

North Hanley Road Study
Road Safety Audit and Alternatives Analysis
MoDOT Project: J6S3271

Presenters: Teresa Krenning (TREKK)
 Tyler Lehde (MoDOT)

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Executive Overview

Scope
 Road safety audit and alternatives analysis

Corridor
 North Hanley Road from Evans Avenue to University Place Drive

Project Goal
 Identify safety, operational and engineering improvements, including multimodal and vulnerable users

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Contextual Importance

- Proximity to North Hanley MetroLink Station (major regional hub)
- Corridor classification: Principal/minor arterial
- Future development impacts (Clayco, University Commons, Triton Pointe)
- Corridor value to St. Louis County and Lambert Airport access



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Corridor Overview

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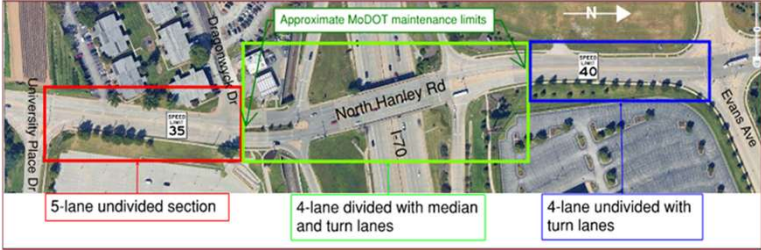

Key Project Drivers

- Pedestrian safety concerns
- High-speed differentials and crash frequency
- ADA compliance deficiencies
- Stakeholder pressure for corridor and community revitalization
- Multi-jurisdictional ownership (MoDOT + St. Louis County)

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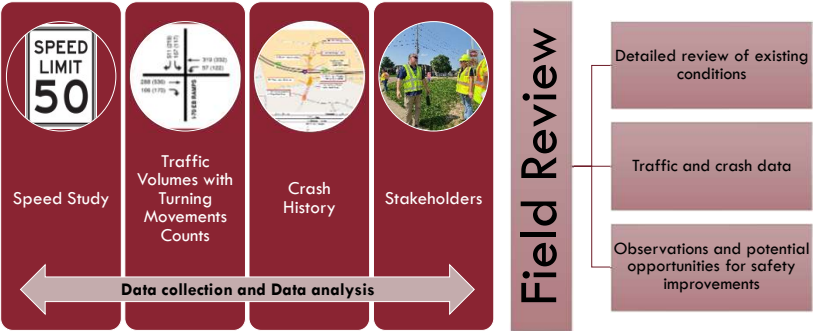

Corridor Conditions: Existing Challenges

- Inconsistent lane configurations
- High midblock pedestrian activity with no crosswalks
- Aging infrastructure
- Driver noncompliance at ramp signals
- Missing or noncompliant pedestrian facilities
- Sight distance issues and worn traffic control devices

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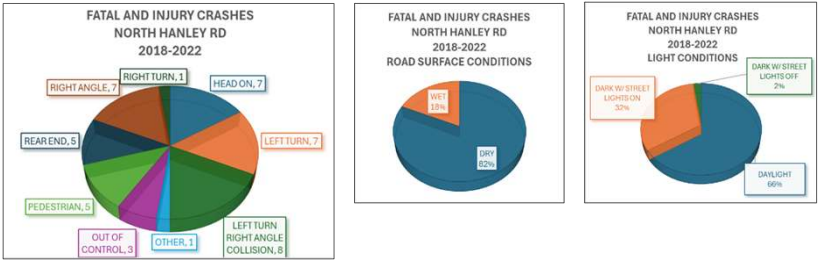

Study Methodology

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Crash Data

2018-2022 Fatal and Injury Crashes

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Key Existing Conditions to Note

Crash Totals		Personal Injury Totals	
Fatal Crashes	0	Fatalities	0
Serious Injury Crashes	1	Serious Injuries	1
Minor Injury Crashes	4	Minor Injuries	4
PDO Crashes	0		
Total Crashes	5		

High Number of Pedestrian Crossings

- Approximately 1,000 pedestrian crossings each day
- Peak 5-minute period had 31 pedestrian crossings

Travel Speeds

- 85% speeds range from 33 MPH to 42 MPH
- Average speeds range from 27 MPH to 35 MPH

Crash History (2018-2022)

- 154 crashes total
- 44 crashes occurred on North Hanley Road, resulting in an injury or loss of life
- 5 crashes involving pedestrians resulting in an injury

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RSA Summary

- Multi-disciplinary review team performed field audit and observations
- Observations/comments/notes of existing conditions on the corridor categorized:

- ADA Compliance
- Pavement Markings for Pedestrian Crossing
- Lighting
- Roadside/Sidewalk
- Signing
- Obstructions within the Right of Way
- Roadway

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Identified Concerns

- Sight distance/obstructions
- ADA non-compliance feature *(addressed by MoDOT ADA project)*
- Insufficient pedestrian crossing pavement markings *(addressed by MoDOT ADA project)*
- Pedestrian signals
- Roadway/pavement conditions
- Lighting
- Signing
- Roadside/sidewalk hazards
- Pedestrian behavior
- Driver behavior

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RSA Summary (continued)

Opportunities for Improvement Shared by RSA Participants

- Midblock pedestrian crossing with high-visibility treatments
- Metro connection alignment with a midblock pedestrian crossing
- Relocate existing fencing to the Metro side of the sidewalk
- Address obstructions
- ADA and sidewalk improvements

MoDOT Improvements Post RSA


- Median and vegetation mitigation
- Sign replacements planned
- ADA project
- Minor pavement improvements


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Stakeholder and Public Engagement Process




- 11 **one-on-one** stakeholder interviews
- 15 stakeholders **emailed** questions
- Community **survey** (161 surveys collected)
- Online **interactive video survey** (17 surveys completed)





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Community & Stakeholder Feedback



Consistent corridor perceptions and responses:

- Uninviting
- Doesn't feel safe
- Overgrowth in median
- Gas station unappealing
- Does not reflect welcoming image expected with college entry point
- Support for corridor improvements


Top Concerns:

- Poor pedestrian experience
- Safety at I-70 ramps
- Uninviting visual and physical environment

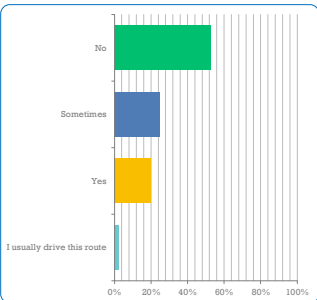
Stakeholder consensus:
Need bold and visible improvements

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Key Outreach Highlights



53% of pedestrians feel unsafe near I-70 EB ramps



Public outreach surveys on perceived issues and behaviors near the crosswalk

What issues do you personally encounter at this crosswalk?


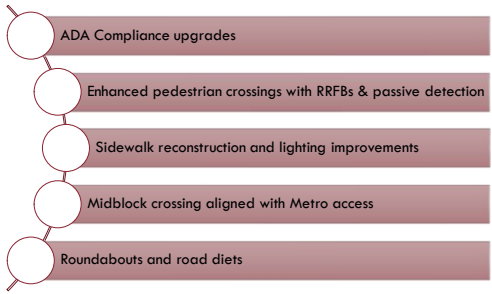
- Driver behavior (speeding, sharp turns, etc.) - 47%
- Too long of a wait for crossing signals - 37%
- Crosswalk is not conveniently located - 33%

What behaviors have you observed near this crosswalk?

- Drivers speeding through the intersection - 60%
- Drivers using cellphones - 57%
- Pedestrians using cellphones - 56%

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Conceptual Design Strategies


- ADA Compliance upgrades
- Enhanced pedestrian crossings with RRFs & passive detection
- Sidewalk reconstruction and lighting improvements
- Midblock crossing aligned with Metro access
- Roundabouts and road diets

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Alternatives Overview




Alternative 1: Lane reconfigure + midblock crossing



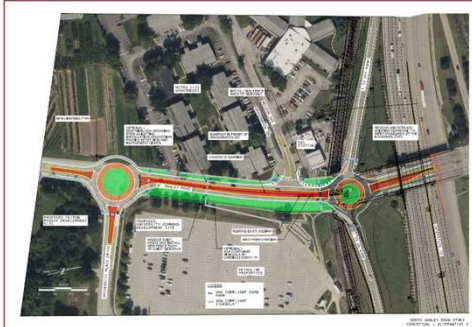
- Remove the northbound right turn lane from University Place Drive
- Remove the splitter island at the I-70 eastbound
- Install a midblock pedestrian crossing
- Relocate the pedestrian crossing at the I-70 eastbound
- Install an interactive blank out sign on the I-70

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Alternatives Overview




Alternative 2: Road diet + two roundabouts + midblock pedestrian crossing



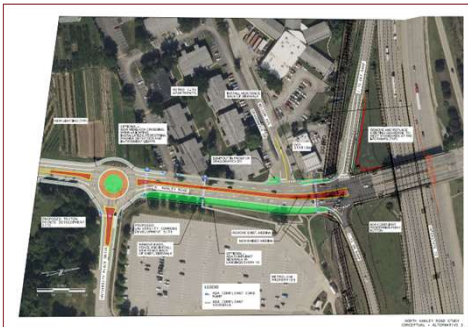
- Construct a roundabout at University Place Drive and the I-70 East ramps
- Construct a new median on North Hanley Road between University Place Drive and the I-70 eastbound ramps
- Reduce the number of through lanes
- Construct curb bump out and remove the southbound right turn lane
- Install midblock pedestrian crossing

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Alternatives Overview




Alternative 3: One roundabout + midblock pedestrian crossing




- Construct a roundabout at University Place Drive
- New alignment for the I-70 eastbound off ramp
- Remove the northbound right turn lane between University Place Drive and the I-70 eastbound on ramp
- Construct midblock pedestrian crossing

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Alternatives Overview




Alternative 1A: MoDOT-only improvements (within ROW)



- Reduce the northbound right turn lane from Dragonwyck Drive to the I-70 eastbound ramp
- Remove the splitter island and relocate the ped crossing at the I-70 eastbound on ramp along with ped crossing signal button replacement
- Install an interactive blank out sign on the I-70 eastbound off ramp for the pedestrian signal crossing phase at the signalized intersection
- Construct curb bump out and remove the southbound right turn lane to Dragonwyck Drive
- Install new pedestrian crossing signals at the I-70 westbound on ramp

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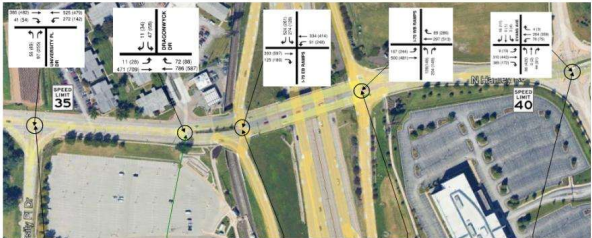
Traffic and Safety Analysis



- LOS modeling using Synchro (2024 & 2044 projections)
- Safety gains projected using Crash Modification Factor comparisons
- Midblock crossing with refuge island and RRFB improves visibility, compliance, and shorter crossing distances
- Roundabouts improve traffic calming and pedestrian yield behavior

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Alternative 1 – Traffic Analysis (2024)


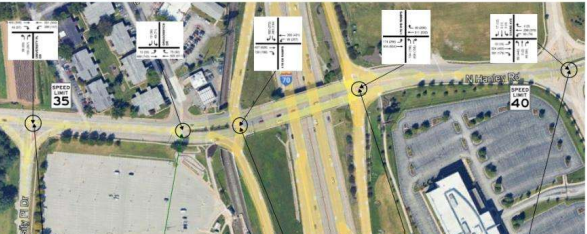
Level of Service (Delay) AM Peak - A (5.5) PM Peak - A (6.9)	Level of Service (Delay) AM Peak - D (29.7) PM Peak - D (30.7)	Level of Service (Delay) AM Peak - B (15.0)* PM Peak - B (12.8)*	Level of Service (Delay) AM Peak - B (16.1) PM Peak - B (14.3)	Level of Service (Delay) AM Peak - A (6.8) PM Peak - C (26.4)
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VOLUME - AM PEAK HOUR (PM PEAK HOUR)
* HCM 6TH EDITION METHODOLOGY DOES NOT SUPPORT EXCLUSIVE PED OR HOLD PHASES. LOS AND DELAY REPORTED WITH SYNCHRO METHODOLOGY.

Note: Dragonwyck Dr - Level of Service levels for unsignalized intersections

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Alternative 1 – Traffic Analysis (2044)

Level of Service (Delay) AM Peak - A (5.5) PM Peak - A (7.0)	Level of Service (Delay) AM Peak - D (33.1) PM Peak - E (35.4)	Level of Service (Delay) AM Peak - B (15.8)* PM Peak - B (13.4)*	Level of Service (Delay) AM Peak - B (16.1) PM Peak - B (14.5)	Level of Service (Delay) AM Peak - A (6.8) PM Peak - C (28.1)
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VOLUME - AM PEAK HOUR (PM PEAK HOUR)
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Note: Dragonwyck Dr - Level of Service levels for unsignalized intersections

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Traffic and Safety Analysis


Safety Gains using CMF



Alternative 1	Alternative 2	Alternative 3	CMF Comparisons		
<ul style="list-style-type: none"> ✓ Pedestrian crossing with refuge median island ✓ Bump-outs at crosswalks ✓ Minimal right of way and utility impacts 	<ul style="list-style-type: none"> ✓ Pedestrian crossing with refuge median island ✓ Reduced conflict points with Roundabouts ✓ Shorter pedestrian crossings with lane reduction 	<ul style="list-style-type: none"> ✓ Pedestrian crossing with refuge median island ✓ Bump-outs at crosswalks ✓ Reduced conflict points with Roundabout ✓ Shorter pedestrian crossings with lane reduction 			
			Total CMF*		
	Alternative 1	Alternative 2	Alternative 3		
	0.6	0.6	0.6		
	0.6	0.6	0.6		
	0.6	0.64	0.64		
	0.6	0.64	0.64		

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Cost Estimates (Conceptual)



Estimated Cost Range


\$1.2M – \$4.1M


Conceptual Improvements


Pedestrian infrastructure, lighting, signals, pavement, median, intersection design and ADA compliance updates


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Lessons Learned



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Strong public input enhances solution credibility
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Multimodal corridor needs cannot be retrofitted cheaply
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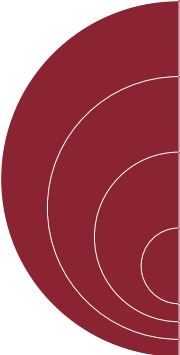
Minor geometric changes (curb bump-outs or midblock crossings) can yield major safety gains
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Partnering with developers helps anticipate and plan for future demands

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Next Steps




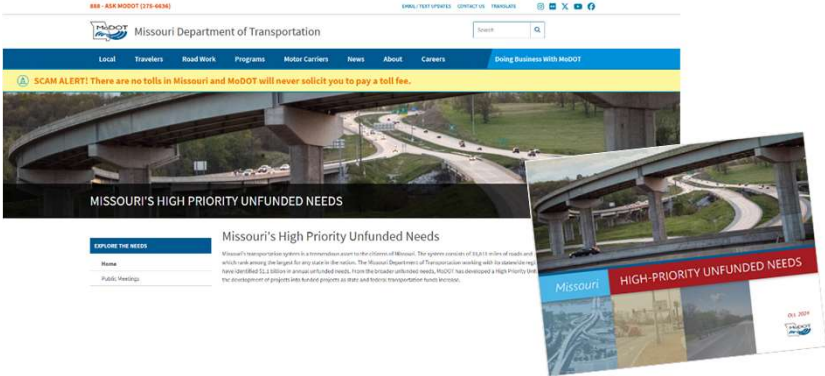


Secure funding for preferred alternative
Advance to preliminary design (NEPA & design documentation)
Continue coordination with St. Louis County & Metro Transit
Leverage EWG's "Gateway to Safer Roadways" support for regional alignment

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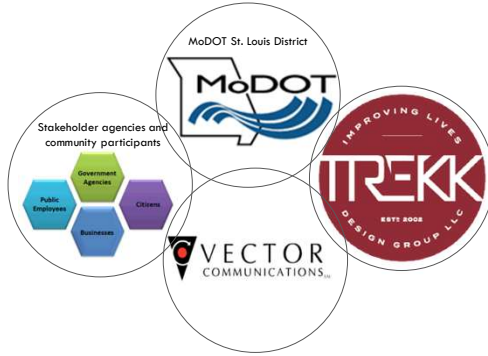
Unfunded Needs List





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Acknowledgments & Contacts



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Questions



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