



Burnham Avenue Railroad Crossing Study

Community Advisory Group Meeting #2



Agenda

Project Team and Community Advisory Group Introductions

Purpose and Need

Alternatives Analysis Process

Recommended Alternatives to be Carried Forward

Draft Level 4 Screening (Socioeconomic)

Question & Answer

Next Steps

Project Team and Community Advisory Group Introductions

Project Team

Village of Burnham	Mott MacDonald
Robert Polk, Mayor Brenda Greer, Trustee Carmella Richardson, Trustee Travis Claybrooks, Trustee	Kundayi Mugabe, Project Manager Morgan Morefield, Project Engineer
Cook County Department of Transportation and Highways	Morreale Communications
Katie Bell, Project Studies Manager Jennifer Palma Skrebo, Project Studies Division Head	Michael Schuch, Senior Communications Director Chloe Meek, Senior Communications Manager Asabea Kirkland, Communications Coordinator

Community Advisory Group (CAG)

CAG consists of:



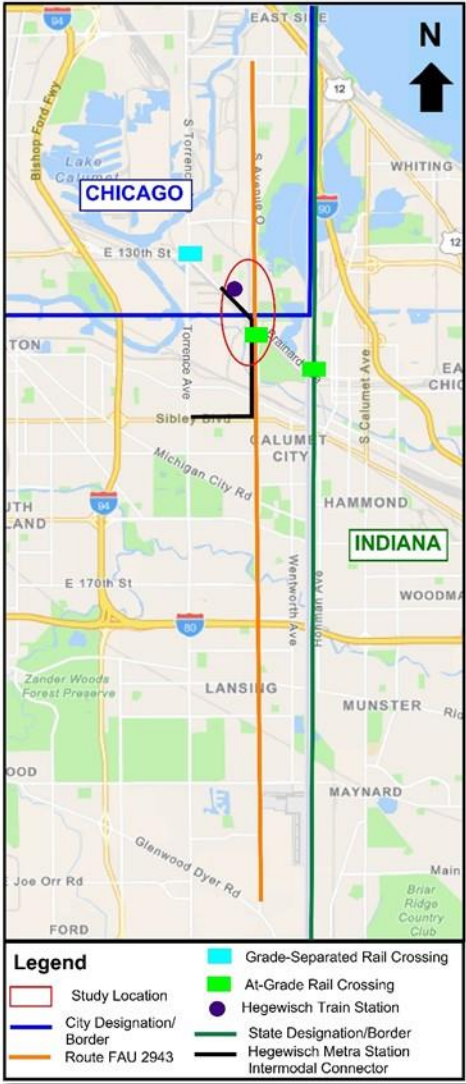
Expectations

- Represent community and facilitate discussion of issues and opportunities on behalf of constituents
- Input from all participants in the process is valued and considered
- Keep open mind and participate openly, honestly, and respectfully
- Treat others with respect and dignity
- Project must progress at reasonable pace, based on project schedule

Purpose and Need

Received concurrence from resource agencies on
February 22, 2024

Project Location and Existing Environmental Resources



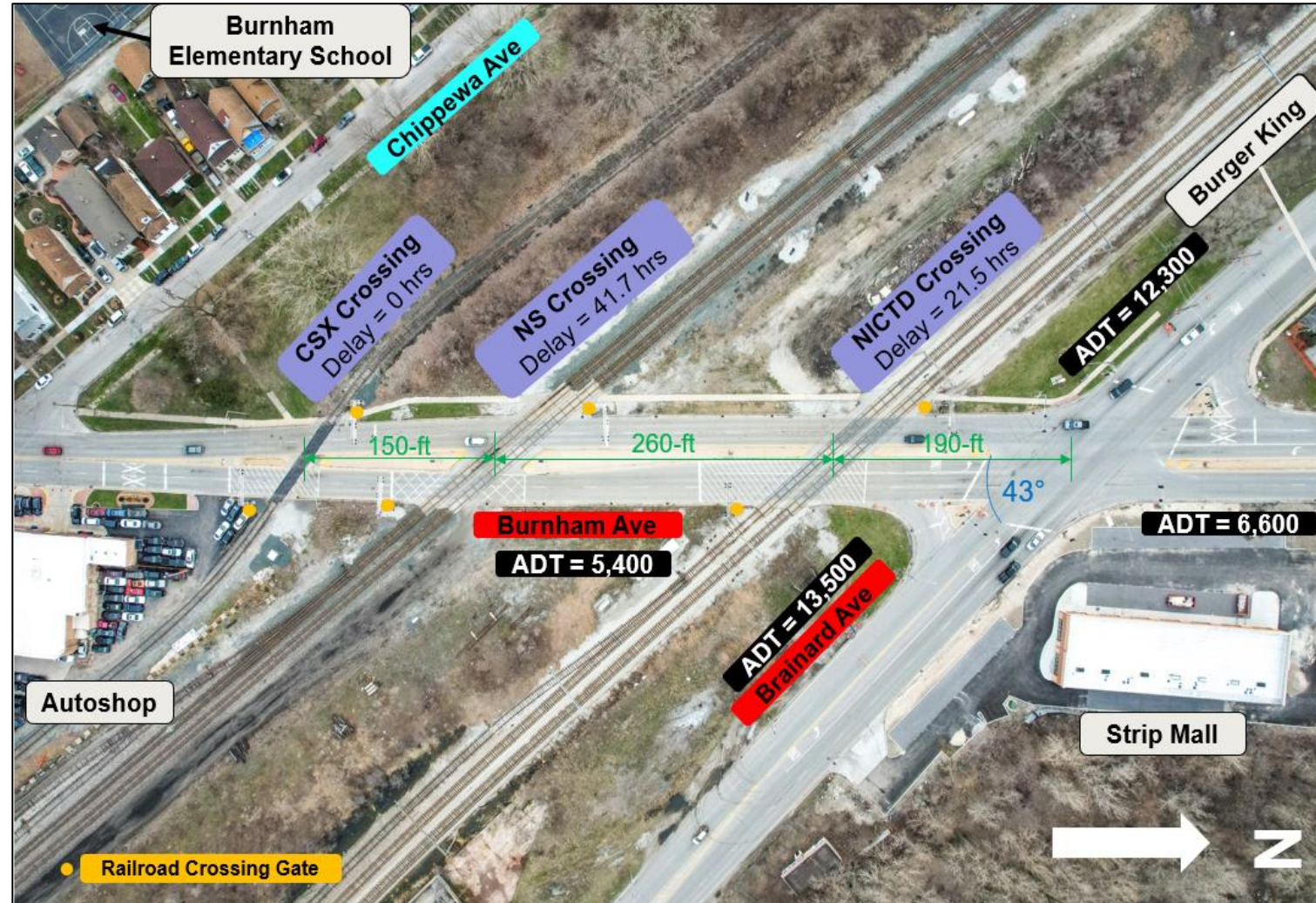
Existing Conditions and Adjacent Properties

- 10-to-11-foot-wide travel lanes
- 4-to-6-foot-wide sidewalks
- No bicycle facilities on Burnham Avenue
- 3 crossings (5 tracks total)
- 70 trains/day¹
- > 4 hours of downed gate time/day²
- > 63 hours of vehicle delay/day³

¹ FRA Crossing Inventory Reports ([link](#))

² CMAP Data Hub: Railroad Crossing Delay ([link](#))

³ CMAP Motorist Delay at Chicago Region Railroad Grade Crossings ([link](#))



Project Need: Weaving Around Downed Gates



Project Need: Unsafe Turns



Purpose and Need (Feb 2024 NEPA-404 Concurrence)

Purpose

Reduce delays and improve mobility, safety, and operations for all roadway users in the project study area – specifically proximate residents of the City of Chicago and Village of Burnham – at the existing at-grade railroad crossings where Burnham Avenue intersects with five railroad tracks (involving three controlled crossings) located just south of Brainard Avenue

Need (Summary)

Improve transportation and multimodal demands (i.e., mobility and congestion) and safety

Railroad-induced congestion negatively affects:



Emergency service providers



Vehicles and adjacent properties



Mass transit providers (i.e., Pace and CTA)



Bicyclists and Pedestrians

Comments/Questions?

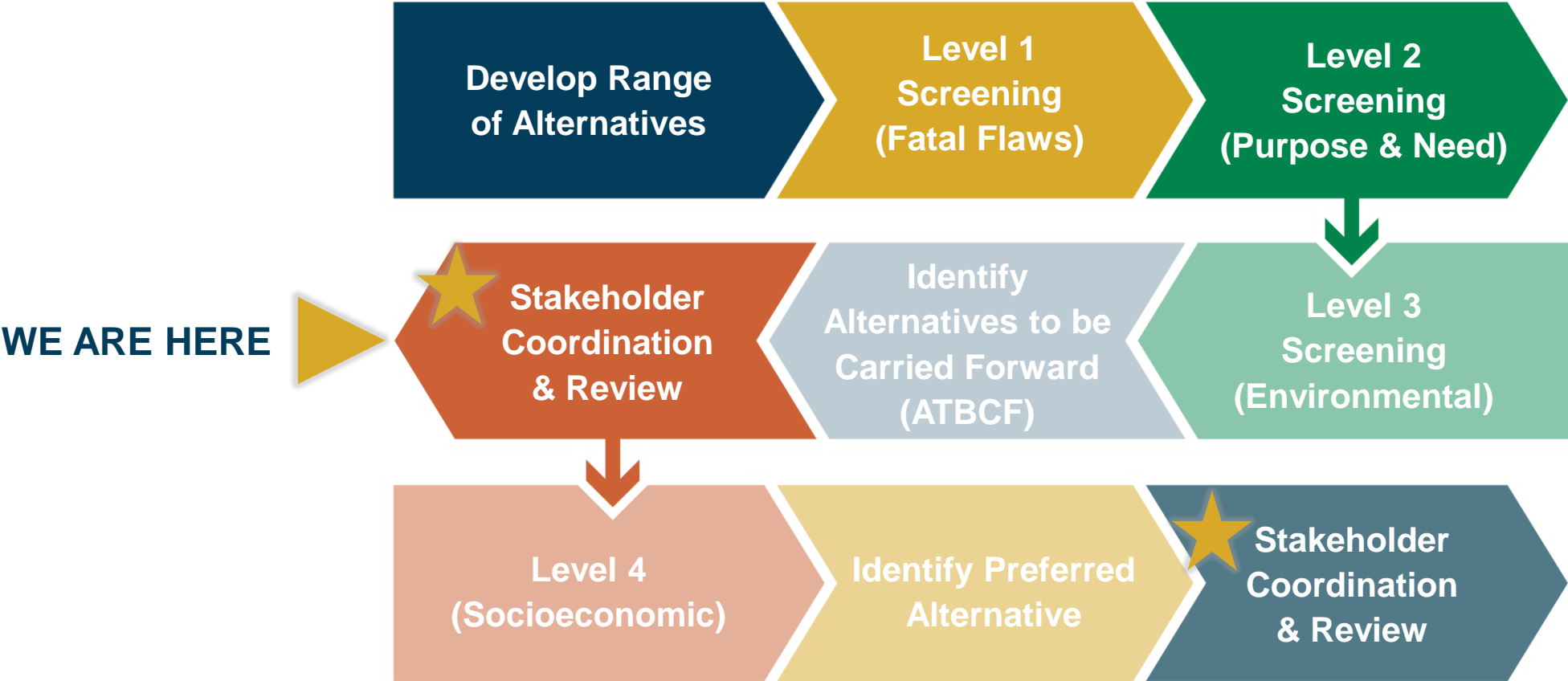
To read the approved Purpose & Need, please visit the project website at:

www.burnhamrailroadstudy.com/documents

Alternatives Analysis Process

Description of how the alternatives evaluated in-depth were identified (i.e., recommended alternatives to be carried forward)

Alternatives Analysis Process



★ CAG & Public Meetings

Alternatives Analysis Step #1: Develop Range of Alternatives

NO-BUILD

13 Overpass Alternatives

- Limit Additional ROW (Alts 2A & 2B)
- Jug Handle (Alts 4A, 4C, 14A & 14B)
- Access Ramps (Alts 6A & 6B)
- Roundabouts (Alt 7A)
- Offset Alignment (Alt 13)
- Split “Tee” Intersection (Alt 9)
- Split “Tee” Intersection with Access Ramps (Alt 10)
- Realigned Intersection (Alt 17A)

15 Underpass Alternatives

- Limit Additional ROW (Alts 3A, 3B & 3C)
- Jug Handle (Alts 4B & 4D)
- Access Ramps (Alts 5A & 5B)
- Roundabouts (Alts 7B & 16)
- Offset Alignment (Alts 8 & 12)
- Split “Tee” Intersection (Alt 11B)
- Split “Tee” Intersection with Access Ramps (Alt 11A)
- Realigned Intersection (Alts 15 & 17B)

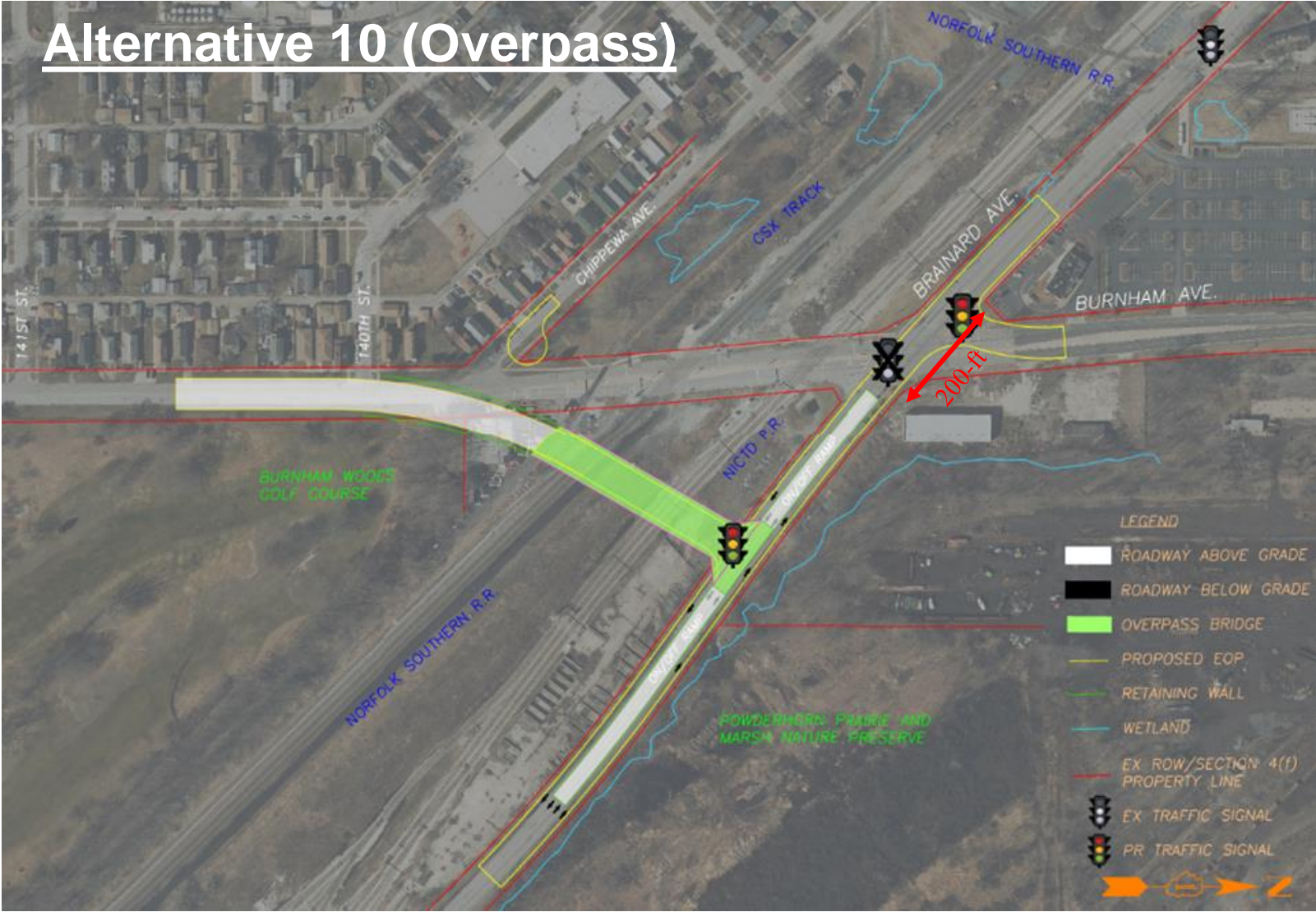
Alternatives Analysis Process: Step #2



★ CAG & Public Meetings

Level 1 Screening (Fatal Flaws)

Alternative Family	Alternatives
Split "Tee" Intersection with Access Ramp	10 and 11A
Elimination Justification: Substandard Geometric Design	
Introduce short weaving distance that degrades traffic operations and intersection safety	



Alternatives Analysis: Steps #1 and #2 Summary

Step #1: Initial Range of Alternatives

NO-BUILD

13 Overpass Alternatives

- Limit Additional ROW (Alts 2A & 2B)
- Jug Handle (Alts 4A, 4C, 14A & 14B)
- Access Ramps (Alts 6A & 6B)
- Roundabouts (Alt 7A)
- Offset Alignment (Alt 13)
- Split “Tee” Intersection (Alt 9)
- Split “Tee” Intersection with Access Ramps (Alt 10)
- Realigned Intersection (Alt 17A)

15 Underpass Alternatives

- Limit Additional ROW (Alts 3A, 3B & 3C)
- Jug Handle (Alts 4B & 4D)
- Access Ramps (Alts 5A & 5B)
- Roundabouts (Alts 7B & 16)
- Offset Alignment (Alts 8 & 12)
- Split “Tee” Intersection (Alt 11B)
- Split “Tee” Intersection with Access Ramps (Alt 11A)
- Realigned Intersection (Alts 15 & 17B)

Step #2: Level 1 Screening Results

NO-BUILD

12 Overpass Alternatives

- Limit Additional ROW (Alts 2A & 2B)
- Jug Handle (Alts 4A, 4C, 14A & 14B)
- Access Ramps (Alts 6A & 6B)
- Roundabouts (Alt 7A)
- Offset Alignment (Alt 13)
- Split “Tee” Intersection (Alt 9)
- Split “Tee” Intersection with Access Ramps (Alt 10) ✖
- Realigned Intersection (Alt 17A)

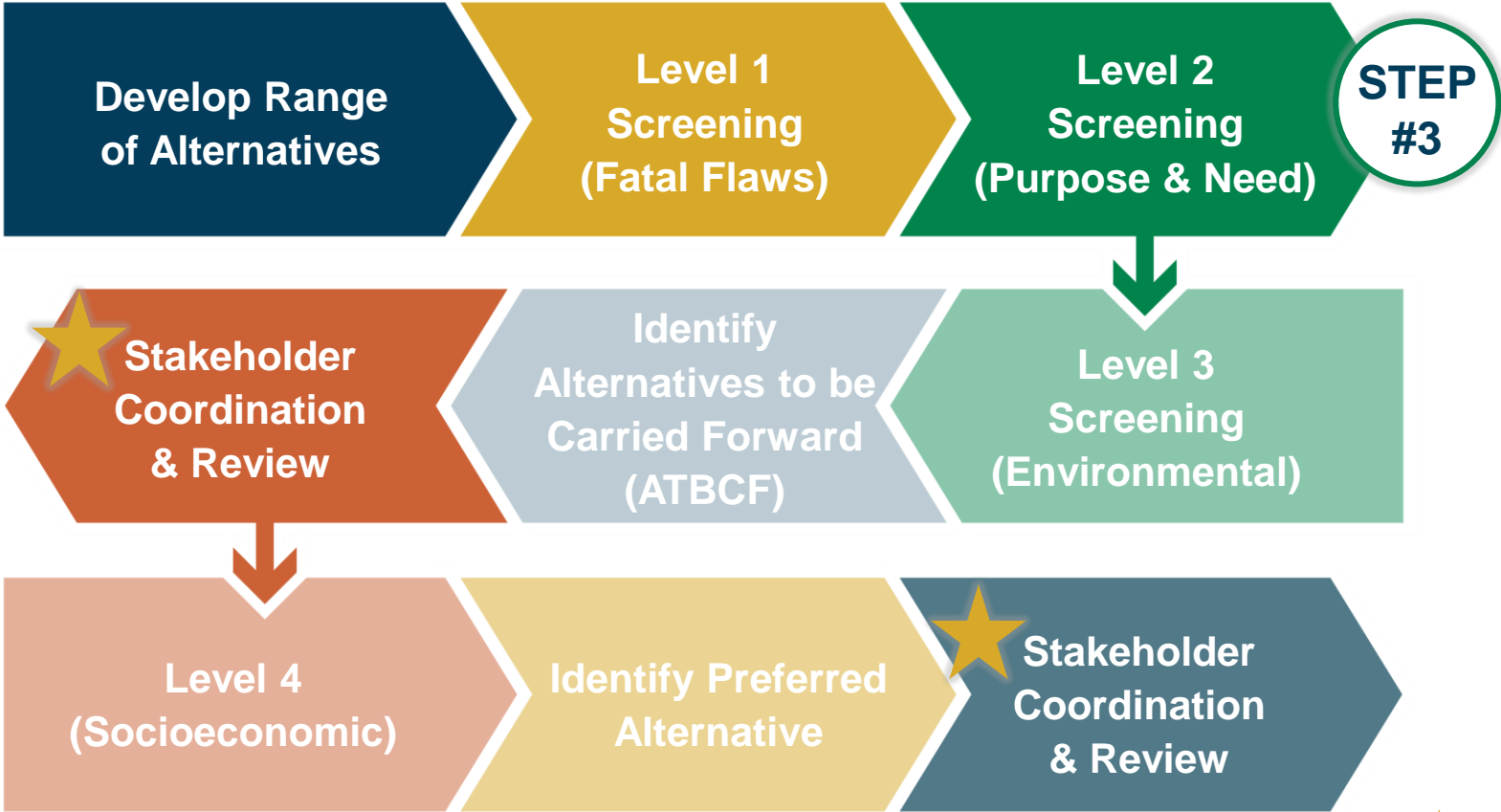
14 Underpass Alternatives

- Limit Additional ROW (Alts 3A, 3B & 3C)
- Jug Handle (Alts 4B & 4D)
- Access Ramps (Alts 5A & 5B)
- Roundabouts (Alts 7B & 16)
- Offset Alignment (Alts 8 & 12)
- Split “Tee” Intersection (Alt 11B)
- Split “Tee” Intersection with Access Ramps (Alt 11A) ✖
- Realigned Intersection (Alts 15 & 17B)

Comments/Questions?



Level 1 screening process eliminated two alternatives that had substandard geometric designs considered fatal flaws

Alternatives Analysis Process: Step #3



★ CAG & Public Meetings

Level 2 Screening (Purpose & Need): Criteria and Factors

Project Objective	Evaluation Criteria	Evaluation Factors	Max Level 2 Screening Score = 150			
Mobility  Max Score = 80	Intersection Operations & Grade Crossing Impacts	Level of Service (LOS)	Maximum Queue Length	Emergency Vehicle Access	Adjacent Project Coordination	Crossing Delay
	Pedestrian/ Bike/ Transit Impacts	Transit Service Disruptions	Length of PAR with Grade > 2%	Bike AND Ped Accommodation		
Safety  Max Score = 70	Predicted Vehicle Crashes	Crashes at the Railroad Crossings	Crashes at Burnham Avenue/Brainard Avenue Intersection	Crashes along Burnham Segment		
	Roadway User Safety	Pedestrian-Rail Conflict	Intersection Skew Angle	Traffic Signal Spacing	Signal Sight Distance	

Jug Handles

Grade Separation	Alternatives
Overpass	4A, 4C, 14A, and 14B
Underpass	4B and 4D

Elimination Justification: Mobility

Introduce 2 new signalized intersections separated by 440-ft segment that achieves LOS E and 215-ft weaving distance between existing Hegewisch Train Station/NS spur traffic signal and proposed Brainard Avenue traffic signal

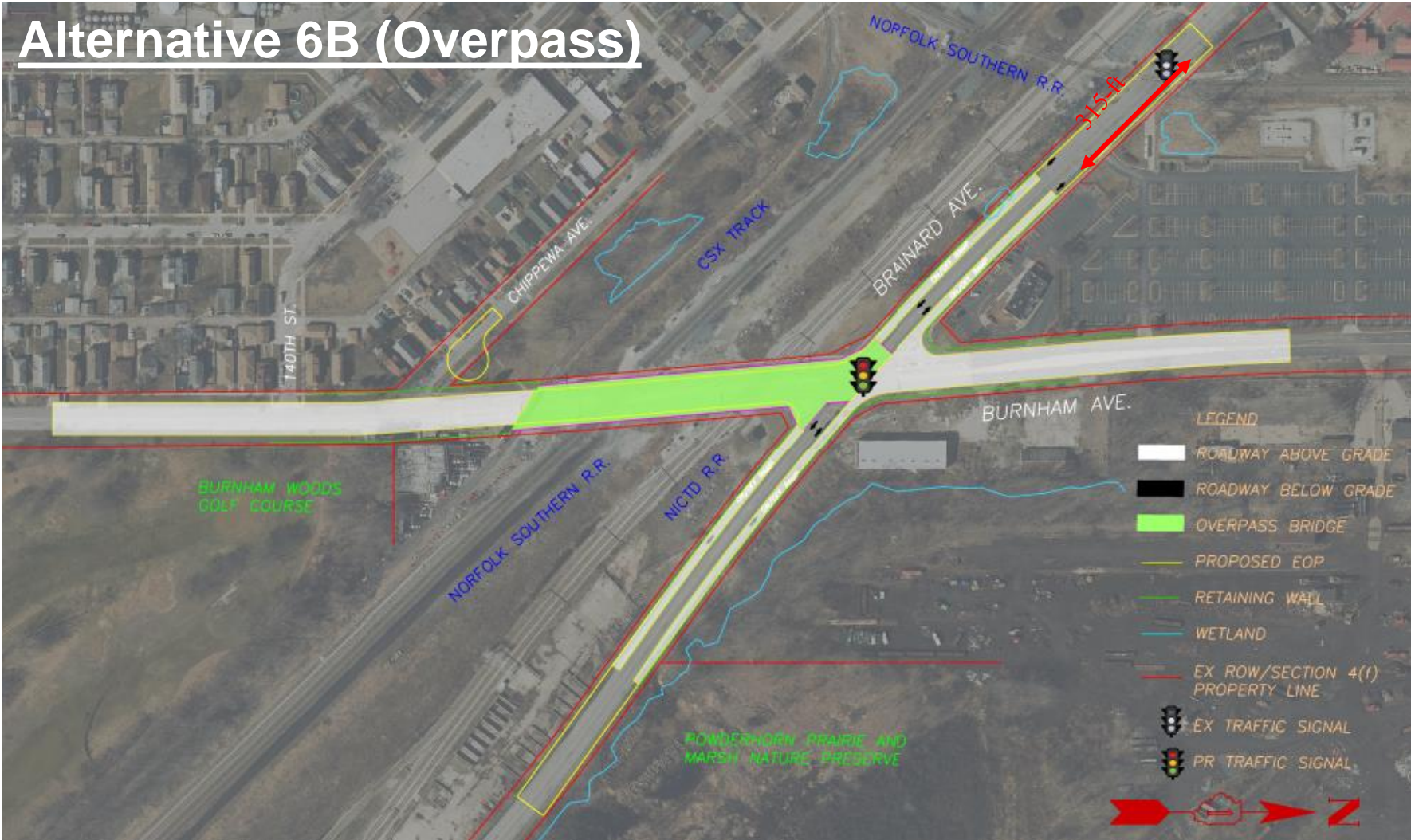


Access Ramps

Grade Separation	Alternatives
Overpass	6A and 6B
Underpass	5A and 5B

Elimination Justification: Mobility & Safety

Access ramps introduce short weaving distance (215 feet to 315 feet) between existing Hegewisch Train Station/NS spur traffic signal and ramps that could degrade traffic operations and safety

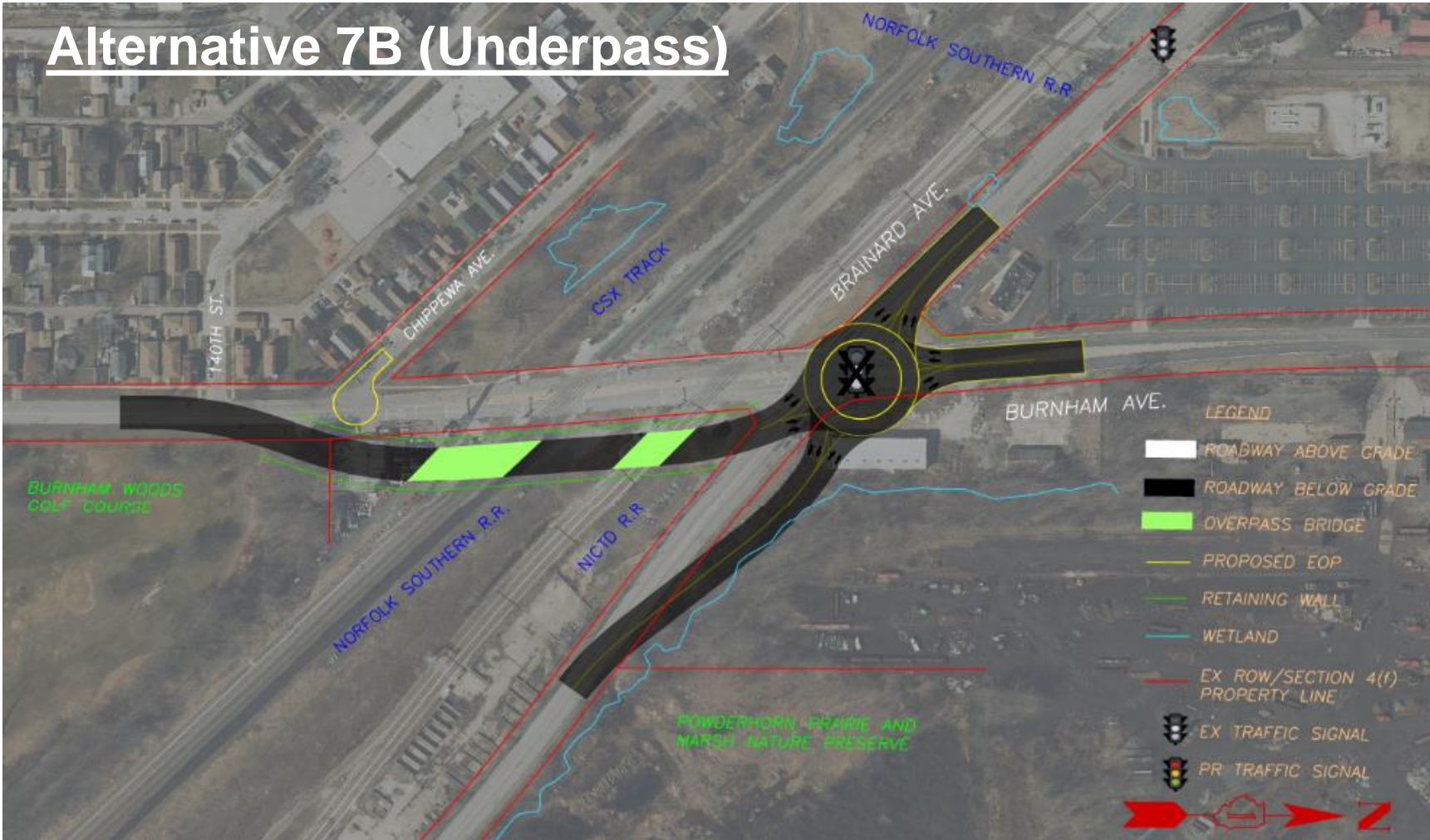


Roundabouts

Grade Separation	Alternatives
Overpass	7A
Underpass	7B and 16

Elimination Justification: Mobility

Single-lane roundabouts achieve LOS F. Therefore, only two-lane roundabouts were considered. Proposed two-lane roundabouts did not meet mobility project need due to challenges of tying into existing conditions



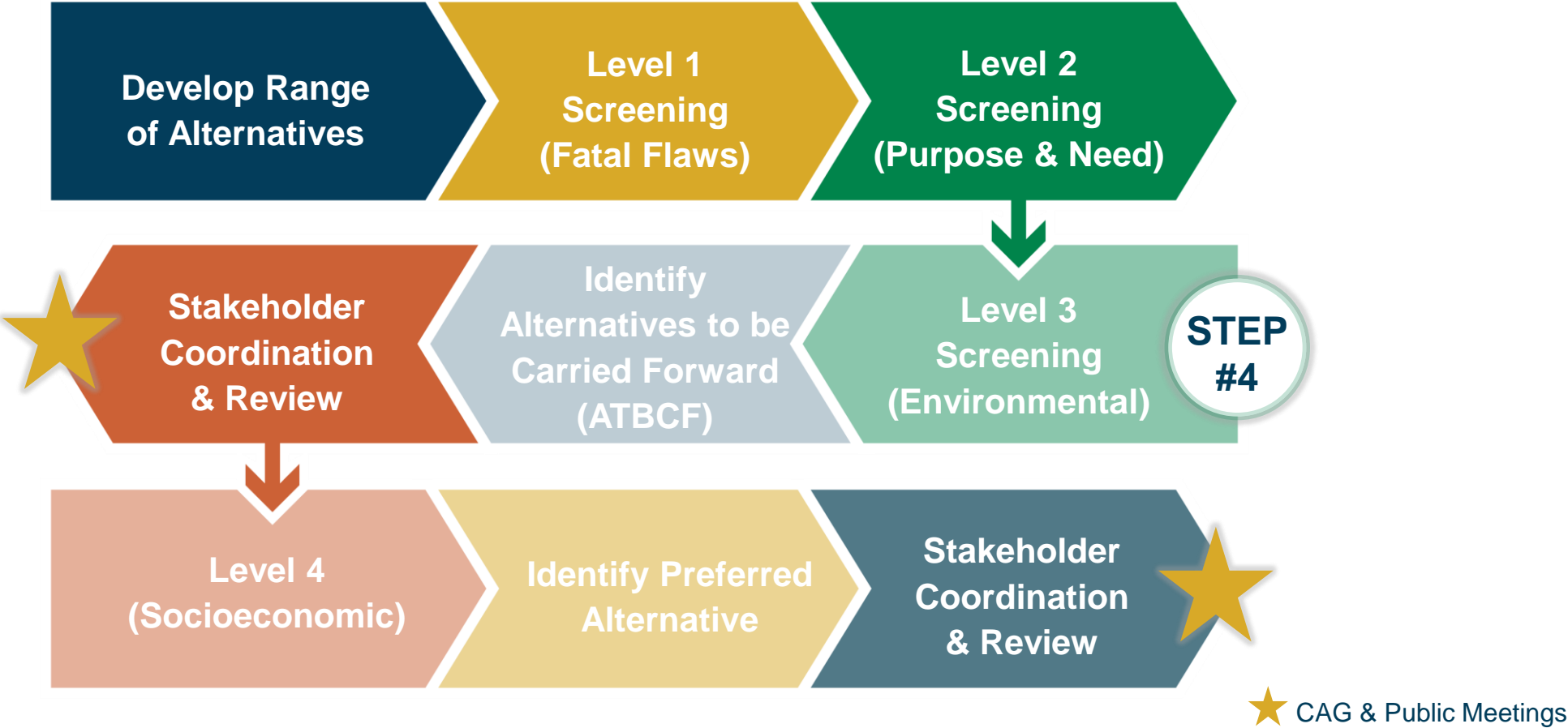
Alternatives Analysis: Steps #1 to #3 Summary

Step #1: Initial Range of Alternatives	Step #2: Level 1 Screening Results	Step #3: Level 2 Screening Results
<div>NO-BUILD 13 Overpass Alternatives<ul style="list-style-type: none">• Limit Additional ROW (Alts 2A & 2B)• Jug Handle (Alts 4A, 4C, 14A & 14B)• Access Ramps (Alts 6A & 6B)• Roundabouts (Alt 7A)• Offset Alignment (Alt 13)• Split “Tee” Intersection (Alt 9)• Split “Tee” Intersection with Access Ramps (Alt 10)• Realigned Intersection (Alt 17A) 15 Underpass Alternatives<ul style="list-style-type: none">• Limit Additional ROW (Alts 3A, 3B & 3C)• Jug Handle (Alts 4B & 4D)• Access Ramps (Alts 5A & 5B)• Roundabouts (Alts 7B & 16)• Offset Alignment (Alts 8 & 12)• Split “Tee” Intersection (Alt 11B)• Split “Tee” Intersection with Access Ramps (Alt 11A)• Realigned Intersection (Alts 15 & 17B)</div>	<div>NO-BUILD 12 Overpass Alternatives<ul style="list-style-type: none">• Limit Additional ROW (Alts 2A & 2B)• Jug Handle (Alts 4A, 4C, 14A & 14B)• Access Ramps (Alts 6A & 6B)• Roundabouts (Alt 7A)• Offset Alignment (Alt 13)• Split “Tee” Intersection (Alt 9)• Fatal Flaw• Realigned Intersection (Alt 17A) 14 Underpass Alternatives<ul style="list-style-type: none">• Limit Additional ROW (Alts 3A, 3B & 3C)• Jug Handle (Alts 4B & 4D)• Access Ramps (Alts 5A & 5B)• Roundabouts (Alts 7B & 16)• Offset Alignment (Alts 8 & 12)• Split “Tee” Intersection (Alt 11B)• Fatal Flaw• Realigned Intersection (Alts 15 & 17B)</div>	<div>NO-BUILD 5 Overpass Alternatives<ul style="list-style-type: none">• Limit Additional ROW (Alts 2A & 2B)• Mobility• Mobility & Safety• Mobility• Offset Alignment (Alt 13)• Split “Tee” Intersection (Alt 9)• Realigned Intersection (Alt 17A) 8 Underpass Alternatives<ul style="list-style-type: none">• Limit Additional ROW (Alts 3A, 3B & 3C)• Mobility• Mobility & Safety• Mobility• Offset Alignment (Alts 8 & 12)• Split “Tee” Intersection (Alt 11B)• Realigned Intersection (Alts 15 & 17B)</div>




Comments/Questions?

Level 2 screening processes eliminated 13 alternatives that do not meet the Purpose and Need

Alternatives Analysis Process: Step #4

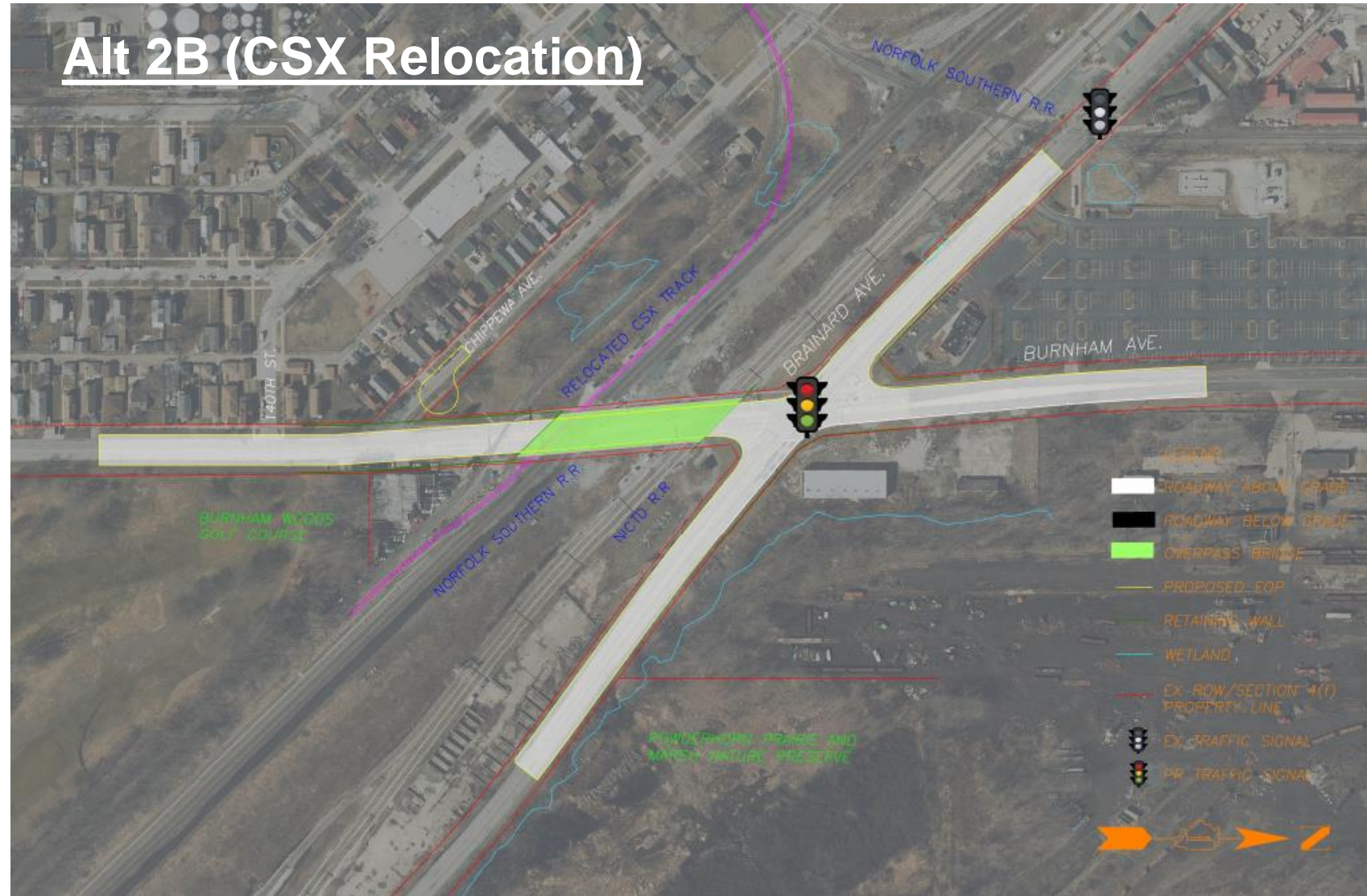


Level 3 Screening (Environmental): Criteria and Factors

Project Objective	Evaluation Criteria	Evaluation Factors	Max Level 3 Screening Score = 250			
Mobility  Max Score = 80	Intersection Operations & Grade Crossing Impacts	Level of Service (LOS)	Maximum Queue Length	Emergency Vehicle Access	Adjacent Project Coordination	Crossing Delay
	Pedestrian/ Bike/ Transit Impacts	Transit Service Disruptions	Length of PAR with Grade > 2%	Bike AND Ped Accommodation		
Safety  Max Score = 70	Predicted Vehicle Crashes	Crashes at the Railroad Crossings	Crashes at Burnham Avenue/Brainard Avenue Intersection	Crashes along Burnham Segment		
	Roadway User Safety	Pedestrian-Rail Conflict	Intersection Skew Angle	Traffic Signal Spacing	Signal Sight Distance	
Environmental  Max Score = 100	Buildings/ Parcels/ Access Impacts	# of Potential Building Relocations	# of Potentially Impacted Residential Parcels	# of Potentially Impacted Local Streets Accesses	# of Potentially Impacted Commercial Accesses	# of Permanent Track Relocations
	Section 4(f)/Natural Resource Impacts	Additional ROW Land Acquisition	Permanent Incorporation of 4(f) Land	# of Potentially Impacted Trees	Wetland Impacts	# of Potentially Impacted Endangered Species

Overpass with Limited Additional ROW & CSX Relocation

Grade Separation	Alternatives
Overpass	2B
Elimination Justification: ROW Impacts	
Relocating CSX track allows for potential 25% reduction in bridge length, but increases potentially impacted acreage by 400%	



Underpass with Limited Additional ROW

Grade Separation	Alternatives
Underpass	3A

Elimination Justification: Access & Parcels Impacts

Providing 3 railroad bridges increases potential impacted parcels by 200% (6 instead of 3) and removes access to 140th in Village of Burnham



Underpass with Limited Additional ROW

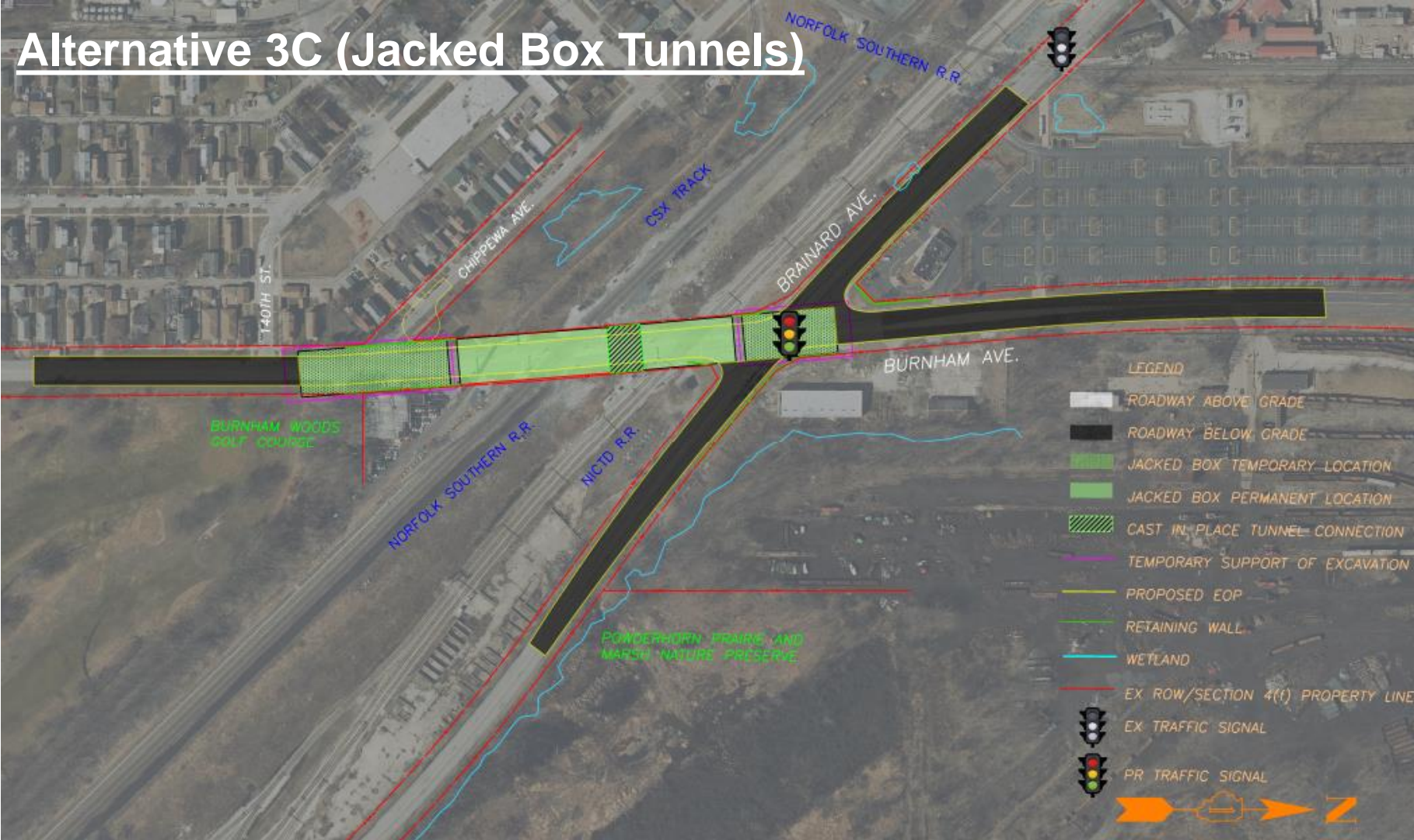
Grade Separation	Alternatives
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Underpass	3C
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Elimination Justification: Building & FPDCC Impacts

Tunnel structure potentially requires permanent easements from Burnham Woods.

Temporary support excavations potentially require 1 building relocation and impact 1 residential parcel

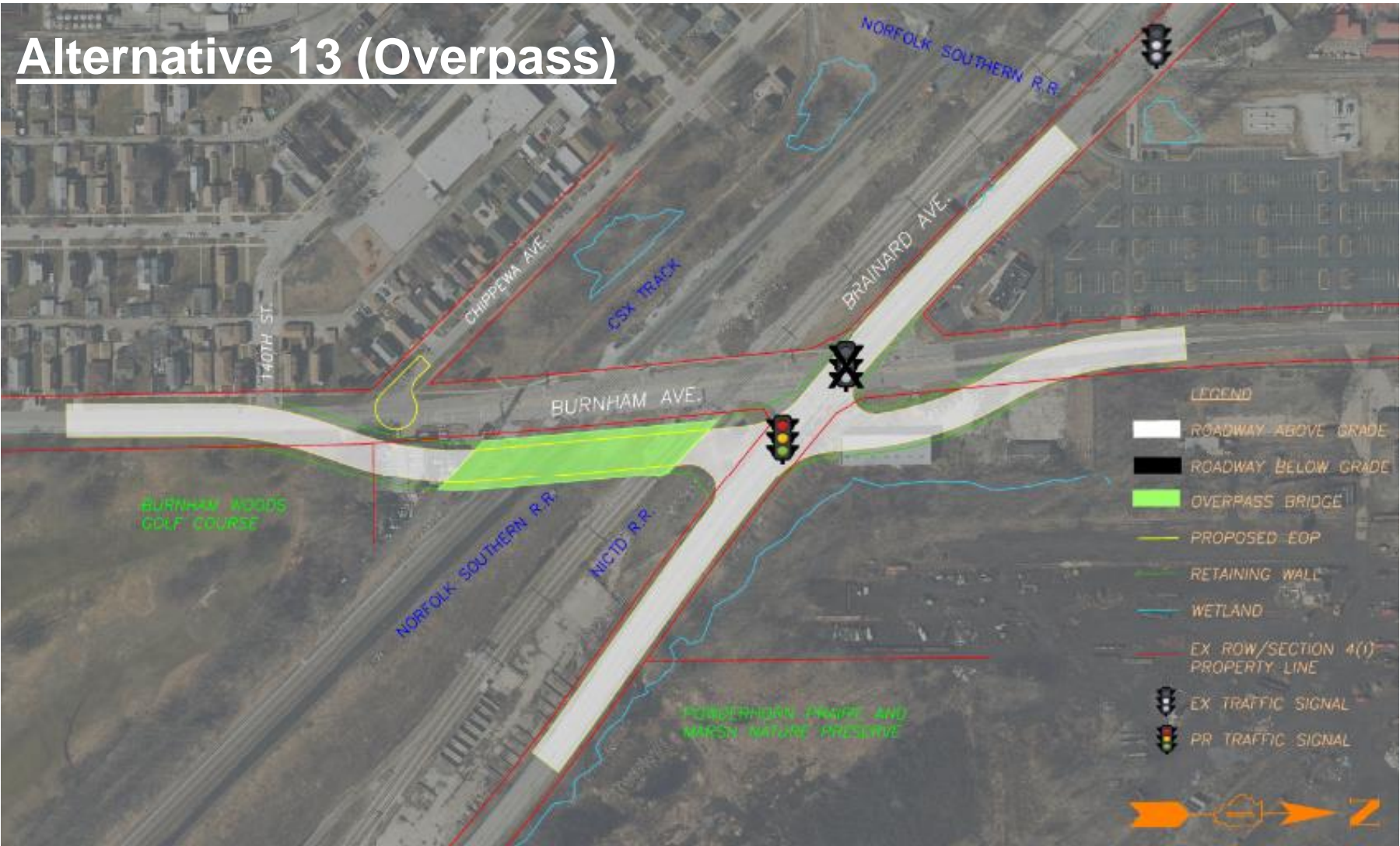


Offset Alignment

Grade Separation	Alternatives
Overpass	13
Underpass	8 and 12

Elimination Justification: Building Impacts

Reconstruction project with 2 potential building relocations while maintaining existing intersection skew



Realigned Intersections

Grade Separation	Alternatives
Overpass	17A
Underpass	15 and 17B

Elimination Justification: FPDCC & ROW Impacts

Reconstruction project that potentially requires more than 10 acres of additional ROW, more than 5 acres of wetland ROW, and increases number of potentially impacted endangered species by 100%.



Alternatives Analysis: Steps #1 to #4 Summary

Step #1: Initial Range of Alternatives	Step #2: Level 1 Screening Results	Step #3: Level 2 Screening Results	Step #4: Level 2 Screening Results
NO-BUILD 13 Overpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alts 2A & 2B)Jug Handle (Alts 4A, 4C, 14A & 14B)Access Ramps (Alts 6A & 6B)Roundabouts (Alt 7A)Offset Alignment (Alt 13)Split "Tee" Intersection (Alt 9)Split "Tee" Intersection with Access Ramps (Alt 10)Realigned Intersection (Alt 17A)	NO-BUILD 12 Overpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alts 2A & 2B)Jug Handle (Alts 4A, 4C, 14A & 14B)Access Ramps (Alts 6A & 6B)Roundabouts (Alt 7A)Offset Alignment (Alt 13)Split "Tee" Intersection (Alt 9)Fatal FlawRealigned Intersection (Alt 17A)	NO-BUILD 5 Overpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alts 2A & 2B)MobilityMobility & SafetyMobilityOffset Alignment (Alt 13)Split "Tee" Intersection (Alt 9)Realigned Intersection (Alt 17A)	NO-BUILD 2 Overpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alt 2A)Alt 2B (ROW Impacts)Building ImpactsSplit "Tee" Intersection (Alt 9)FPDCC & ROW Impacts
15 Underpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alts 3A, 3B & 3C)Jug Handle (Alts 4B & 4D)Access Ramps (Alts 5A & 5B)Roundabouts (Alts 7B & 16)Offset Alignment (Alts 8 & 12)Split "Tee" Intersection (Alt 11B)Split "Tee" Intersection with Access Ramps (Alt 11A)Realigned Intersection (Alts 15 & 17B)	14 Underpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alts 3A, 3B & 3C)Jug Handle (Alts 4B & 4D)Access Ramps (Alts 5A & 5B)Roundabouts (Alts 7B & 16)Offset Alignment (Alts 8 & 12)Split "Tee" Intersection (Alt 11B)Fatal FlawRealigned Intersection (Alts 15 & 17B)	8 Underpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alts 3A, 3B & 3C)MobilityMobility & SafetyMobilityOffset Alignment (Alts 8 & 12)Split "Tee" Intersection (Alt 11B)Realigned Intersection (Alts 15 & 17B)	2 Underpass Alternatives <ul style="list-style-type: none">Limit Additional ROW (Alt 3B)Alt 3A (Access & Parcels Impacts)Alt 3C (Buildings & FPDCC Impacts)Buildings ImpactsSplit "Tee" Intersection (Alt 11B)FPDCC & ROW Impacts

Comments/Questions?

- **Level 1 screening** eliminations: 2 alternatives that had substandard geometric designs that were considered fatal flaws
- **Level 2 screening** eliminations: 13 alternatives that do not meet the Purpose and Need
- **Level 3 screening** eliminations: 9 alternatives that had high environmental impacts

Recommended Alternatives to be Carried Forward (ATBCF)

Overview of ATBCF highlighting each alternatives:

- Roadway and structure improvements
- Alternatives analysis results

ATBCF #1: At-Grade Alternative

No-Build (Alt 1)

Alternative Analysis Summary | Key Impacts

- Mobility:** LOS **E**. Emergency & Pedestrian/bicycle delays
- Safety:** EX skew (**43°**) & pedestrian/rail conflict maintained
- Environmental:** **2** roads; **3** buildings



ATBCF #2: Limited Additional ROW

Overpass (Alt 2A)

Alternative Analysis Summary | Key Impacts

Mobility: LOS C. Station/NS spur impact

Safety: EX skew (43°) maintained.

Environmental: 2 roads; 1 building (0 direct)

4.1 acres (0.20 Burnham Woods)



ATBCF #2: Limited Additional ROW

Overpass (Alt 2A)



ATBCF #2: Limited Additional ROW

Overpass (Alt 2A)



ATBCF #3: Limited Additional ROW

Underpass with CSX Relocate (Alt 3B)

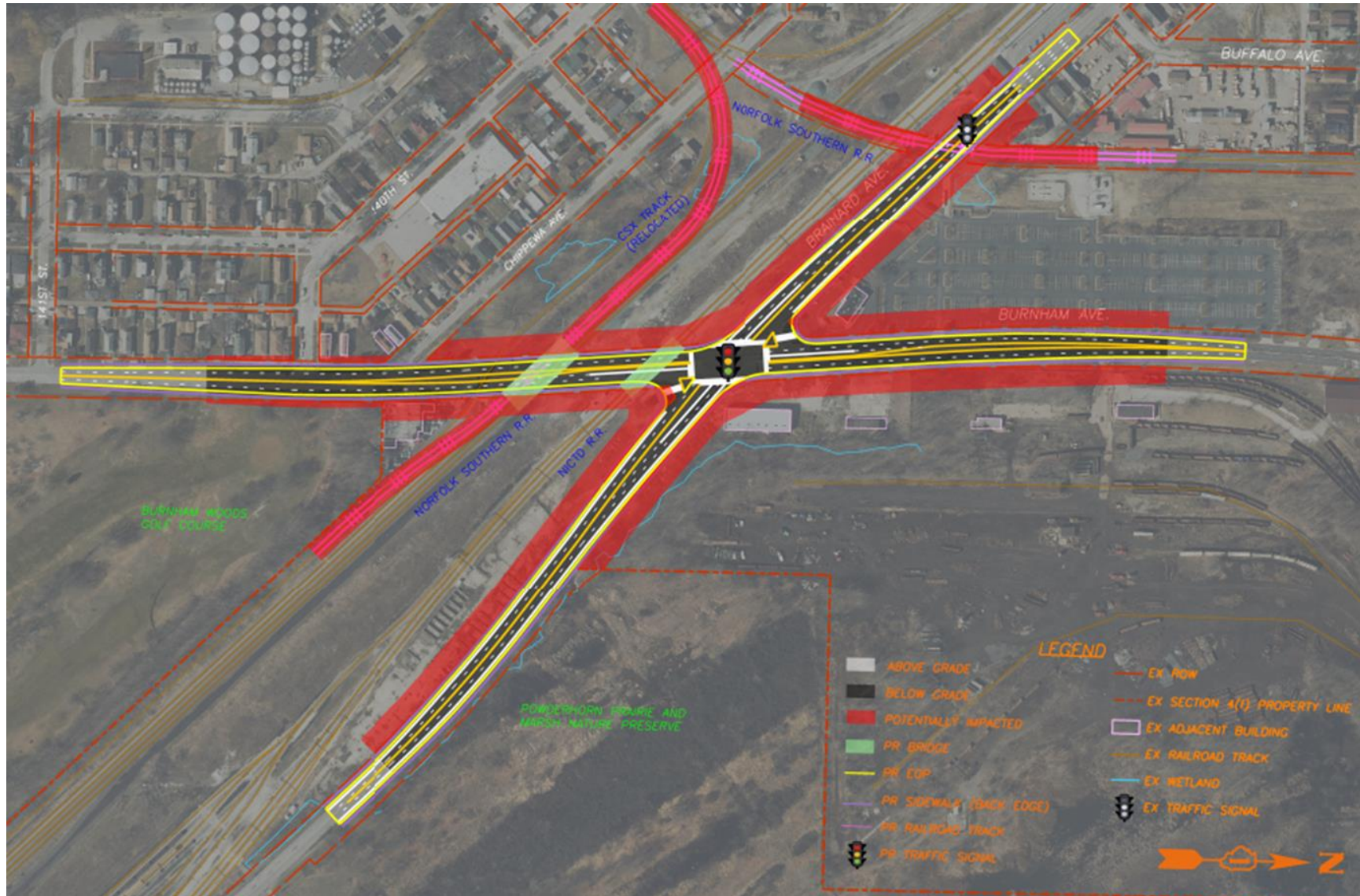
Alternative Analysis Summary | Key Impacts

Mobility: LOS C. Station/NS spur impact

Safety: EX skew (43°) maintained

Environmental: 2 roads; 3 buildings (0 direct)

10.9 acres (0.15 PR Road. 0.15 Burnham Woods)



ATBCF #3: Limited Additional ROW

Underpass with CSX Relocate (Alt 3B)



ATBCF #3: Limited Additional ROW

Underpass with CSX Relocate (Alt 3B)



ATBCF #4: Split “Tee” Intersection

Overpass (Alt 9)

Alternative Analysis Summary | Key Impacts

Mobility: LOS **B** (intersection)
LOS **D** (segment)

Safety: skew $\leq 15^\circ$

Environmental: 2 roads; 5 buildings
(2 direct)

7.4 acres (3.5 PR Road. 0.35 Burnham Woods)



ATBCF #4: Split “Tee” Intersection

Overpass (Alt 9)



ATBCF #4: Split “Tee” Intersection

Overpass (Alt 9)



ATBCF #5: Split "Tee" Intersection

Underpass (Alt 11B)

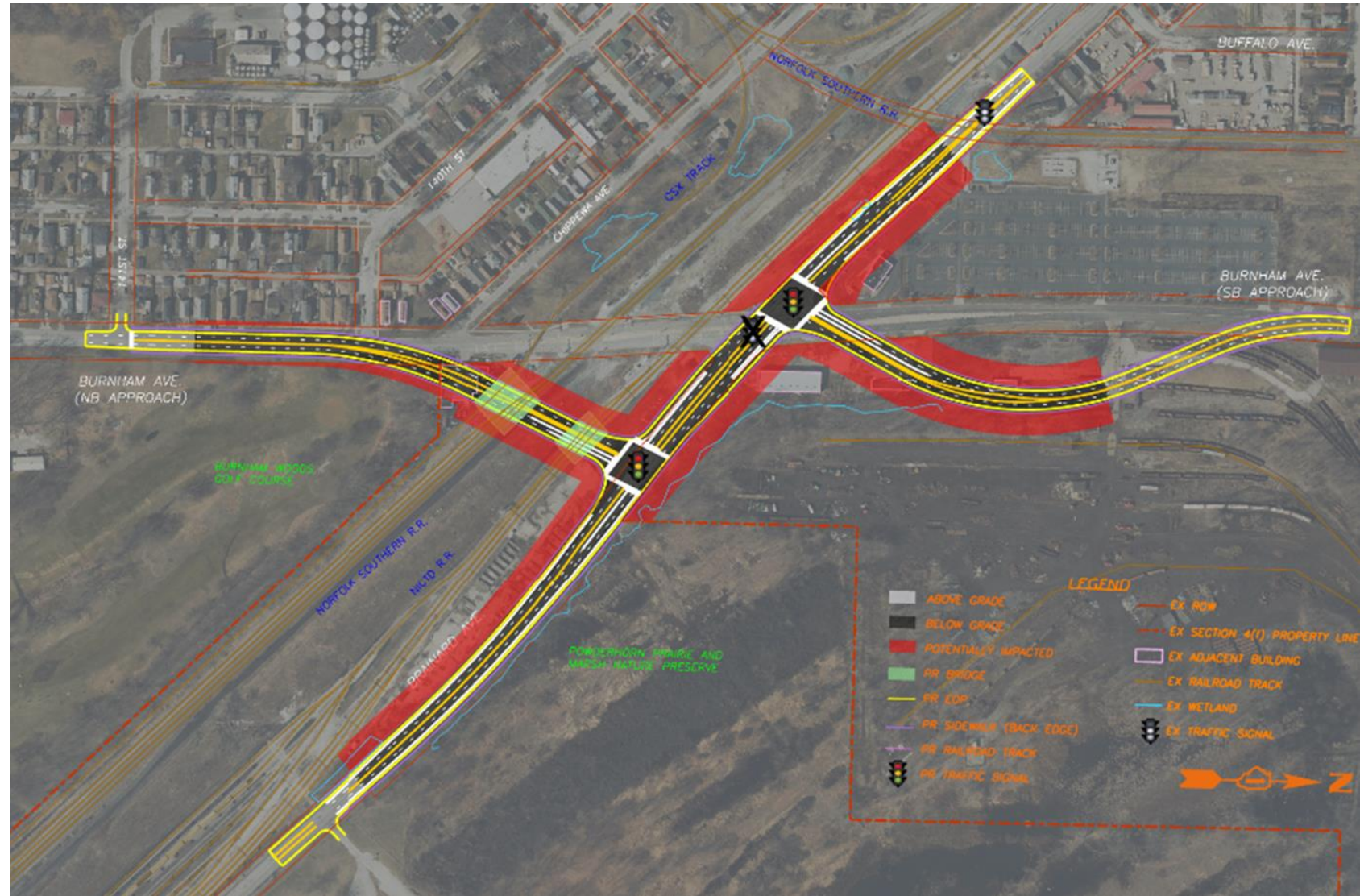
Alternative Analysis Summary | Key Impacts

Mobility: LOS **B** (intersection)
LOS **D** (segment)

Safety: skew $\leq 15^\circ$

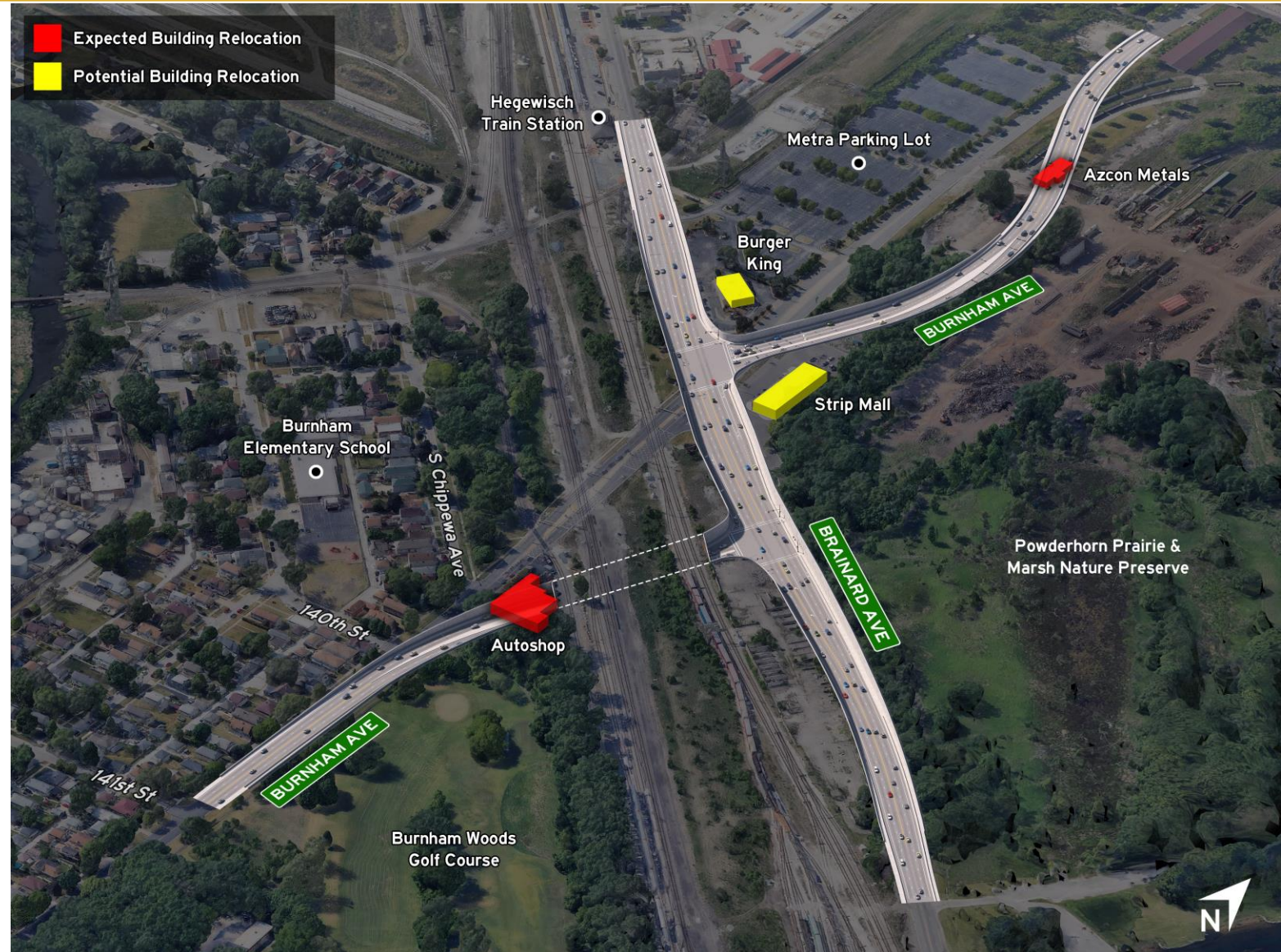
Environmental: 2 roads; 5 buildings
(4 direct)

11.6 acres (3.6 PR Road. 0.35
Burnham Woods)



ATBCF #5: Split “Tee” Intersection

Underpass (Alt 11B)



ATBCF #5: Split “Tee” Intersection

Underpass (Alt 11B)



Comments/Questions?

5 recommended ATBCF will undergo in-depth socioeconomic, environmental, and engineering analyses to identify Preferred Alternative

Audience Survey

Receive and collect feedback from CAG members on the recommended alternatives to be carried forward

Instructions

We will be using an interactive tool called Slido to conduct this brief survey. You may use your phone or computer. If using your phone, please scan the QR code on the following slide. If you're using your computer, type in the URL and enter the join code.

Once joined, please follow the prompts to answer each question as they pop up.

The answers to questions 1 and 2 will show on this screen. The 3rd question will have a closed answer.

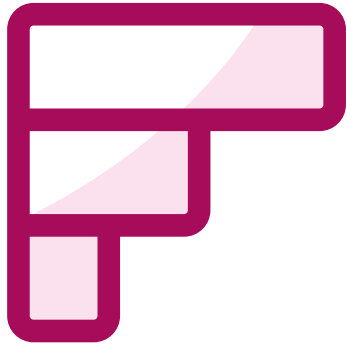
slido



What company/organization are you affiliated with?

① Start presenting to display the poll results on this slide.

slido



Please rank the 5 alternatives to be carried forward (ATBCF) from “1 = Least preferred alternative” to “5 = Most preferred alternative”

① Start presenting to display the poll results on this slide.

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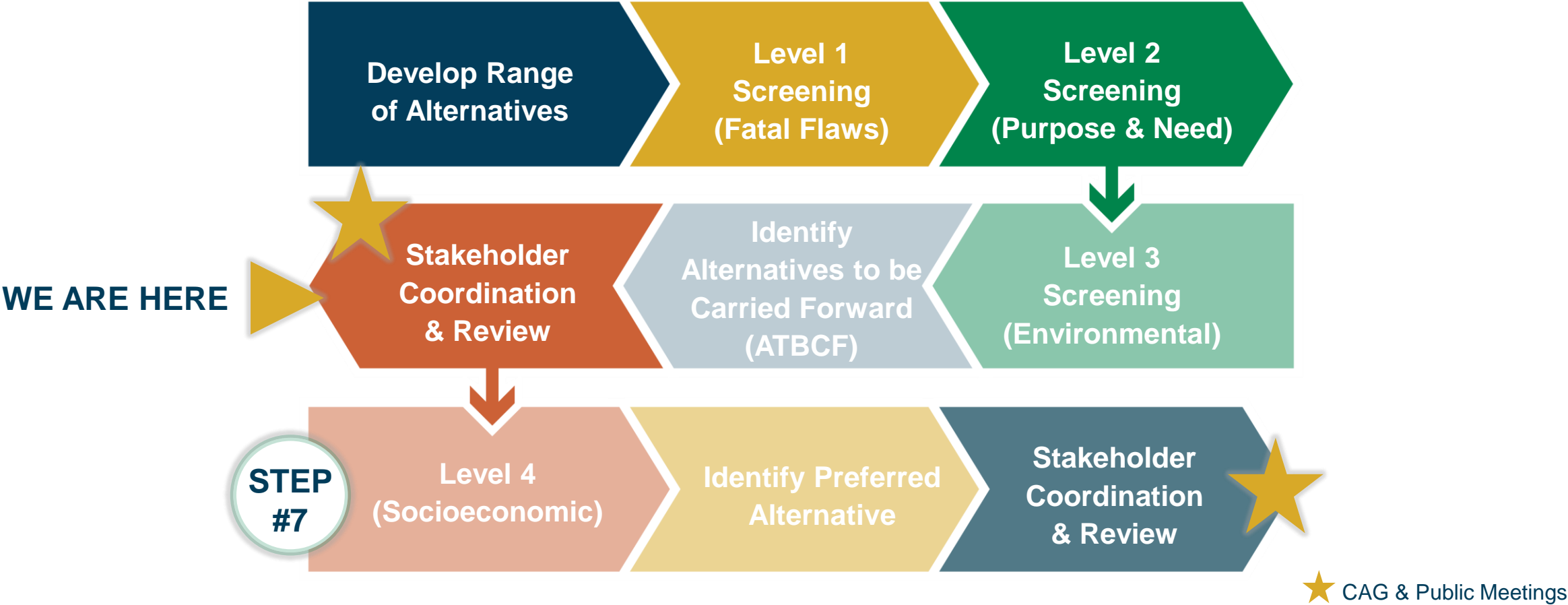
Can you elaborate on your rating? Why is “Alt X” your most preferred and “Alt Y” your least preferred?

① Start presenting to display the poll results on this slide.





Draft Level 4 Screening (Socioeconomic)

Proposed factors to evaluate the 5 ATBCF and
identify preferred alternative

Alternatives Analysis Process: Step #7



Level 4 Screening (Socioeconomic): Criteria and Factors

Project Objective	Evaluation Criteria	Evaluation Factors	Max Level 4 Screening Score = 300			
Mobility  Max Score = 80	Intersection Operations & Grade Crossing Impacts	Level of Service (LOS)	Maximum Queue Length	Emergency Vehicle Access	Adjacent Project Coordination	Crossing Delay
	Pedestrian/ Bike/ Transit Impacts	Transit Service Disruptions	Length of PAR with Grade > 2%	Bike AND Ped Accommodation		
Safety  Max Score = 70	Predicted Vehicle Crashes	Crashes at the Railroad Crossings	Crashes at Burnham Avenue/Brainard Avenue Intersection	Crashes along Burnham Segment		
	Roadway User Safety	Pedestrian-Rail Conflict	Intersection Skew Angle	Traffic Signal Spacing	Signal Sight Distance	
Environmental  Max Score = 100	Buildings/ Parcels/ Access Impacts	# of Potential Building Relocations	# of Potentially Impacted Residential Parcels	# of Potentially Impacted Local Streets Accesses	# of Potentially Impacted Commercial Accesses	# of Permanent Track Relocations
	Section 4(f)/Natural Resource Impacts	Additional ROW Land Acquisition	Permanent Incorporation of 4(f) Land	# of Potentially Impacted Trees	Wetland Impacts	# of Potentially Impacted Endangered Species
Socioeconomic  Max Score = 50	Ease of Implementation	EJ Community Support	4(f) Temporary Occupancy & Construction Impacts	Drainage/Flood Risks	Utility Relocations	Construction Cost Estimate

Comments/Questions?

Any recommendations for revisions or additional factors?

Next Steps

- 1) Present ATBCF to IDOT, FHWA, & environmental resource agencies
- 2) Present ATBCF to Public
- 3) Advance environmental justice, alternative, geometric, & structural analyses
- 4) Next CAG meeting (Summer/Fall 2025)
 - Present analysis findings and recommended preferred alternative





Thank You!

We appreciate
you taking time to
join us!