



I-29 / 85th Street New Interchange Noise Barrier Analysis



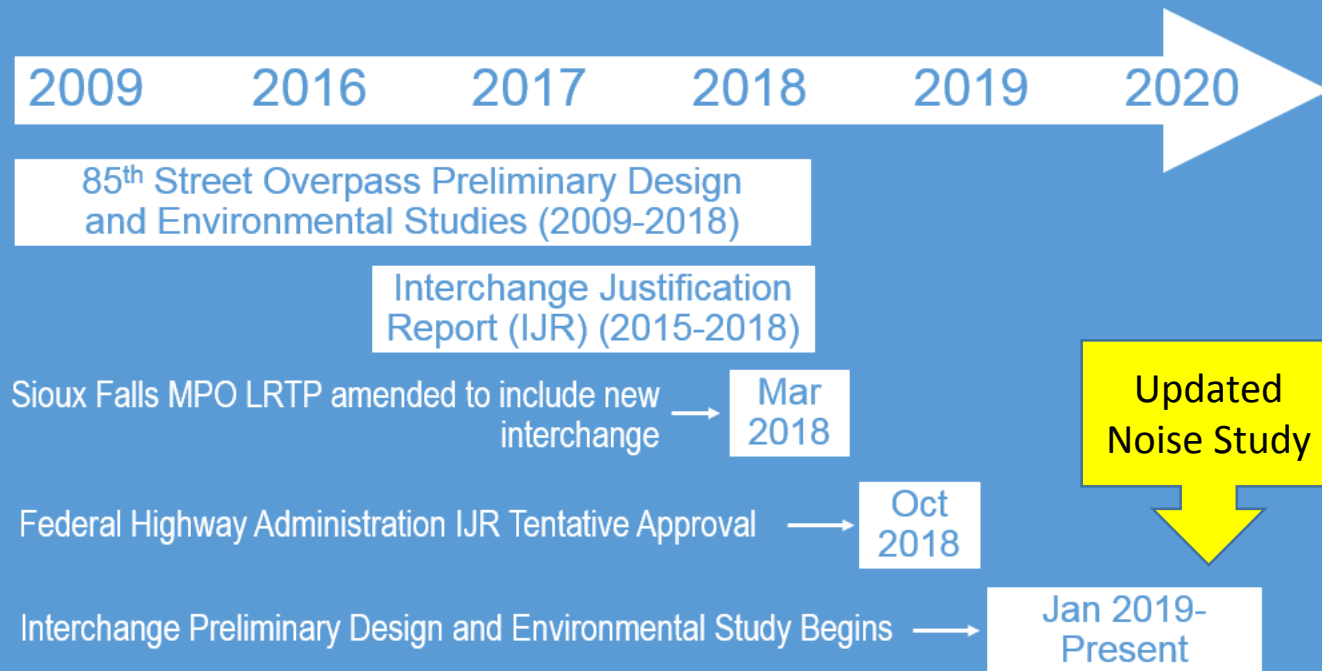
August 7, 2020

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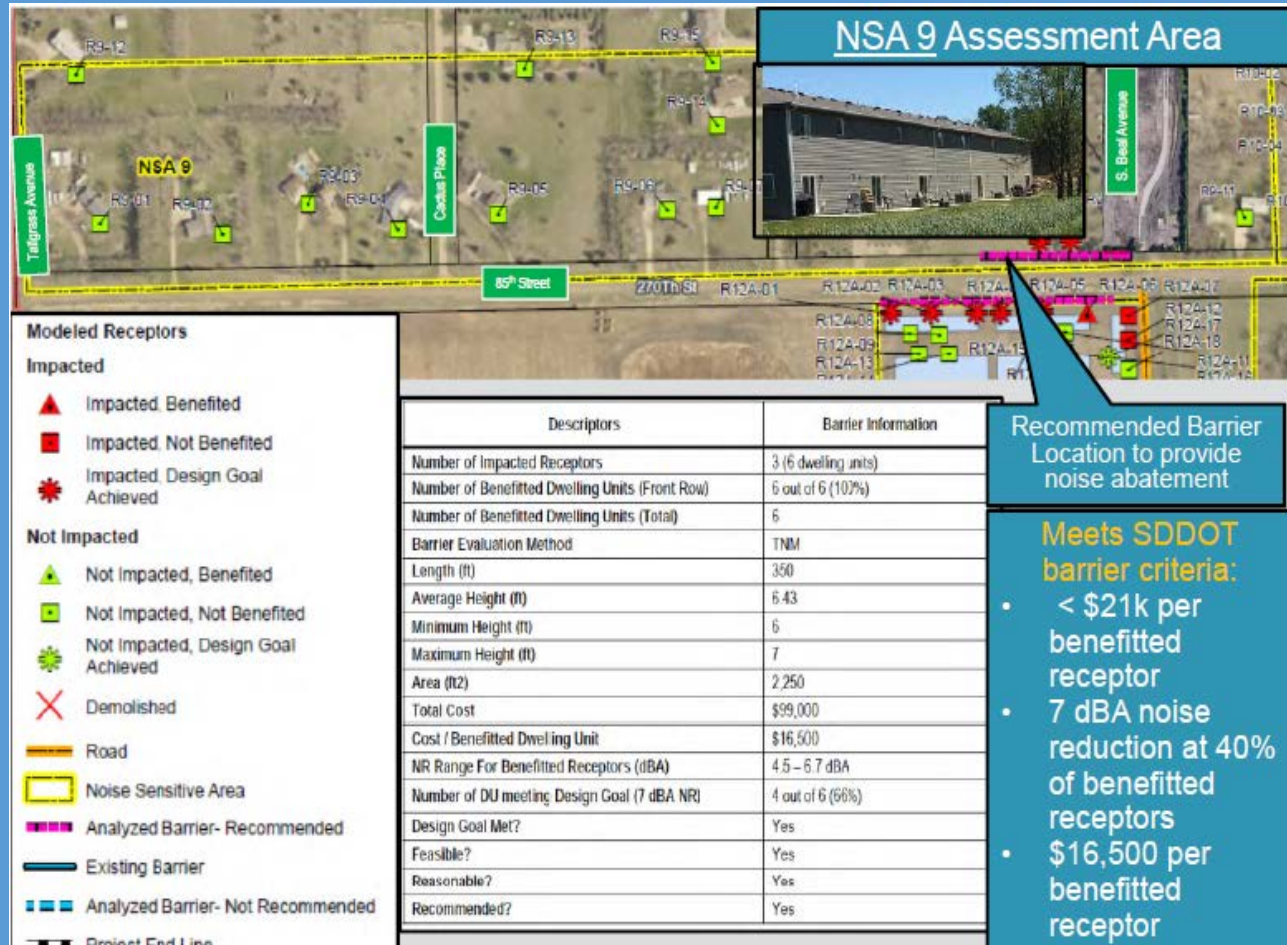
Purpose of This Presentation



Noise Study Discussion History



Prior Noise Study Mitigation Site – Barrier #9



So what's new and why is this being done again?



Noise Abatement Thresholds (SDDOT Policy) For A Barrier

- **Reasonableness** = Cost per Benefitted Receptor is \$21K or less
- **Acoustic Feasibility** = 5 dBA reduction for 60% of receptors directly behind the barrier and 7dBA reduction for 40% of all benefitted receptors
- **General Feasibility** = safety, access requirements for drainage, utilities, and constructability AND accepted by majority vote of residents / owners

New Noise Model Results for Barrier # 9:

- Still Reasonable and Feasible, pending public meeting vote
- Wall height – consistent 6 ft - 7 ft. which provides noise reduction benefit to receptors 5 ft. above the grade (average ear height) facing the street
- Wall length – 235 ft. (includes one parcel and sightline reduction)

**Table B1
Build Noise Barrier Cost Effectiveness (Noise Area 9)
Noise Barrier**

Noise Barrier	Receiver	Land Use	FHWA Noise Standard (Leq dBA)	Future Noise Levels		Acoustic Effectiveness					Cost Effectiveness (\$44/SF)				NOISE WALL RESULTS		
				Build (Leq dBA)	Build with Barriers (Leq dBA)	dBA Reduction	Number of Receptors	Benefitted Receptors (-5 dBA)	Total Benefitted Receptors	Acoustically Effective	Design Goal (-7dBA)	Barrier Length (ft)	Barrier Height (ft)	Area of Barrier (SF) ⁽¹⁾		Total Cost ⁽²⁾	Cost per Benefitted Receptor
B1	9-9A	Residential	67	70.4	66.3	-4.1	1	0	5	YES	YES	235	6	1410	\$62,040	\$12,408	YES
	9-9B	Residential	67	70.6	62.9	-7.7	1	1									
	9-10	Residential	67	70.6	61	-9.6	2	2									
	9-11	Residential	67	70.4	62	-8.4	2	2									

Approx RW needed = 1500 SF
 Estimated Cost/SF = \$25
 Cost / Benefitted Receptor = \$7,500
TOTAL Cost / Benefitted Receptor = \$19,908
 (Includes Wall + RW)

- Wall layout extends to only one parcel where the townhomes are located - the previous layout extended further to two parcels and provided more noise reduction for the outer receptor.
- Don't need to meet the noise reduction goal on the outer parcel according to SDDOT's noise guidance, so reducing it should help with real estate acquisition negotiations (one vs. two parcels).
- Wall access for maintenance right-of-way (permanent easement) will need to be purchased – cost estimate includes 10 ft. of right-of-way.



Overview Map

Map Extent

Legend

- Parcel Boundaries
- Modeled Barrier (SEH)
- Noise Receptor (Benefited)
- Noise Receptor (Not Benefited)

Rec. 9-9A (-4) dB reduction
Rec. 9-9B (-7) dB reduction
Rec. 9-10 (-9) dB reduction
Rec. 9-11 (-8) dB reduction

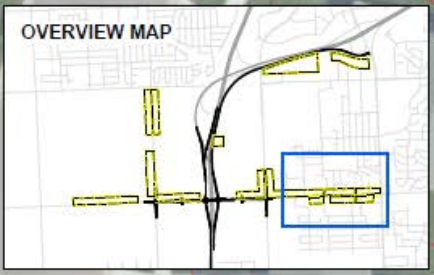
W 85th St W 85th St W 85th St W 85th St



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Legend

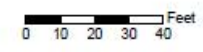
- Proposed RW/Easement
- Cad Renderer**
- Noise Barrier (Proposed)
- Noise Barrier (Not Proposed)



SEH
401 East 8th Street
Suite 309
Sioux Falls, SD 57103
(605) 330-7000

Print Date: 4/20/2020
Source: Bing Maps,
Lincoln County
Map by: mfk
Projection: State Plane
South Dakota 5

Noise Analysis Future Build Results and Barrier Locations: Barrier Analysis Results - NSA's 9-14
I-29 and 85th Street Interchange
Lincoln County, SD



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Why is the wall bent inward toward the residential units?



What is meant by “Easements”?



Is this the only place along 85th Street that
a noise barrier will be considered?



We need your vote on a noise barrier wall!
You can vote with a paper ballot delivered
to your address





I-29/85th Street New Interchange Project - Noise Wall Opinion Ballot

We would like your opinion regarding the current Noise Study for 85th Street from Louise Avenue to Sundowner Avenue in Sioux Falls and Tea, South Dakota. This survey will close on September 7, 2020. Please indicate your choices in the boxes below and return in the enclosed postage paid envelope.

1. Do you support or oppose the construction of a 6-7 ft. high concrete noise wall along 85th Street, east of the Beal Avenue Intersection and in front of the Southwoods Townhome Building?

I support the construction of a noise wall at this location.

I oppose the construction of a noise wall at this location.

2. Do you rent or own your property?

I am a lease holder / renter

I am a property owner

3. Please share any comments:

4. Please provide your contact information (name, address, phone, and email):

Thank you for completing and returning this official ballot.



September 7, 2020

Votes need to be returned for tabulation
and certification



What happens after the vote?



For More Information

<http://siouxfalls.org/85thStreet>

ADA accommodation is needed to view the presentation in pdf format, please contact the Human Relations Office at (605) 367-8745 (voice), (605) 367-7039 (TTY), or humanrelations@siouxfalls.org

Questions or Comments:

Shannon Ausen, City of Sioux Falls, (605) 367- 8607 Email: sausen@siouxfalls.org

Kyle Heimerl, South Dakota Department of Transportation, (605) 773-3436

Email: Kyle.Heimerl@state.sd.us

