

Downtown Bryan Railroad Quiet Zone: Project Status and Recommendations

August 22, 2017

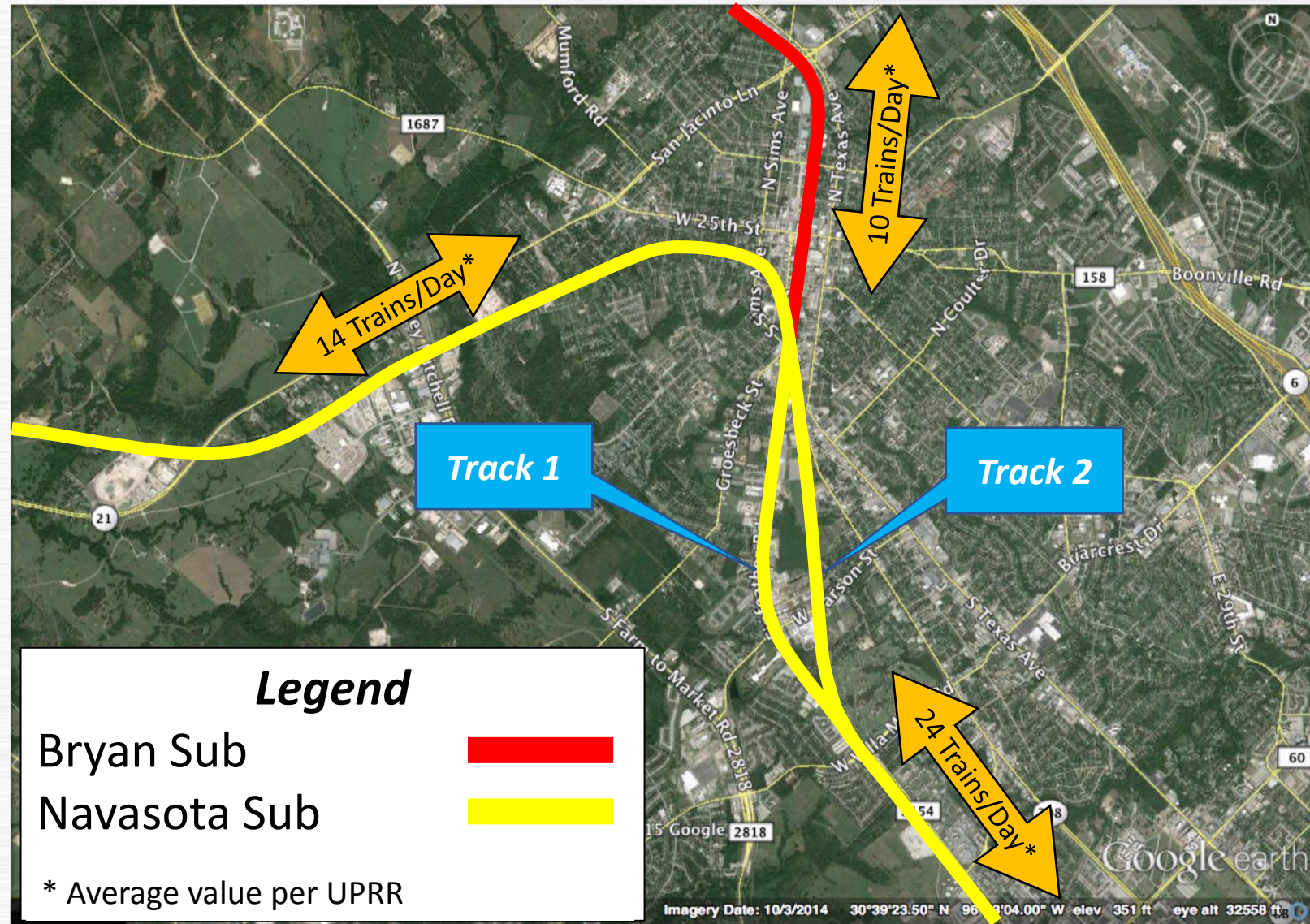
Quiet Zone Advisory Committee

- Established by Council Action December 15, 2015
- Members
 - Council Member Reuben Marin, SMD 1
 - Council Member Ben Hardeman, SMD 5
 - Chris Lawrence, CEO, BCS Modern Living
 - Randall Spradley, Sr. VP, Astin Partners
 - Paul Kaspar, P.E., City Engineer
 - Gary W. Schatz, P.E., Transportation Engineering Consultant
- Mission: Research and report to Council on the feasibility of implementing a quiet zone in and around downtown Bryan

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)
 - Public Agency Application (PAA)
 - Notice of Establishment (NOE)

Railroad Crossing Inventory



At-Grade Main Line Crossings:

City of Bryan	28
TxDOT (FM 158/WJB)	1
Pedestrian Crossing @ Library	1

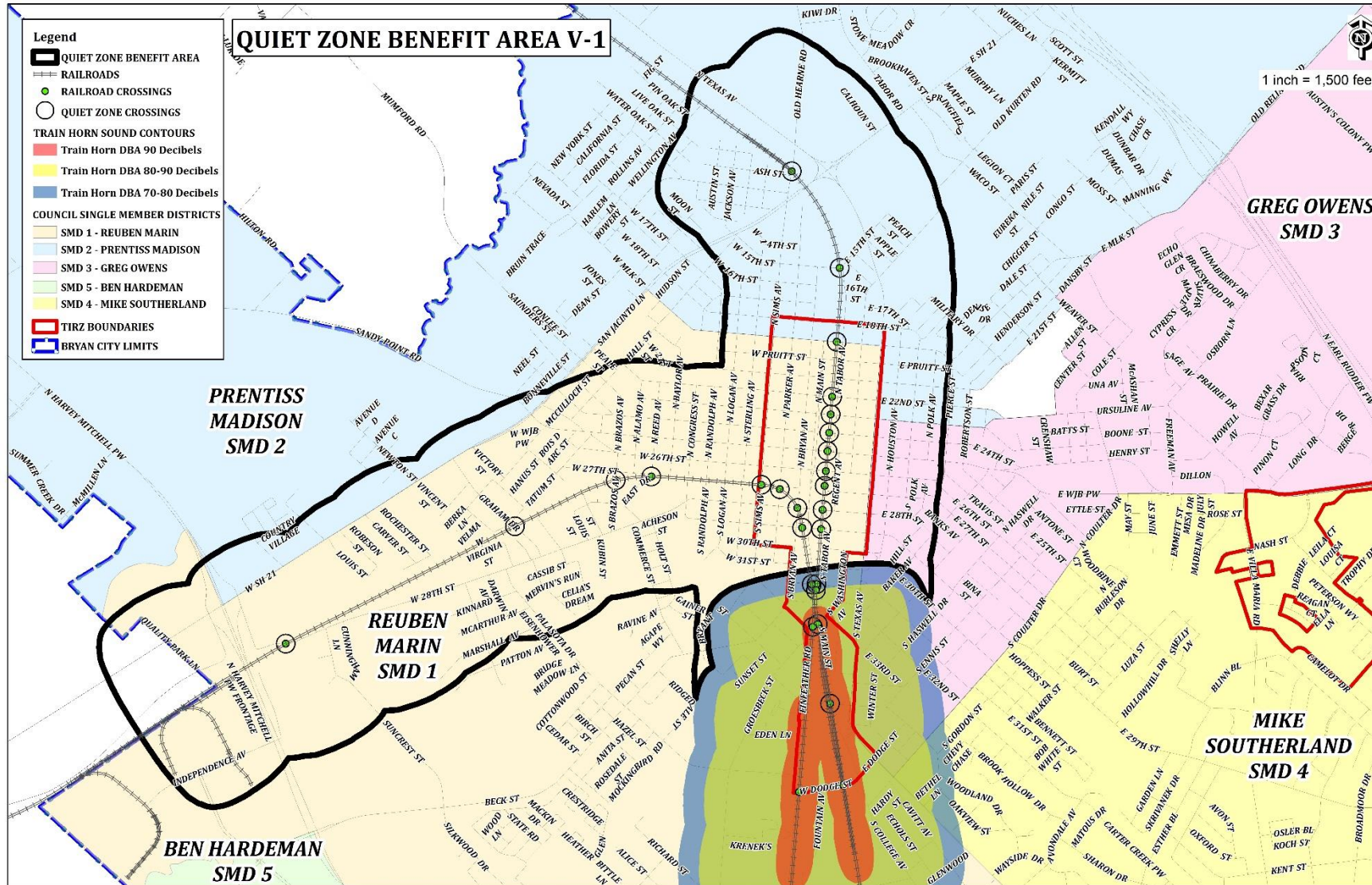
Total 30

Downtown Quiet Zone

- Proposed Downtown Quiet Zone – 25 Crossings:

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

Quiet Zone Benefit Area



Quiet Zone Establishment - Update

- Issued Quiet Zone Notices of Intent April 5, 2017

- No comments received from FRA, TxDOT, Brazos County
- Response received from UPRR 6/17/17:

Corporate policy – UPRR does not agree with quiet zone safety benefits; however, UPRR will abide by FRA regulations and looks to others to do so as well.

E. 15th Street - Advocates for permanently closing the crossing

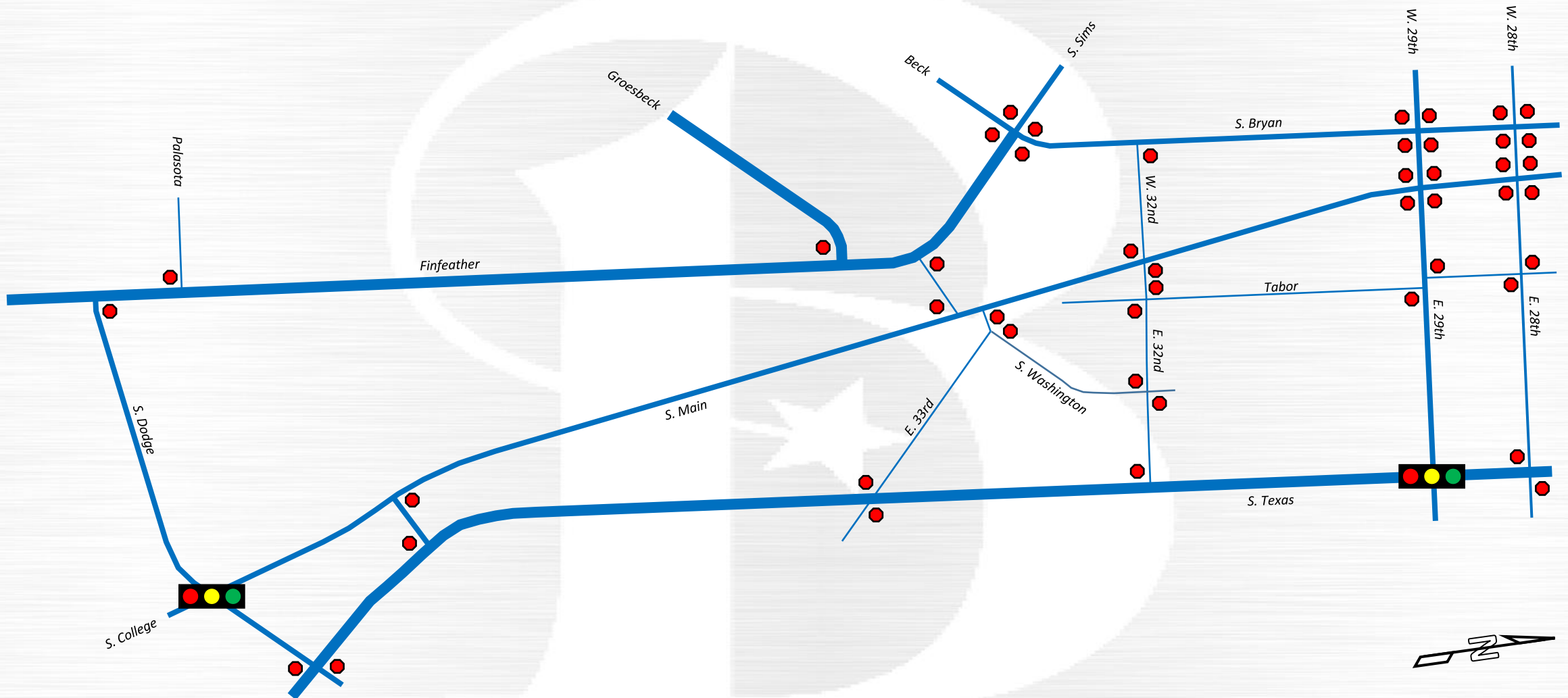
Groesbeck Street - Advocates to permanently close the crossings

South Reed Avenue - Acknowledges the City's proposal to close the crossing

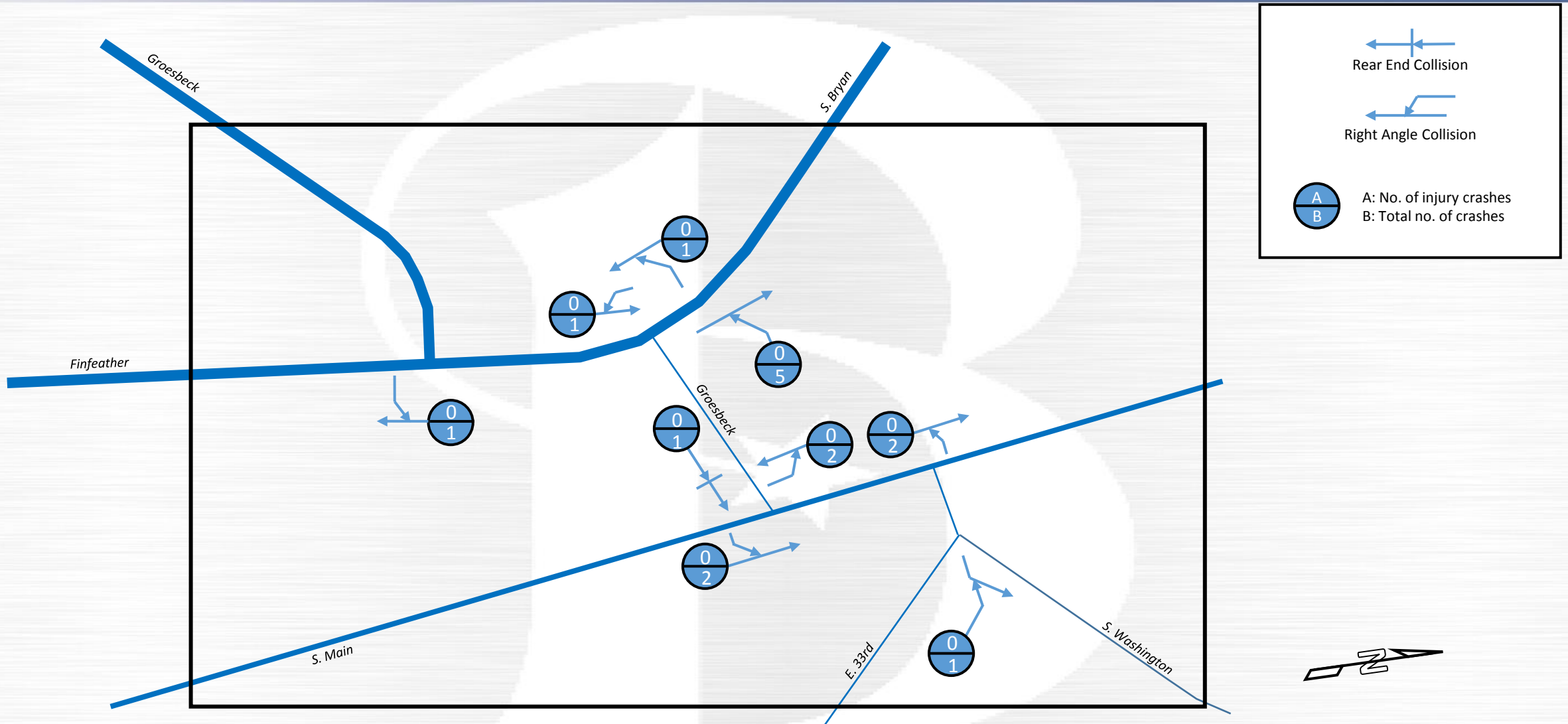
Area Roadway Network



Area Roadway Network



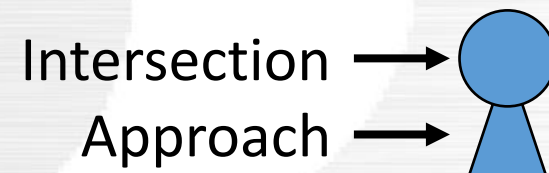
Crash History – August 2014 to August 2017



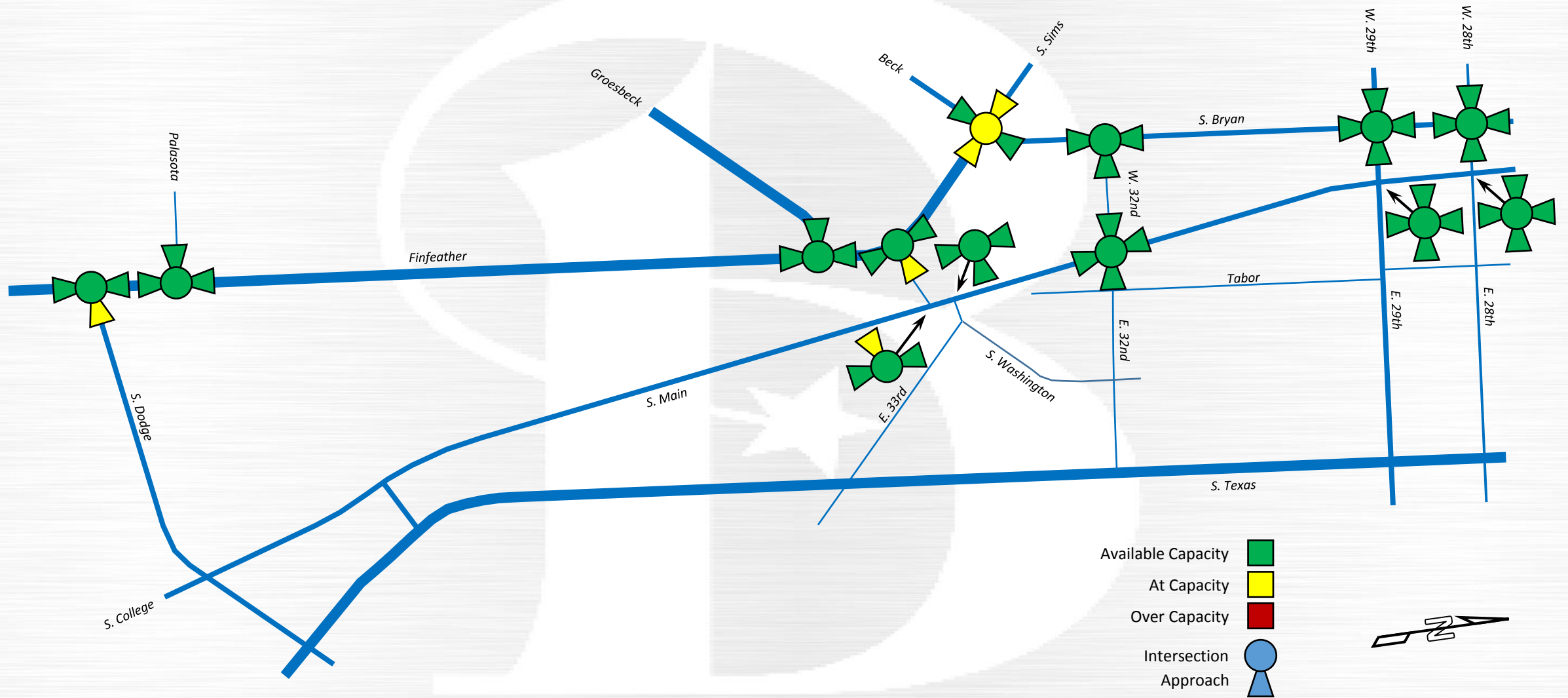
Intersection Capacity Analysis – PM Peak

- Traffic counts taken in 2016
- Weekday PM peak hour (4:30 – 5:30 PM) data analyzed
- Microsimulation model (Synchro)
- Volume-to-Capacity ratios, average delay per vehicle
- Results for intersection and approaches presented in graphical format
- Analysis completed for present and for 2026 assuming 2% growth per year

Available Capacity
At Capacity
Over Capacity



Present Conditions – PM Peak

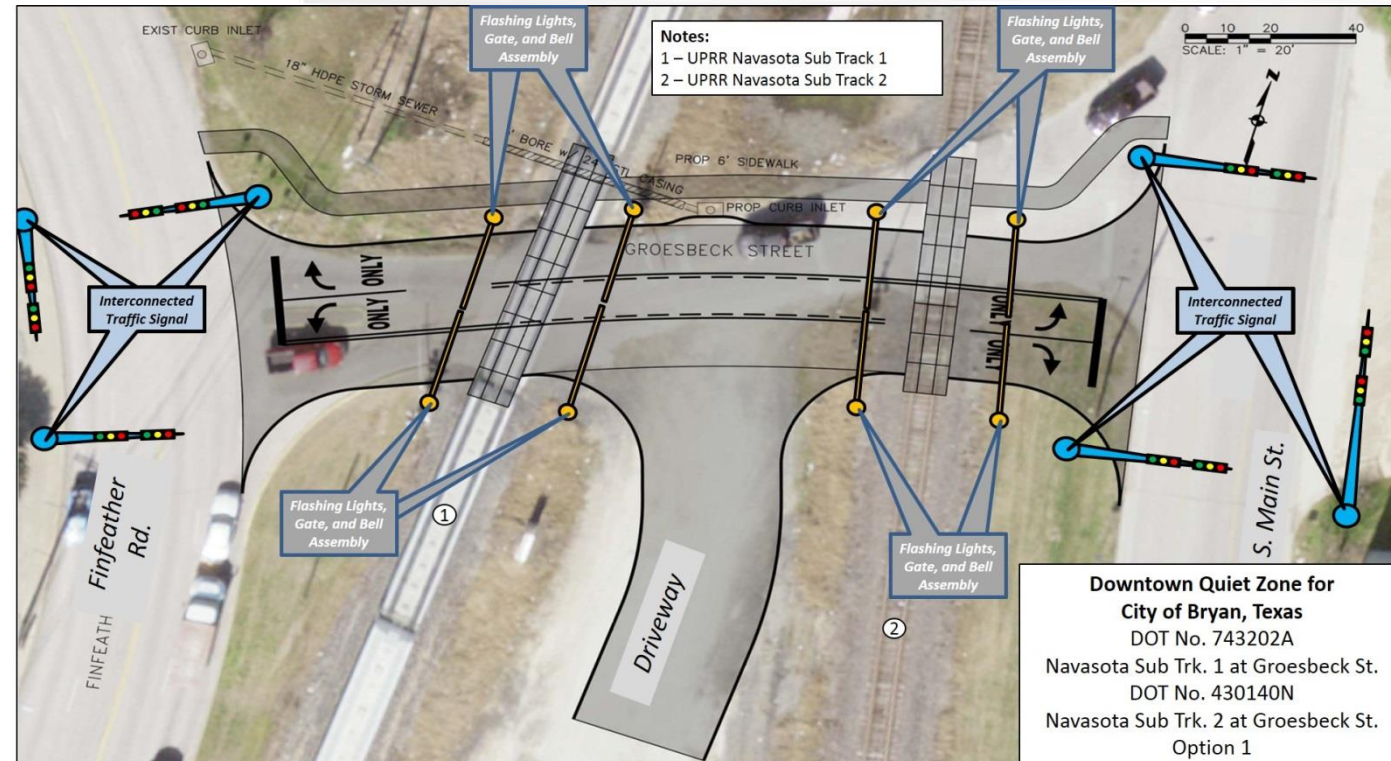


Present Conditions – PM Peak in 2026

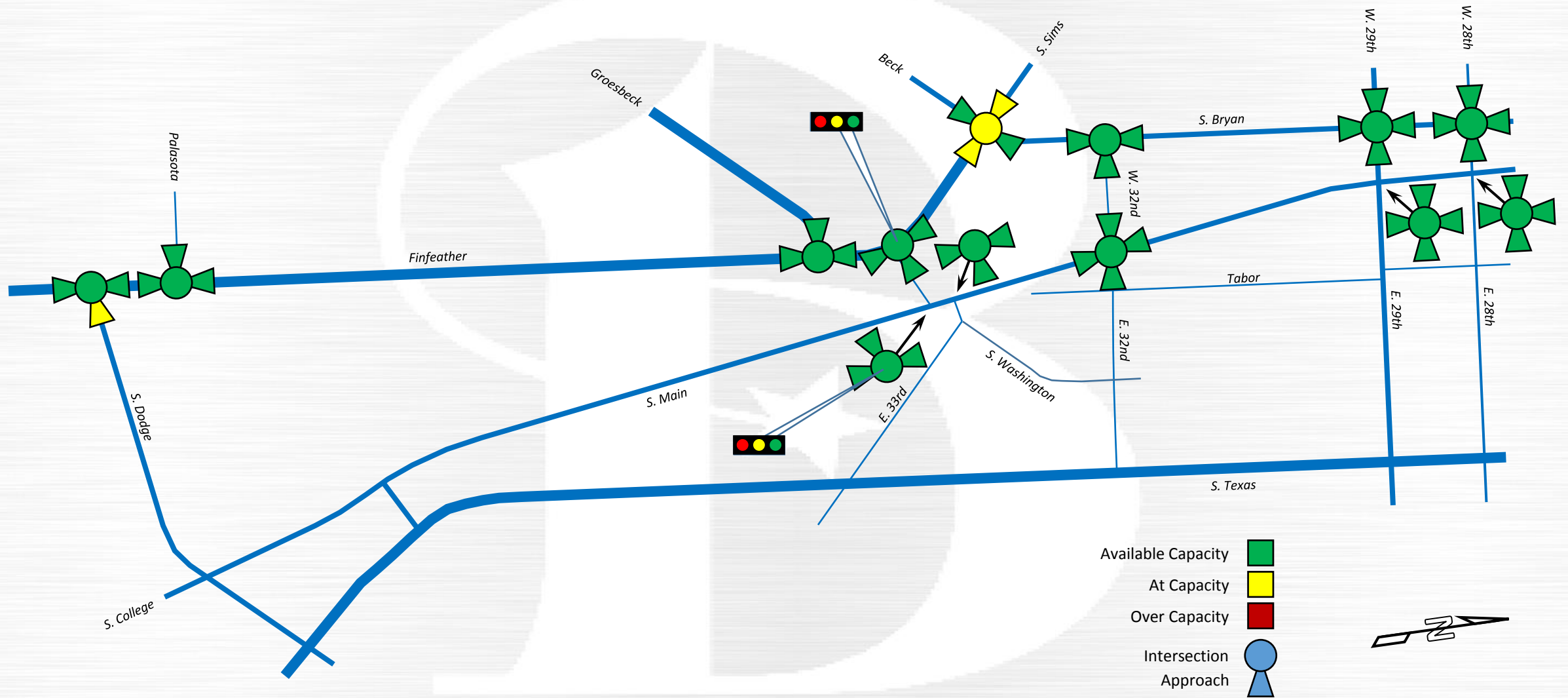


Groesbeck Open + Signals – PM Peak

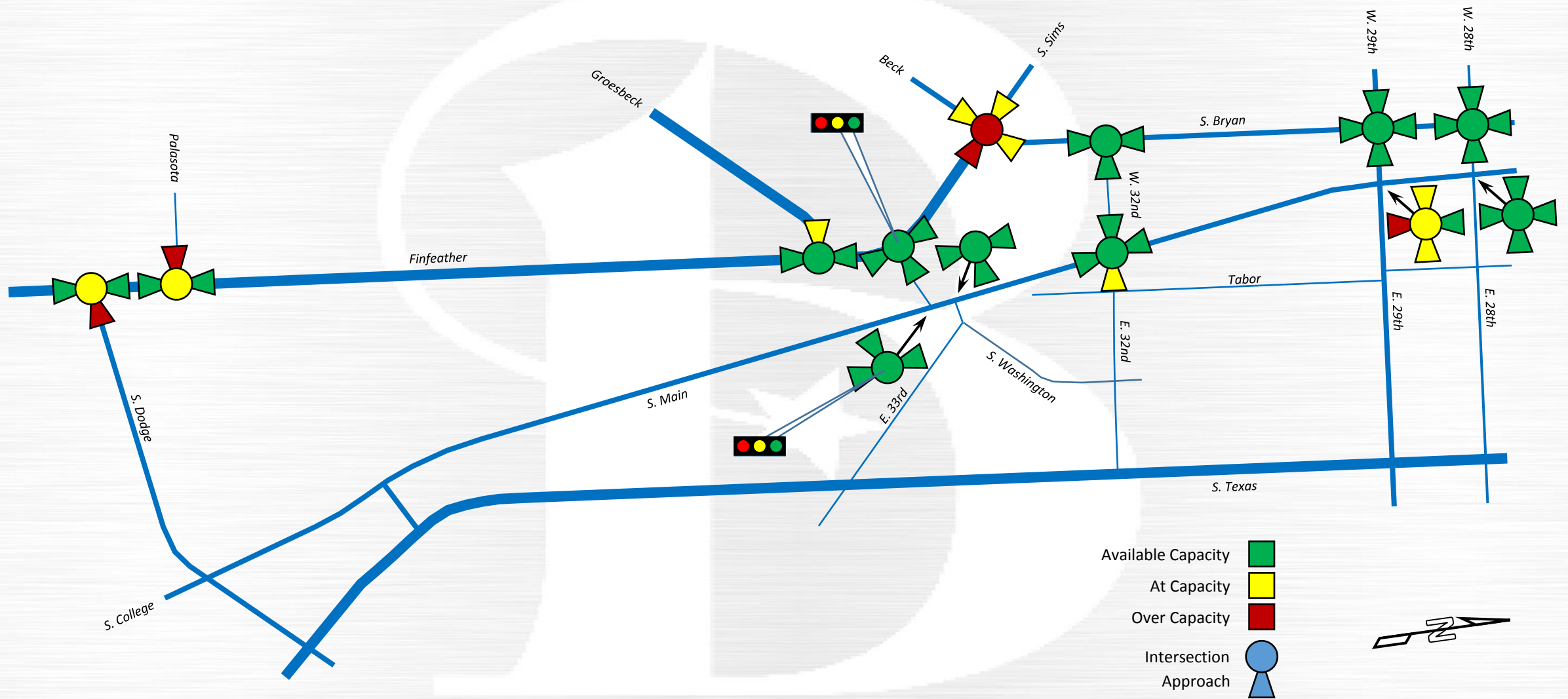
- Groesbeck reconstructed
- Signals replace stop signs
- Future improvements
 - New traffic signals
 - S. Bryan/S. Sims/Beck
 - Finfeather & Palasota
 - Finfeather & S. Dodge
 - S. Bryan & W. 29th
 - S. Main & 29th
- Impacts during construction
 - Leave open, shift new roadway south and build parallel roadway?
 - Close for construction and build temporary traffic signals?



Groesbeck Open + Signals – PM Peak

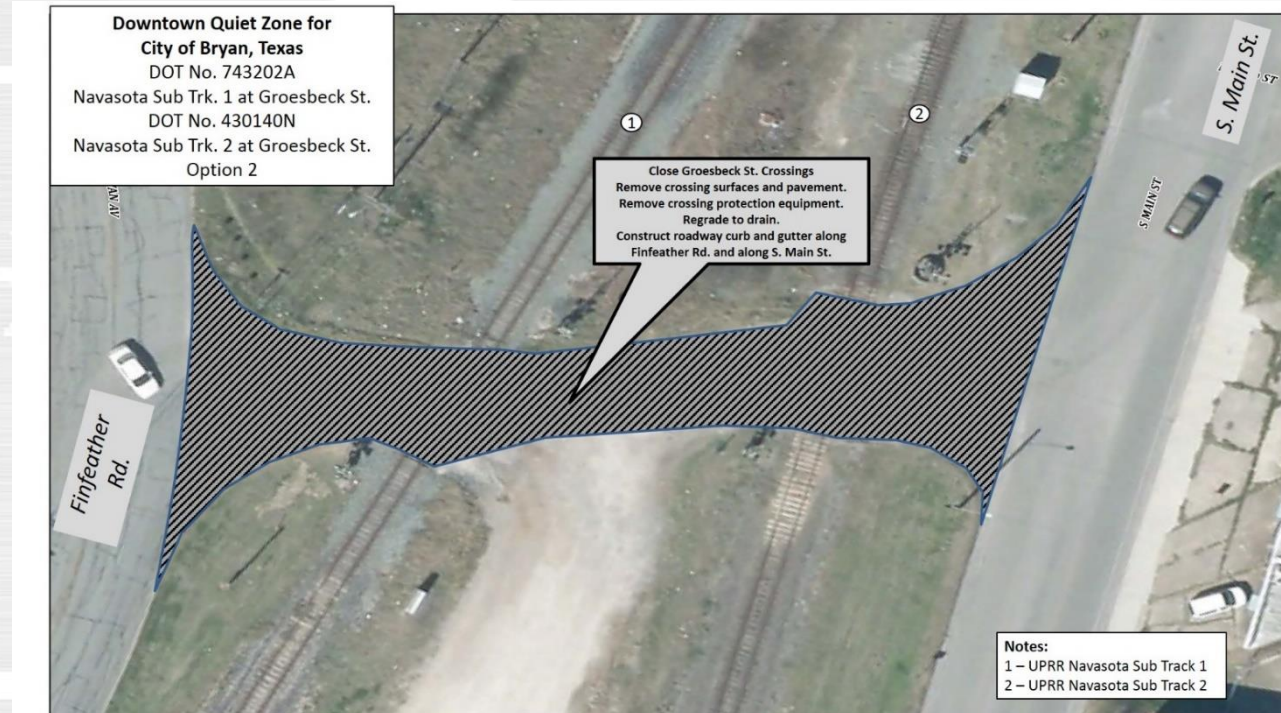


Groesbeck Open + Signals – PM Peak in 2026

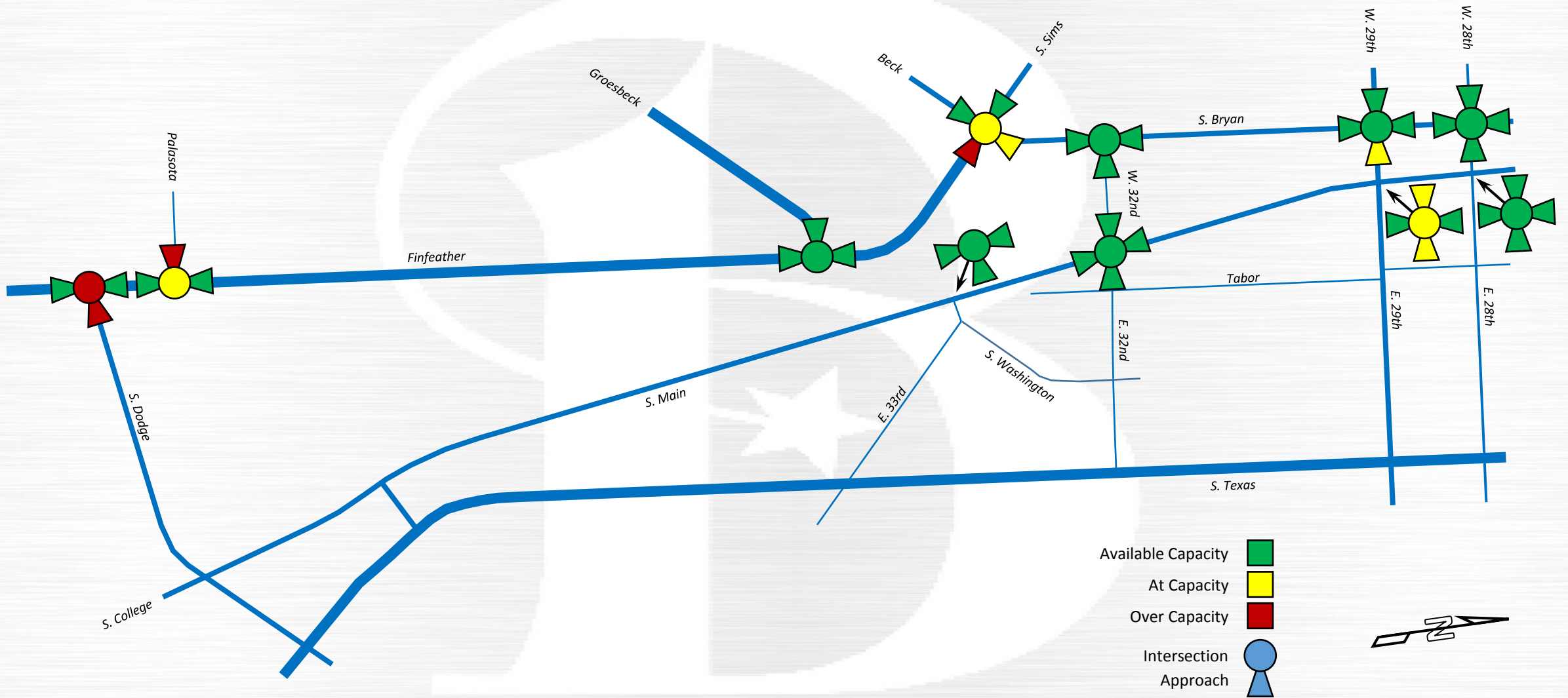


Groesbeck Closed – PM Peak

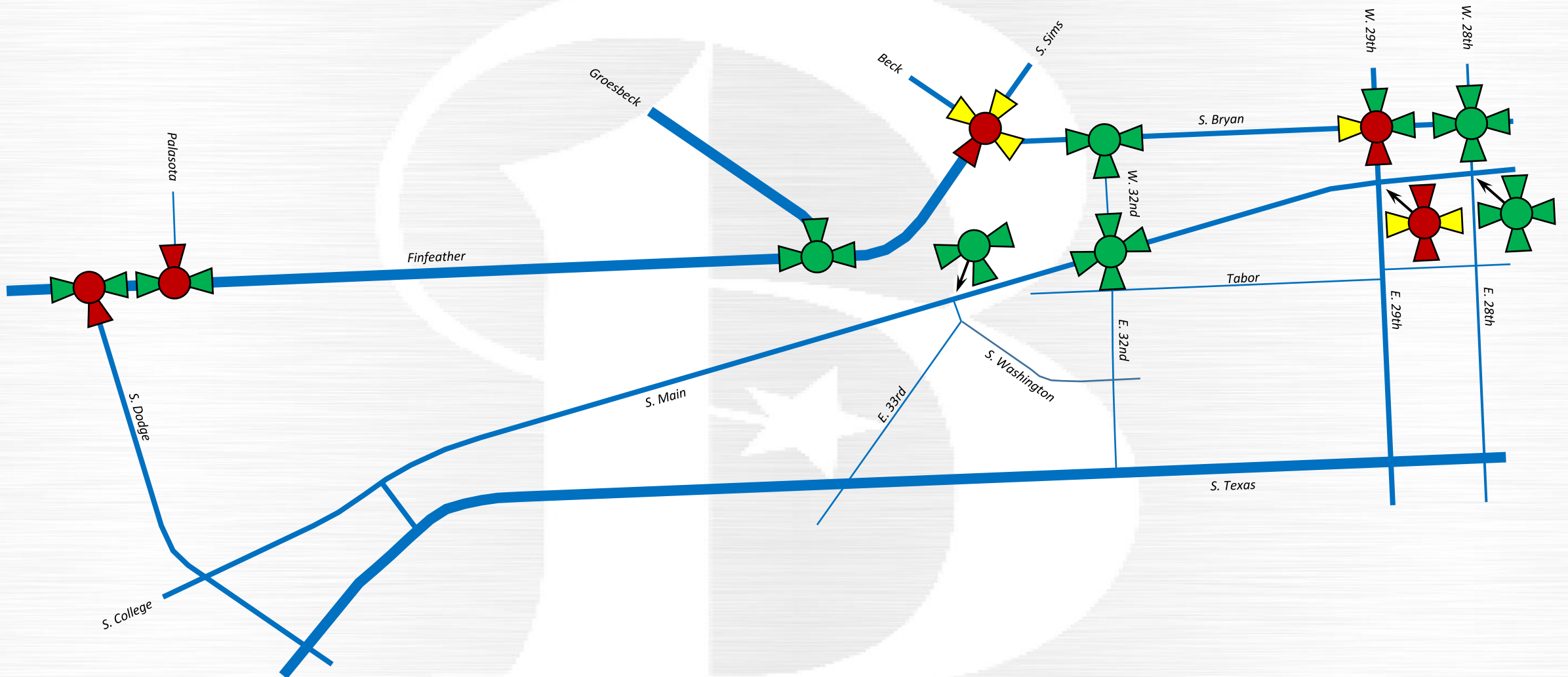
- Groesbeck closed
- Origin/destination data collected Fall 2016
- Traffic volume shifts to alternate travel routes determined
- No other improvements



Groesbeck Closed – PM Peak



Groesbeck Closed – PM Peak in 2026

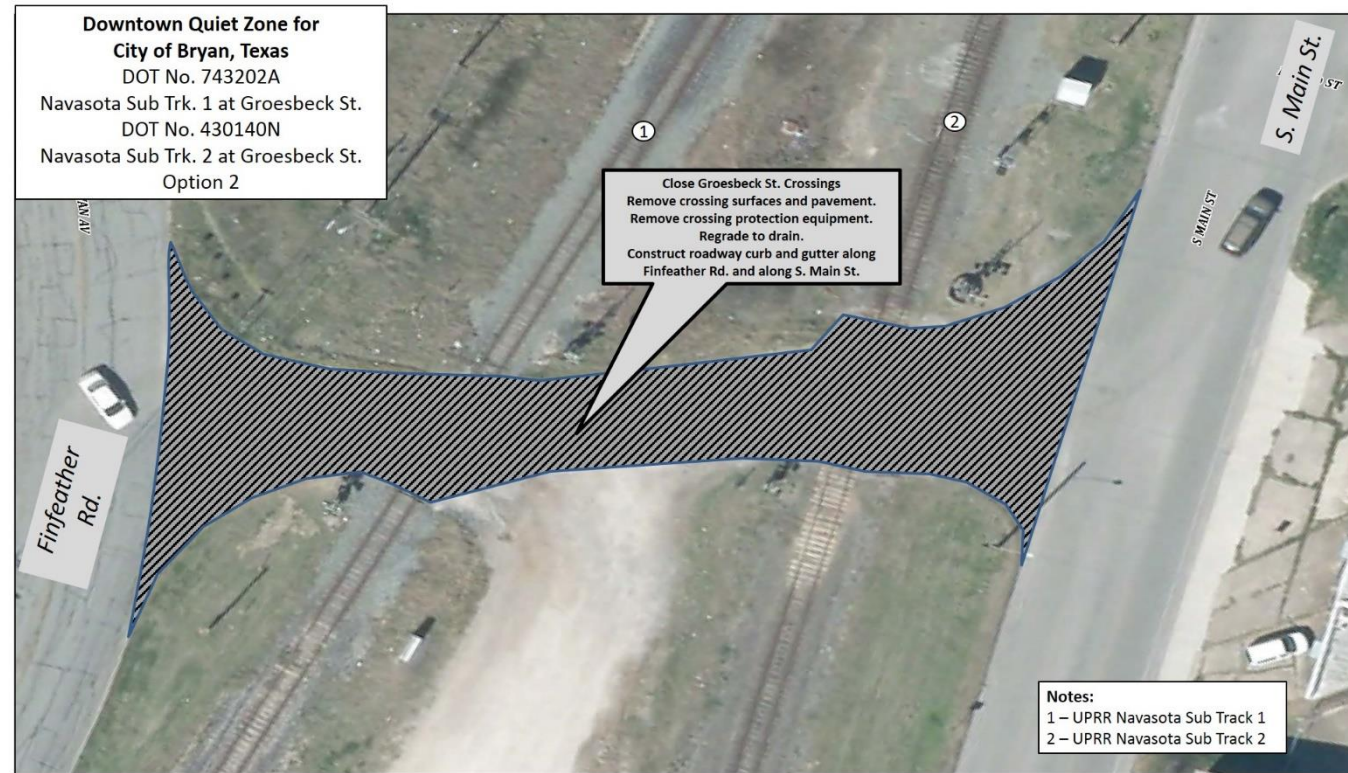


Groesbeck Closed + Mitigation – PM Peak

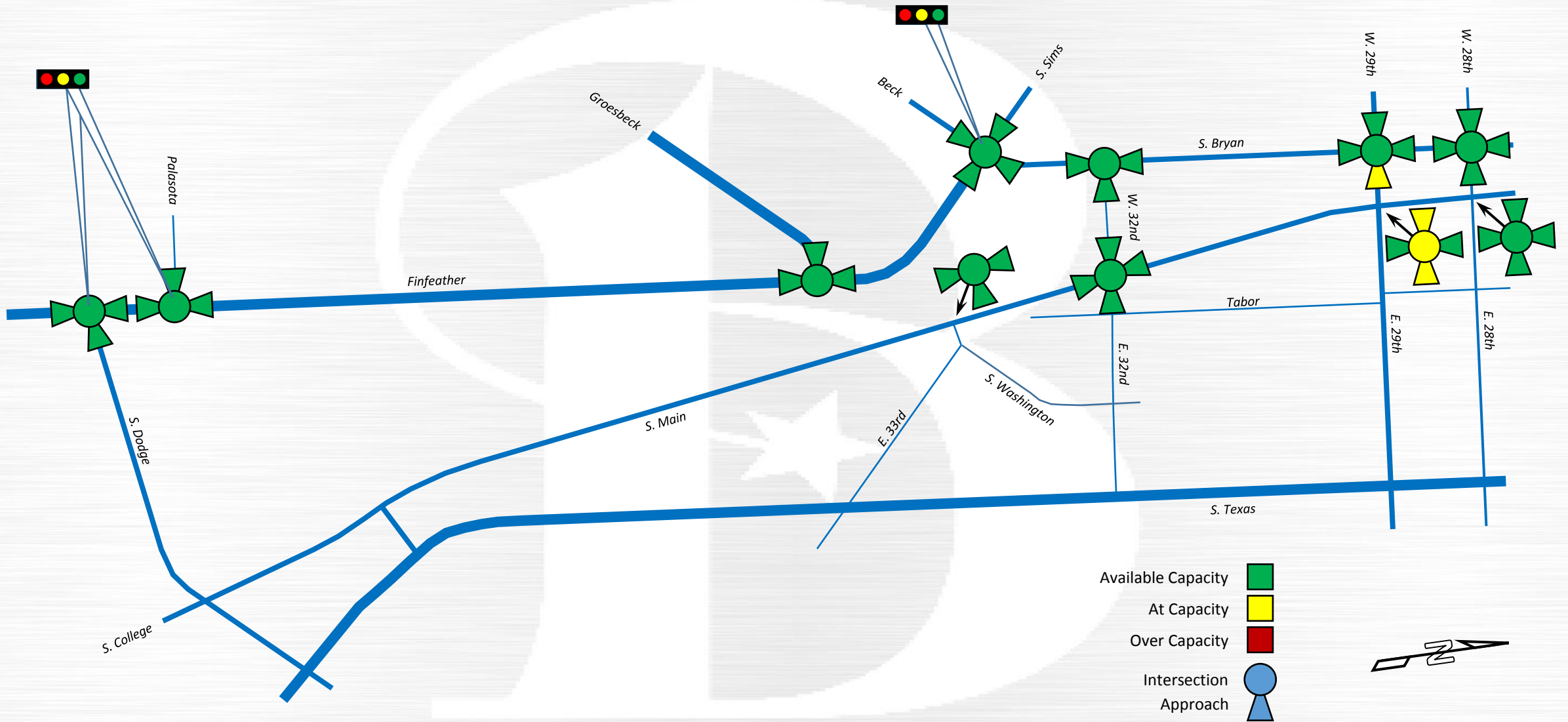
- Groesbeck closed
- New traffic signals¹
 - S. Bryan/S. Sims/Beck²
 - Finfeather & Palasota
 - Finfeather & S. Dodge
- Future improvements
 - New traffic signals
 - S. Bryan & W. 29th
 - S. Main & 29th

¹ Implement before closure

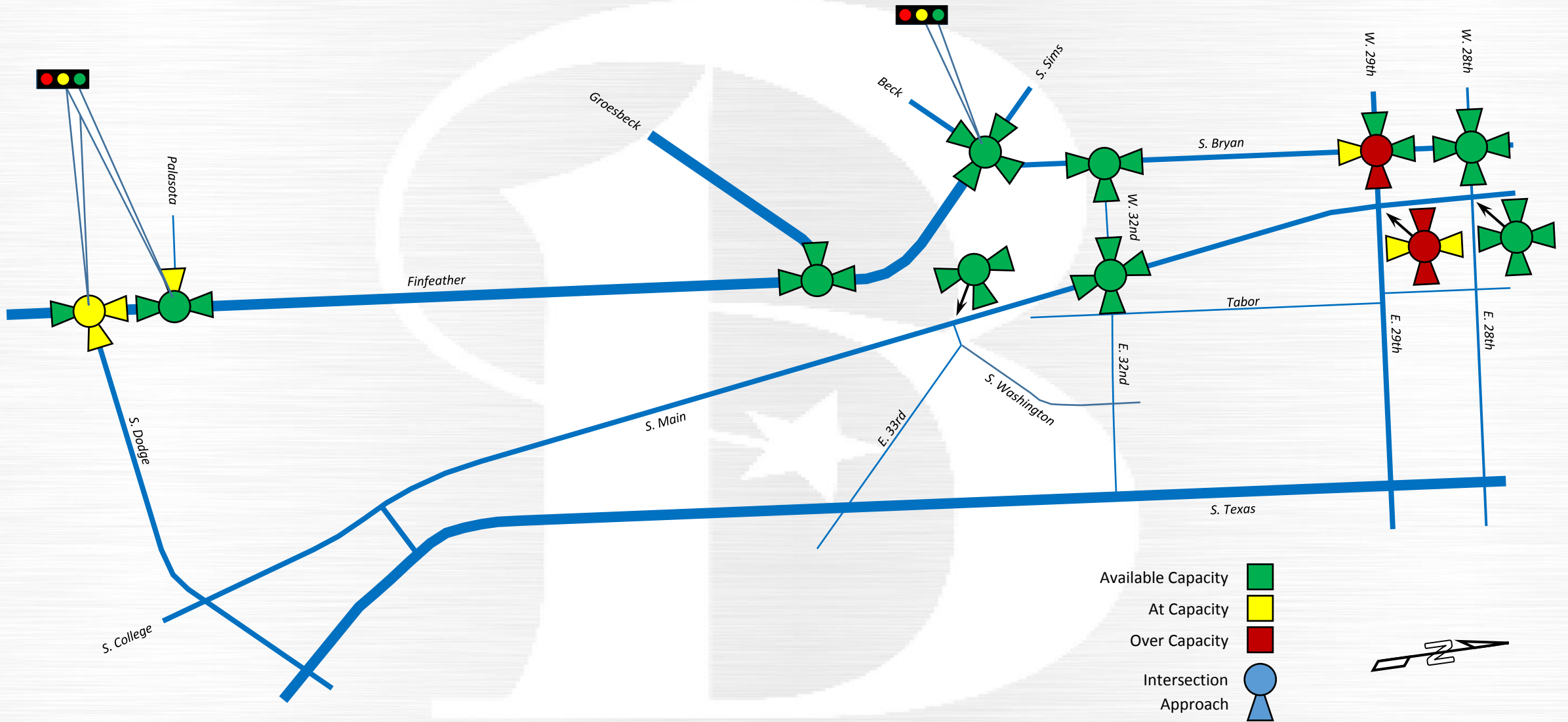
² Alternative intersection treatment – modern roundabout



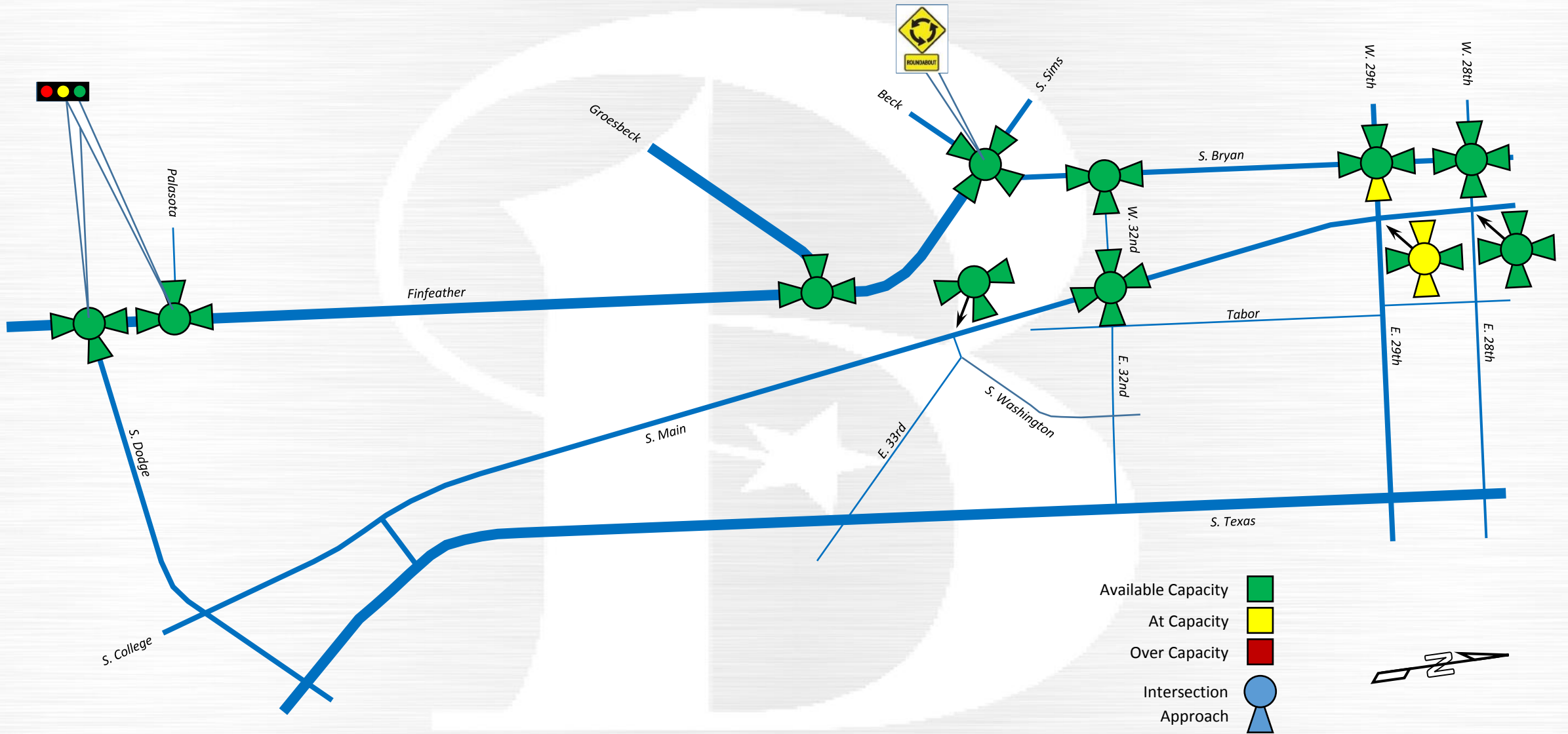
Groesbeck Closed + Mitigation – PM Peak



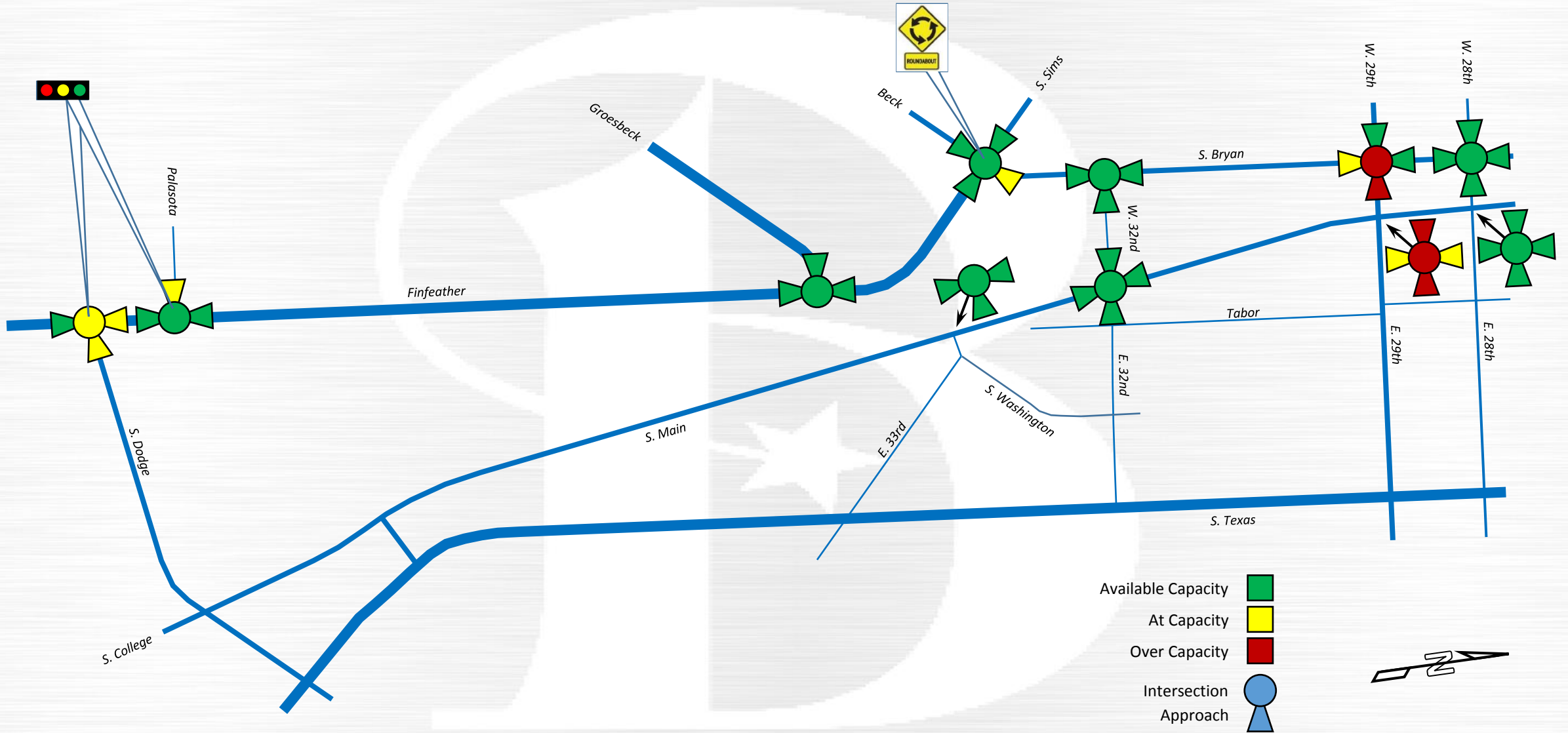
Groesbeck Closed + Mitigation – PM Peak in 2026



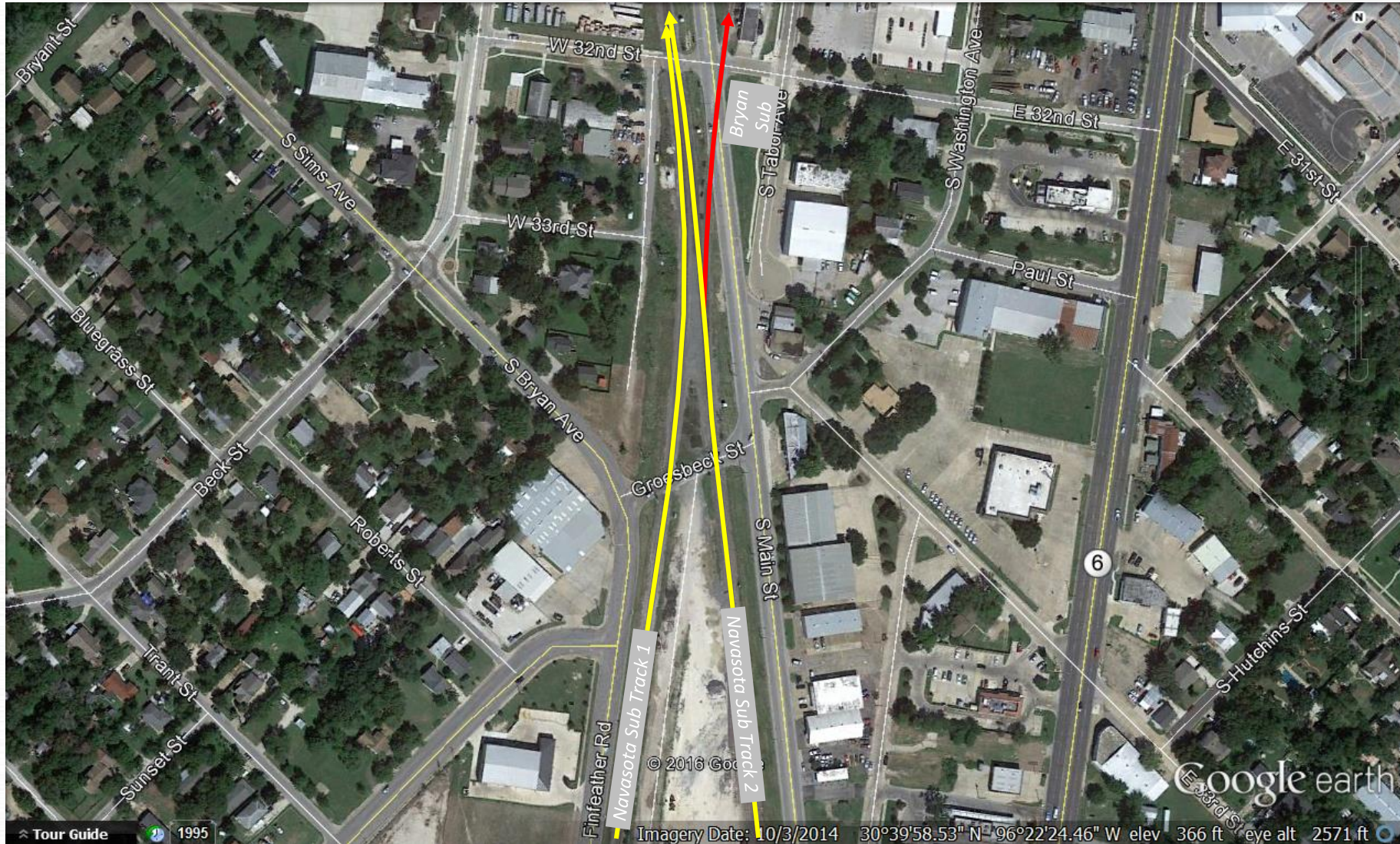
Groesbeck Closed + Mitigation – PM Peak



Groesbeck Closed + Mitigation – PM Peak in 2026



Groesbeck Street Railroad Crossings



Groesbeck Street Railroad Crossings – Statistics

- Navasota Sub Track 1 (western track) – DOT No. 743202A
 - Through trains per day – 12 (6 daytime, 6 nighttime)
 - Switching trains per day – 0
 - Timetable speed of through trains – 25
 - Vehicle crossings per day (a/o April 2016)
 - Total – 7,733
 - Trucks – 79
 - School buses – 1
 - Crash history
 - January 24, 2013, 9:05 AM – Vehicle stopped on crossing; one person in vehicle; one injury
 - April 5, 1989, 9:32 PM – Vehicle went around gate; two people in vehicle; one injury
 - March 6, 1976, 8:10 PM – Vehicle crossing tracks; one person in vehicle; no injuries
 - Risk Index without Horns = 62,170.15

Groesbeck Street Railroad Crossings – Statistics

- Navasota Sub Track 2 (eastern track) – DOT No. 430140N
 - Through trains per day – 12 (6 daytime, 6 nighttime)
 - Switching trains per day – 4
 - Timetable speed of through trains – 25
 - Vehicle crossings per day (a/o April 2016)
 - Total – 7,719
 - Trucks – 85
 - School buses – 1
 - Crash history
 - April 12, 1994, 12:55 PM – Vehicle stopped on crossing; one person in vehicle; one injury
 - September 6, 1993, 2:35 PM – Vehicle stopped on crossing; one person in vehicle; no injuries
 - November 28, 1982, 1:20 AM – Vehicle went around gate; no one in vehicle; no injuries
 - Risk Index without Horns = 22,127.26

Groesbeck Street Railroad Crossings – Issues

- Remain Open

- Four Quadrant Gates required for both crossings
- Traffic signals required to replace Stop signs
- Reconstruct roadway
- Traffic signal for Groesbeck & S. Main adversely impacts on-site parking for 801 S. Main; requires reconfiguration of on-site parking
- Consider closure of E. 33rd St. at S. Main St. due to turning conflicts
- Railroad signal equipment must be upgraded for 4,800 ft. in all directions from Groesbeck for enhanced detection of approaching trains

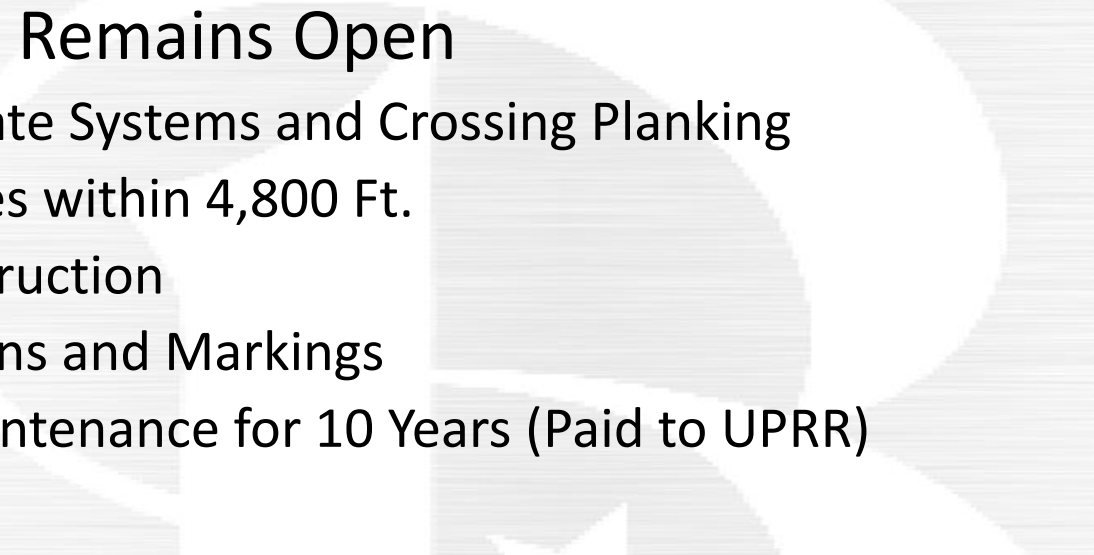
• Northward along Bryan Sub to Martin L. King Blvd.	Funded by TxDOT
• Westward along Navasota Sub past S. Sims St.	\$686,250
• Southward along Navasota Sub Track 1 and Track 2 past Dodge St.	<u>\$4,625</u>
• <i>Subtotal</i>	<i>\$690,875</i>

Groesbeck Street Railroad Crossings – Issues

- Close Crossing

- Three traffic signals (or two signals + roundabout) required for impact mitigation
- Financial incentive from UPRR
- Loss of delivery driveway from Groesbeck adversely impacts Woodson Lumber
- Further reduction of east-west connectivity for community
- Perceptions by individuals within the community and resultant feelings
- Nine crossings closed since 2000
 - Bryan Sub – 16th, 20th, 21st
 - Navasota Sub – Baylor, Congress, Randolph, Logan, Sterling, crossing between Sims and Parker

Groesbeck Street Railroad Crossings – Budgets



Groesbeck Street Railroad Crossings – Budgets

• Groesbeck Street Closed	
• Removal of roadway, railroad equipment and crossing planking	\$65,000
• Traffic Signals*, Signs and Markings (Three Locations)	<u>\$980,244</u>
• Project Total	\$1,045,244

* Roundabout in lieu of traffic signal at S. Bryan/S. Sims/Beck – \$150,000 additional budget anticipated

Downtown Quiet Zone Options

• Upper Limit Options	<u>\$5,690,652</u>
• 12 Crossings – Channelization Only + Ancillary Work	\$465,988
• 6 Crossings – Channelization + Ancillary Work + Railroad Equipment Upgrades	\$1,172,001
• E. 15 th Street – Full Closure	\$36,124
• S. Sims – Channelization + Ancillary Work + Auxiliary Gate + Railroad Equipment Upgrades	\$632,290
• S. Reed – Full Closure	\$40,900
• Library Walkway – Pedestrian Fencing System	\$314,120
• Pease – Wayside Horns + Railroad Equipment Upgrades	\$194,011
• Groesbeck – Quad Gates + Two Traffic Signals + Reconstruct Roadway + Railroad Equipment Upgrades	\$2,835,218

Downtown Quiet Zone Options

• Lower Limit Options	<u>\$3,945,543</u>
• 13 Crossings – Channelization Only + Ancillary Work	\$477,776
• 6 Crossings – Channelization + Ancillary Work + Railroad Equipment Upgrades	\$1,165,205
• S. Sims – Channelization + Auxiliary Gate + Railroad Equipment Upgrades	\$632,290
• S. Reed – Full Closure	\$40,900
• Library Walkway – Pedestrian Fencing System	\$314,120
• Pease – Wayside Horns + Railroad Equipment Upgrades	\$194,011
• Groesbeck – Full Closure + Traffic Impact Mitigation	\$1,121,242

Downtown Quiet Zone Risk Indices

<i>Cost Options</i>	Bryan Sub		Navasota Sub	
	<i>Lower Limit</i>	<i>Upper Limit</i>	<i>Lower Limit</i>	<i>Upper Limit</i>
<i>Risk Index with Horns</i>	11,095.06	11,095.06	14,428.24	14,428.24
<i>Risk Index without Horns</i>	18,042.10	18,042.10	30,956.05	30,956.05
<i>Risk Index without Horns + Mitigation</i>	7,691.69	7,402.48	4,614.19	6,733.05

Nationwide Significant Risk Threshold (as of 11/26/13) = 14,347.00

QZAC Recommendations

- Proceed with implementation of quiet zone (6 support, 0 not support)
- Include W. 28th St. crossing in the quiet zone (6 support, 0 not support)
 - Submit with PAA
 - Omit if the driveway modifications cannot be constructed
- Close Reed St. crossing (6 support, 0 not support)
- Permanently close E. 15th crossing (6 support, 0 not support)
- Close Groesbeck crossing (3 support, 3 not support)

Next Steps

- Continue development of information regarding Groesbeck
 - Consider closure of E. 33rd at S. Main should Groesbeck remain open
 - Continue to work with 801 S. Main to modify parking should Groesbeck remain open
- Guidance to staff for preparation of possible future council action regarding permanent closure of Groesbeck
- Formal council action regarding Groesbeck et al. (needed for PAA)

Next Steps

- Develop and Issue PAA – Fall 2017 (then wait for FRA approval)
- Estimated cost of quiet zone w/ Groesbeck open - \$5,690,652
- Estimated cost of quiet zone w/ Groesbeck closed - \$3,945,543
- Funding Option 1 – Quiet Zone established Fall 2022
 - CIP funding FY 2022 (\$5,517,000)
 - Construction begins Fall 2021
 - Develop and Issue NOE Fall 2022
- Funding Option 2 – Quiet Zone established Spring 2020
 - Reimbursement resolution advances CIP funding to FY 2019 (\$5,517,000)
 - Construction begins Spring 2019
 - Allows for NOE to be issued Spring 2020

Questions?





CITY OF BRYAN
The Good Life, Texas Style.™



Downtown Quiet Zone for City of Bryan