\$35,932

- Estimated Potential Budget **\$2,579,194**

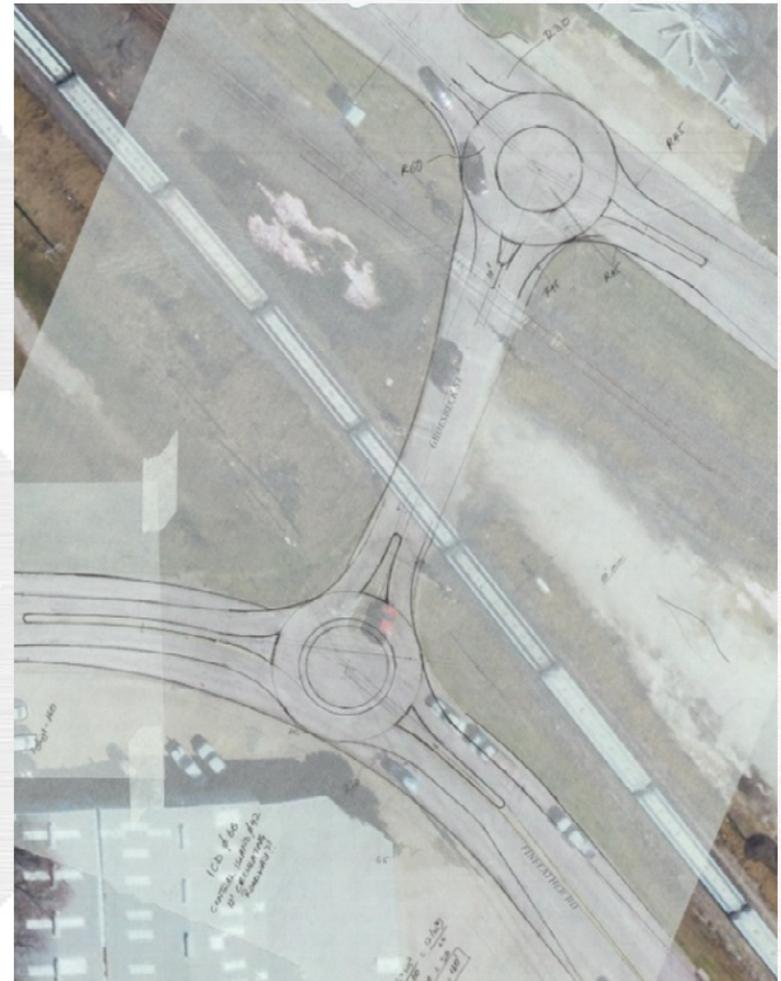
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# Downtown Quiet Zone Options

- Reed Street crossing
  - Requires Four-Quad Gate System to remain open
  - Consider implementing trial closure of crossing for at least 90 days to determine possible impacts
- Brazos Street crossing
  - Train detection equipment upgrade required for quiet zone
  - Equipment upgrades for quiet zones funded by requester
- TxDOT has offered to fund upgrade of train detection equipment for Brazos Street crossing *provided* City of Bryan permanently closes Reed Street crossing (\$300,000 savings)

# Downtown Quiet Zone Options

- Groesbeck Street Crossings
  - Requires Four Quad Gate System and mini roundabouts to remain open
  - Alternative to mini roundabouts is traffic signals (\$500,000)
- Closure of crossing results in cost savings of \$1.4 million
- Potential for financial incentives from UPRR and TxDOT



# Downtown Quiet Zone Options

- Groesbeck Street Crossings – Challenges
  - 3<sup>rd</sup> busiest crossings in Bryan (after WJB and S. Main)
  - May require capital improvements to offset impacts
  - Consider trial closure for at least 90 days to determine possible impacts
  - If crossings remain open, consider implementing trial temporary mini roundabouts

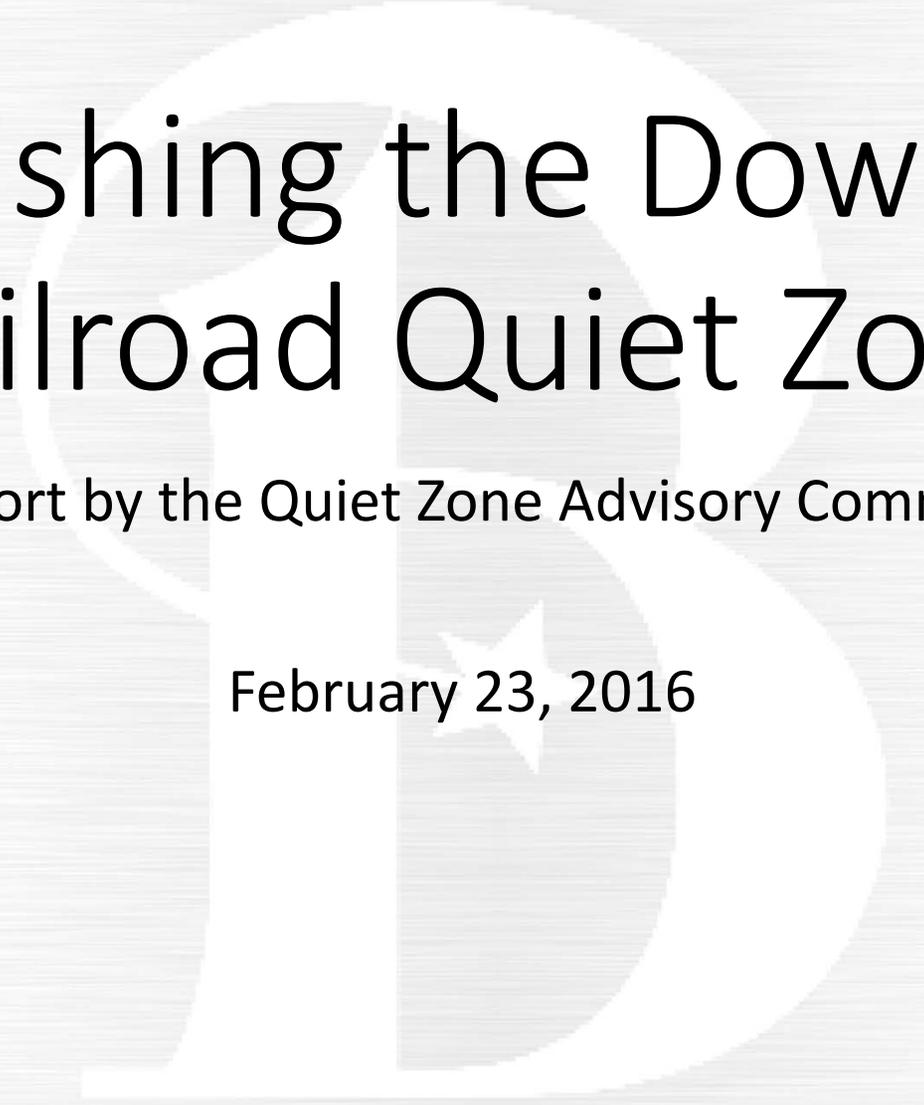


*Temporary testing of a mini roundabout  
at Broadmoor Drive and Nash Street*

# Pending Action Items

- Updated traffic counts \$18,000
- UPRR: Preliminary Engineering \$20,000
- Railroad Engineering Consultant:  
Preliminary Engineering of Pedestrian  
Crossing and Wayside Horns \$22,700
- Diagnostic Inspection
  - City of Bryan
  - UPRR
  - FRA
  - TxDOT
  - Railroad Engineering Consultant



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