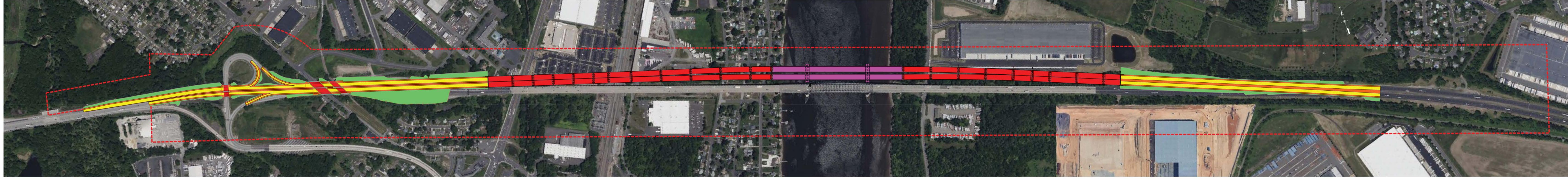
### Alternatives to be Advanced for Detailed Studies

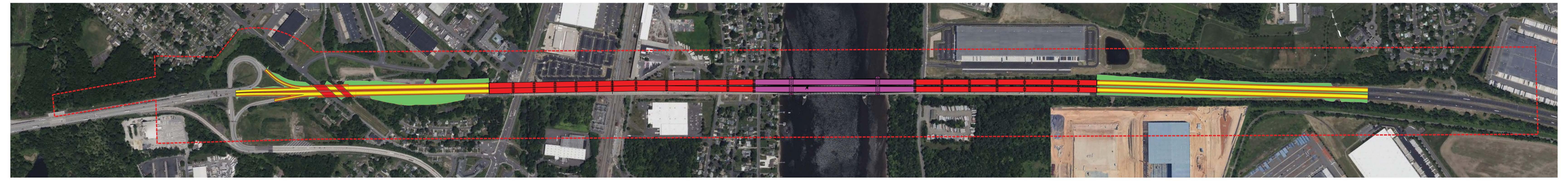


#### NPI: North Partial Impact



#### Proliminary - Contember 2025

### NSA: North Staged Alternate



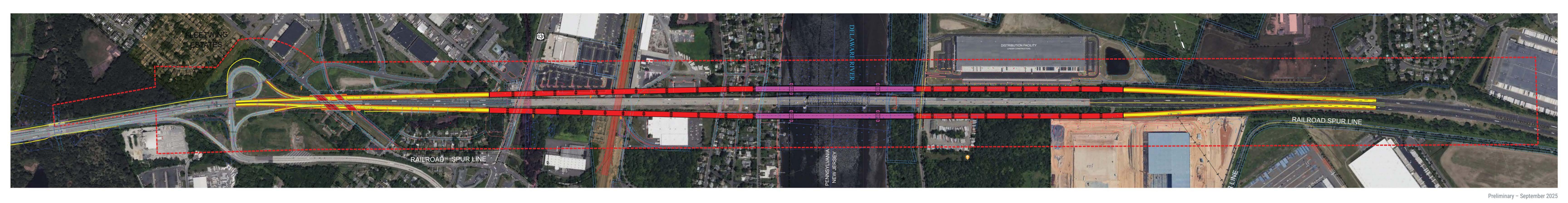
Preliminary - September 2025



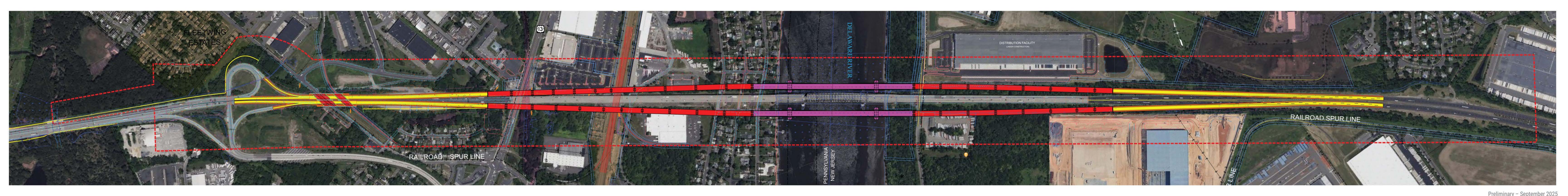
# Range of Alternatives Studied



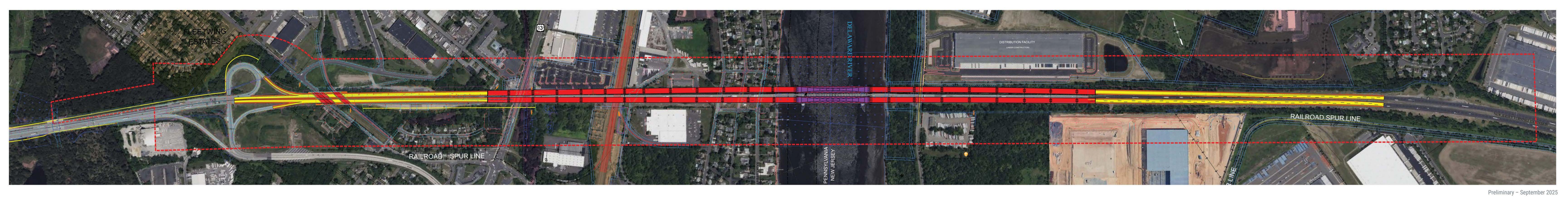
DNI: Dual No Impact



DPI: Dual Partial Impact



DS: Dual Staged



CEMETERY
ADVERTISEMENT
BILLBOARD
BUS STOP
BUS STOP
CELL TOWER
PROPERTY LINE
PROJECT STUDY AREA
WETLANDS / WUS

PARKS
PARKS
PARKS
PARKS
NRHP LISTED / ELIG
NESTING SITE

PARKS
PHASE II / III ESA

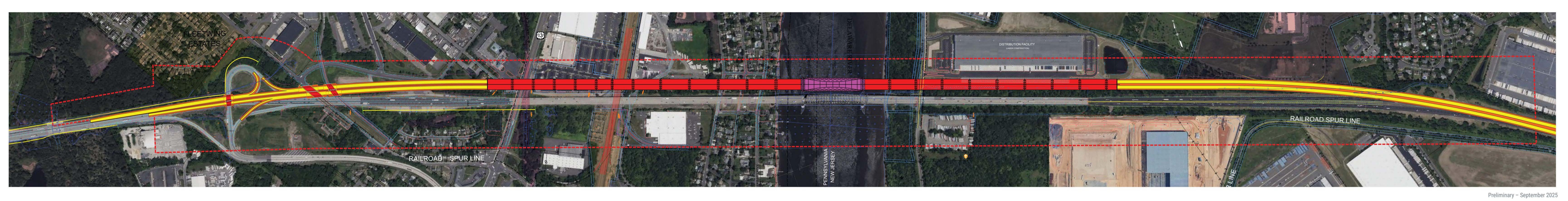
Note: These displays are intended for the October 2025 Public Meeting Open House Series and are subject to change as the project progresses.



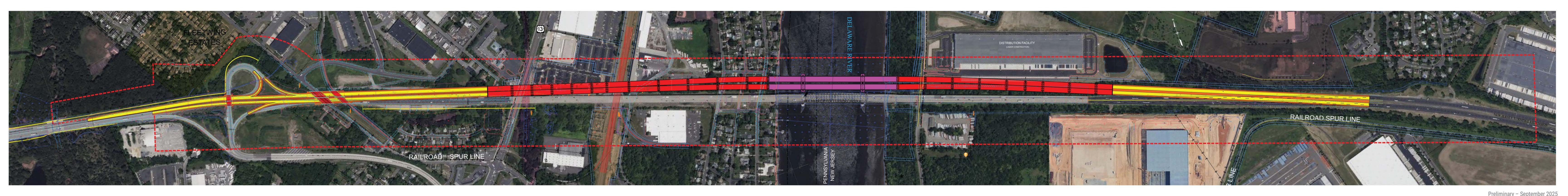
# Range of Alternatives Studied



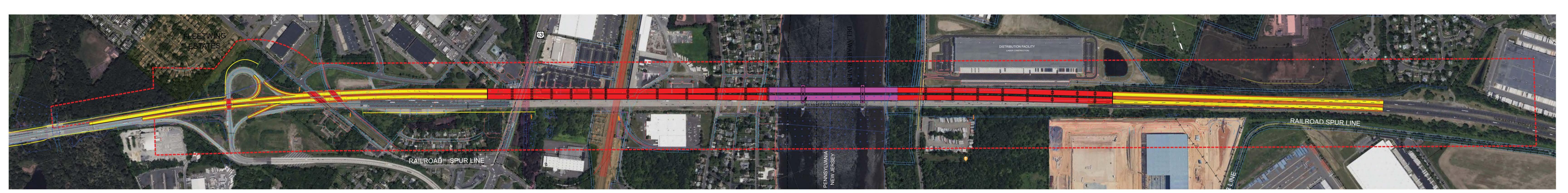
NNI: North No Impact



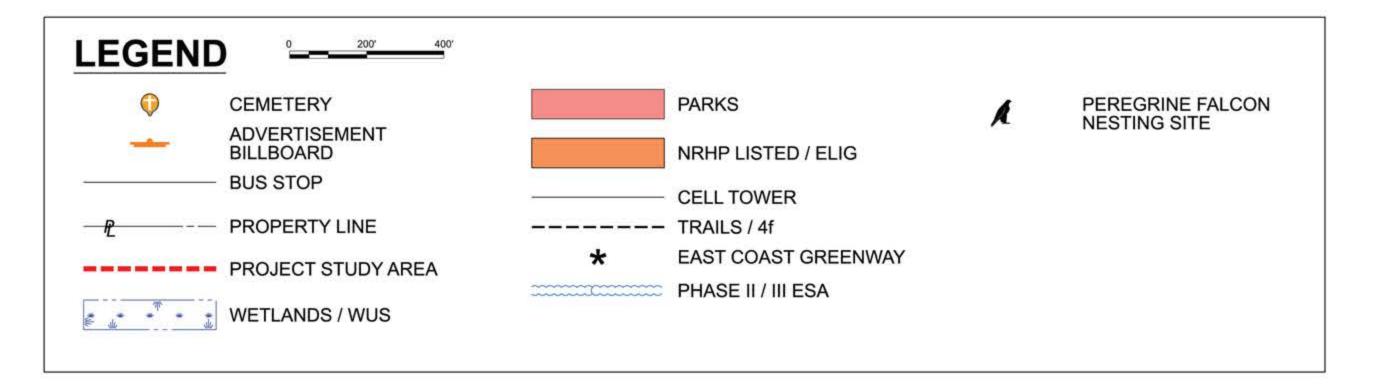
NPI: North Partial Impact



NS: North Staged



Preliminary - September 2025



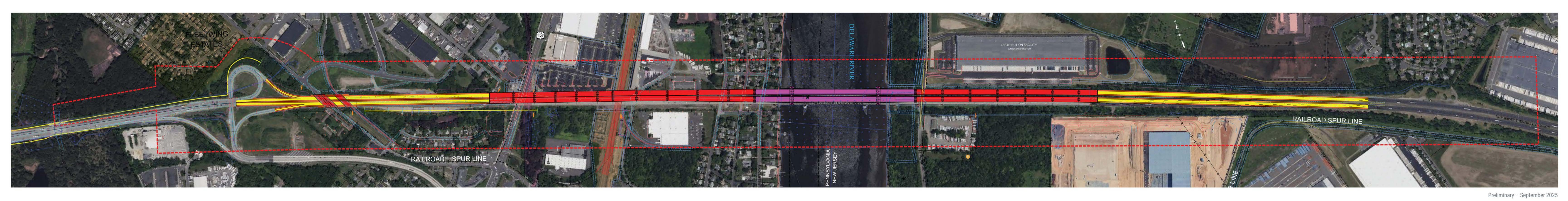
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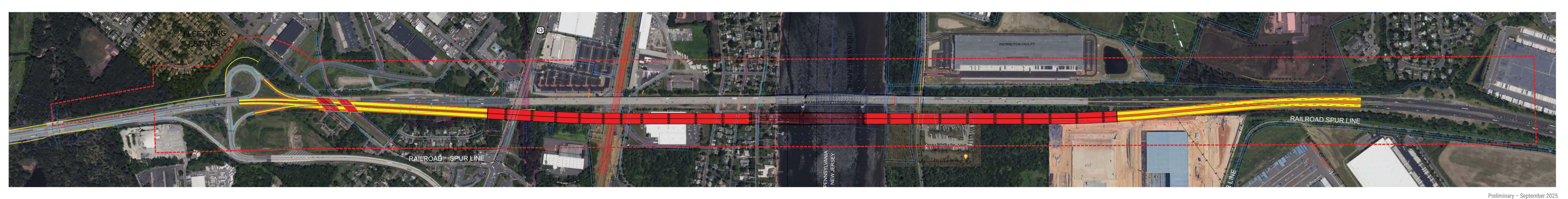
# Range of Alternatives Studied



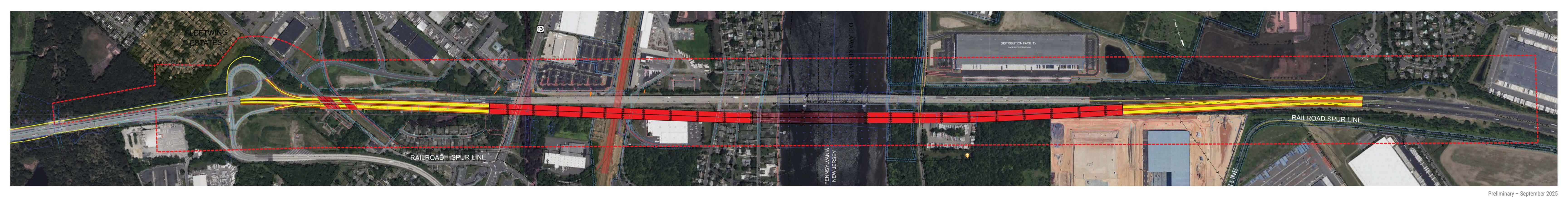
### NSA: North Staged Alternate



SNI: South No Impact



SPI: South Partial Impact



CEMETERY
ADVERTISEMENT
BILLBOARD
BUS STOP
PROPERTY LINE
PROJECT STUDY AREA

WETLANDS / WUS

PARKS
PARKS
PARKS
PARKS
PEREGRINE FALCON
NESTING SITE

NRHP LISTED / ELIG

NRHP LISTED / ELIG

STOP
CELL TOWER
TRAILS / 4f
EAST COAST GREENWAY
PHASE II / III ESA

Note: These displays are intended for the October 2025 Public Meeting Open House Series and are subject to change as the project progresses.



## Preliminary Alternatives Analysis



# DELAWARE RIVER BRIDGE REPLACEMENT AT MP H-43.4 ALIGNMENT ALTERNATIVES EVALUATION MATRIX

Legend:
No/Low Impact Moderate Impact Medium Impact
High Impact Substantial Impact

	SOUTH ALIGNMENTS		NORTH ALIGNMENTS		SPLIT ALIGNMENTS		STAGED ALIGNMENTS			
	Alternative South No Impact (SNI)	Alternative South Partial Impact (SPI)	Alternative North No Impact (NNI)	North Dartial	Alternative Dual No Impact (DNI)	Dautial Impact	North Staged	Alternative North Staged Alternate (NSA)	Alternative Dual Staged (DS)	
ENVIRONMENTAL - Evaluates the impacts to the various environmental features and wildlife.										
NATURAL RESOURCES										
Surface Waters/ Wetlands (LF/Acres)	1,650 / 0.5	1,650 / 0.5	3,456 / 0.7	3,470 / 0.2	1,696 / 0.5	1,679 / 0.7	3,390 / 0.3	1,543 / 0.2	1,305 / 0.3	
Floodplains (Acres)	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.7	
Submerged Aquatic Vegetation	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	
Forested Areas (Acres)	33	31	27	24	29	28	23	21	21	
CULTURAL RESOURCES - Above Ground Historic										
Fleetwing Estates Historic District (Resource No. 2024RE00974)	No Impact 1	No Impact	Potential Impact	Potential Impact	No Impact	No Impact	Potential Impact	No Impact	No Impact	
Pennsylvania Railroad: Main Line (Philadelphia to New York) Historic District (Resource No. 1994RE01403)	Potential Impact   1	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	
Pennsylvania Railroad: Grundy Tower (Resource No. 1999RE00833)	Potential Impact	Potential Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	
Delaware Division of the Pennsylvania Canal Historic District (Resource No. 1974RE00074)	Potential Impact   1	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	
Delaware River Bridge (Resource No. 2005RE00744)	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	
CULTURAL RESOURCES - Archaeological										
Black Ditch Park Site (36BU0348)	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	
Court Square Site (36BU0349)	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	
Site 28BU0703	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	
Site 28BU0702	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	
THREATENED and ENDANGERED SPECIES										
Atlantic Sturgeon	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	
Peregrine falcon (2)	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	
Other Species	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	
PARKS and RECREATIONAL AREAS										
Black Ditch Park Site	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	
Pacific Park	Potential Impact	Potential Impact	No Impact	No Impact	Potential Impact	Potential Impact	No Impact	No Impact	No Impact	
Delaware River Heritage Trail	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	
Green Acres funded property (Veterans Park)	No Impact	No Impact	Potential Impact	Potential Impact	No Impact	No Impact	Potential Impact	Potential Impact	Potential Impact	
HAZARDOUS, RESIDUAL, and INDUSTRIAL AREAS (Acres)	Potential Hazardous Waste: 4.3 Potential Area of Concern: 8.7	Potential Hazardous Waste: 4.8 Potential Area of Concern: 6.7	Potential Hazardous Waste: 18.9	Potential Hazardous Waste: 9.0	Potential Hazardous Waste: 7.2 Potential Area of Concern: 5.9	Potential Hazardous Waste: 5.9 Potential Area of Concern: 4.6	Potential Hazardous Waste: 4.9	Potential Hazardous Waste: 2.9	Potential Hazardous Waste: 2.8	
SOCIOECONOMIC IMPACTS	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	Potential Impact	
Alternatives Matrix Summary	Alternative South No Impact (SNI)	Alternative South Partial Impact (SPI )	Alternative North No Impact (NNI)	Alternative North Partial Impact (NPI ) <sup>(1)</sup>	Alternative Dual No Impact (DNI)	Alternative Dual Partial Impact (DPI)	Alternative North Staged (NS)	Alternative North Staged Alternate (NSA) <sup>(1)</sup>	Alternative Dual Staged (DS)	

<sup>(1)</sup> Alternative recommended for advancement and further study.



<sup>(2)</sup> Impact to the peregrine falcon is the removal of the existing bridge.

## Preliminary Alternatives Analysis



Nine (9) alternatives and a No-Build Alternative were evaluated based on the location of the new bridges and type of construction as part of the Preliminary Alternatives Analysis phase. The analysis included alternatives that would be:

- Entirely north or entirely south of the existing DRB
- Split, with one bridge north and one bridge south of the existing DRB
- Staged, with a portion of the new bridge within the footprint of the existing DRB
- References to "impact" in the alignment name relates to each alignment's impact on the existing structure

Previous and updated secondary source data was used to identify resource presence and quantify potential impacts. The results are provided in the **Evaluation Matrix.** 

As a result of this analysis, two alternatives that best meet the project's Purpose and Need while balancing environmental impacts and other considerations were identified. These alternatives are being advanced for detailed study in the Supplemental Environmental Impact Statement (SEIS). The No Build Alternative will also be advanced into the SEIS as a basis for comparison with the two build alternatives.

#### DELAWARE RIVER BRIDGE REPLACEMENT AT MP H-43.4 **ALIGNMENT ALTERNATIVES EVALUATION MATRIX**

<u>Legend:</u>		
No/Low Impact	Moderate Impact	Medium Impact
High Impact	Substantial Impact	

	SOUTH ALIGNMENTS		NORTH ALIGNMENTS		SPLIT ALIGNMENTS		STAGED ALIGNMENTS		
	Alternative South No Impact (SNI)	Alternative South Partial Impact (SPI)	Alternative North No Impact (NNI)	North Partial	Alternative Dual No Impact (DNI)	Partial Impact	Alternative North Staged (NS)	Alternative North Staged Alternate (NSA)	Alternative Dual Staged (DS)
ROADWAY - evaluates geometry of the proposed turnpike and impacts to the interchange ramps/roadways below the turnpike.									
GEOMETRY (HORIZONTAL AND VERTICAL)	Reverse Curves Required	Reverse Curves Required	Typical Geometry	Typical Geometry	Reverse Curves Required	Reverse Curves Required	Typical Geometry	Typical Geometry	Typical Geometry
INTERCHANGE IMPACTS - SR 0013 Ramps (SF/LF)	35,960 / 1,010	28,460 / 810	43,645 / 1,180	45,515 / 1,260	28,560 / 815	30,070 / 860	46,040 / 1,275	31,660 / 900	31,405 / 895
LOCAL ROAD IMPACTS (SF/LF)	89,655 / 2,490	83,305 / 2,360	140,725 / 3,440	79,860 / 2,075	102,570 / 2,770	96,340 / 2,655	110,415 / 2,705	56,675 / 1,395	53,080 / 1,275
STRUCTURES - evaluates merits of the proposed Delaware River Bridge, roadway approach bridges, required retaining walls, and sign structures.									
MAIN SPAN	Single Bridge Built in Single Phase	Single Bridge Built in Single Phase	Single Bridge Built in Single Phase	Single Bridge Built in Single Phase	Dual Bridge Built in Single Phase	Dual Bridge Built in Single Phase	Single Bridge Built in Two Phases	Single Bridge Built in Two Phases	Dual Bridge Built in Two Phases
PA APPROACH SPANS	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder
NJ APPROACH SPANS	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder	Steel I-Girder
ANCILLARY STRUCTURES - Bridges, Walls and Signs (#/SF/#)	2 / 22,400 / 5	2 / 21,400 / 5	3 / 22,400 / 8	3 / 31,050 / 5	2 / 51,150 / 5	2 / 40,499 / 5	3 / 27,600 / 5	2 / 22,400 / 5	2 / 39,036 / 5
RIGHT-OF-WAY - Evaluates the impacts on commercial, industrial, and residential properties.									
COMMERCIAL IMPACTS	Medium Impact	Medium Impact	High Impact	Medium Impact	High Impact	High Impact	Medium Impact	Low Impact	Low Impact
INDUSTRIAL IMPACTS	Moderate impact	Moderate impact	Medium Impact	Moderate impact	Medium Impact	Medium Impact	Medium Impact	Moderate impact	Moderate impact
RESIDENTIAL IMPACTS	Moderate impact	Moderate impact	Medium Impact	Medium Impact	Medium Impact	Medium Impact	Medium Impact	Moderate impact	Moderate impact
BILLBOARDS/CELL TOWERS	Low Impact	Low Impact	Low Impact	Low Impact	Moderate impact	Moderate impact	Low Impact	Low Impact	Low Impact
CONSTRUCTABILITY - Evaluates	the complexit	ty associated v	with the const	ruction of the	roadway appı	oaches.			
ROADWAY	Moderately Complex Phasing, Substantial Fill	Moderately Complex Phasing, Center Work Zone, Substantial Fill	Moderately (omplex	Moderately Complex Phasing, Center Work Zone, Substantial Fill	Complex Phasing, Substantial Fill	Complex Phasing, Center Work Zone, Substantial Fill	Complex Phasing, Substantial Fill	Complex Phasing, Substantial Fill	Complex Phasing, Substantial Fill
RAILROAD - Evaluates the impa	cts to the East	Penn Railroa	d crossing belo	ow the turnpi	ke and the Am	trak Northeas	t Corridor fac	ilities.	
East Penn Railroad	Low Impact	Low Impact	Low Impact	Low Impact	Low Impact	Low Impact	Low Impact	Low Impact	Low Impact
Amtrak (NEC)	Substation Relocation Required	Substation Relocation Required	Moderate Impact	Moderate Impact	Substation Relocation Required	Substation Relocation Required	Moderate Impact	Moderate Impact	Moderate Impact
PUBLIC UTILITIES - Evaluates the	e impacts to tl	ne Amtrak pov	ver transmissi	on lines abov	e the Delawar	e River Bridge	and other uti	lity facilities b	elow.
Amtrak Transmission Lines	Transmission Line Relocation Required	Transmission Line Relocation Required	Transmission Line Relocation Required	Transmission Line Relocation Required	Transmission Line Relocation Required	Transmission Line Relocation Required	Transmission Line Relocation Required	Transmission Line Relocation Required	Transmission Line Relocation Required
Minor Facilities Below Bridge	Low Impact to Minor Utilities	Low Impact to Minor Utilities	Low Impact to Minor Utilities	Low Impact to Minor Utilities	Low Impact to Minor Utilities	Low Impact to Minor Utilities	Low Impact to Minor Utilities	Low Impact to Minor Utilities	Low Impact to Minor Utilities
TRAFFIC CONTROL - Evaluates t	he complexity	associated w	ith maintainin	g traffic on th	e turnpike dur	ing constructi	on.		
	4 Phases	4 Phases	3 Phases	3 Phases with Temporary Widening	4 Phases	4 Phases with Temporary Widening	3 Phases with Temporary Crossover	3 Phases with Temporary Crossover	4 Phases with Temporary Widening
TOLLING - Evaluates the impact	s to the turnp	ikes tolling fac	cilities during o						
	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities	Low Impact to Tolling Facilities
INITIAL COMPARATIVE COSTS - Compares the relative construction cost.									
	Moderate Comparative			Moderate Comparative				Moderate Comparative	High Comparative Cost
Alternatives Matrix Summary	Alternative South No Impact (SNI)	Alternative	Alternative North No Impact (NNI)	Alternative North Partial Impact (NPI ) <sup>(1)</sup>	Alternative Dual No Impact (DNI)	Alternative Dual Partial Impact (DPI)	Alternative North Staged (NS)	Alternative North Staged Alternate (NSA) <sup>(1)</sup>	Alternative Dual Staged (DS)

(1) Alternative recommended for advancement and further study.

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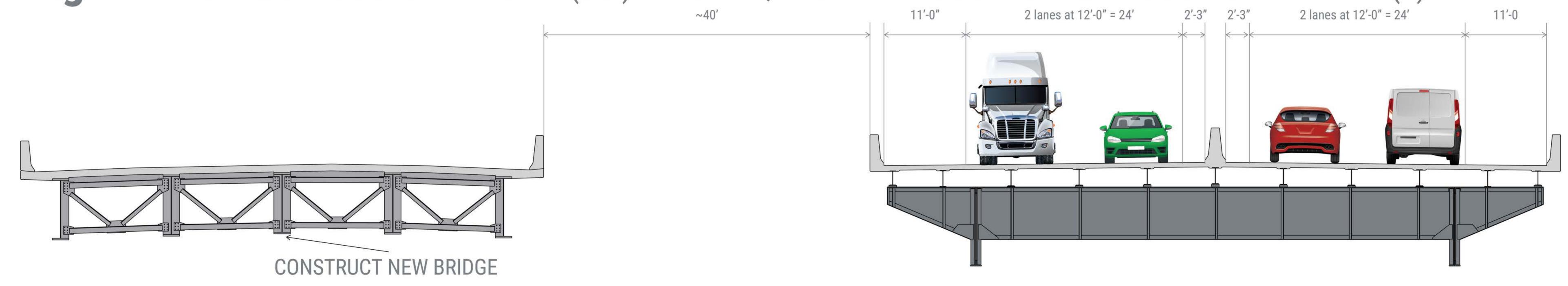
## Alternative NSA Staging – Typical Sections



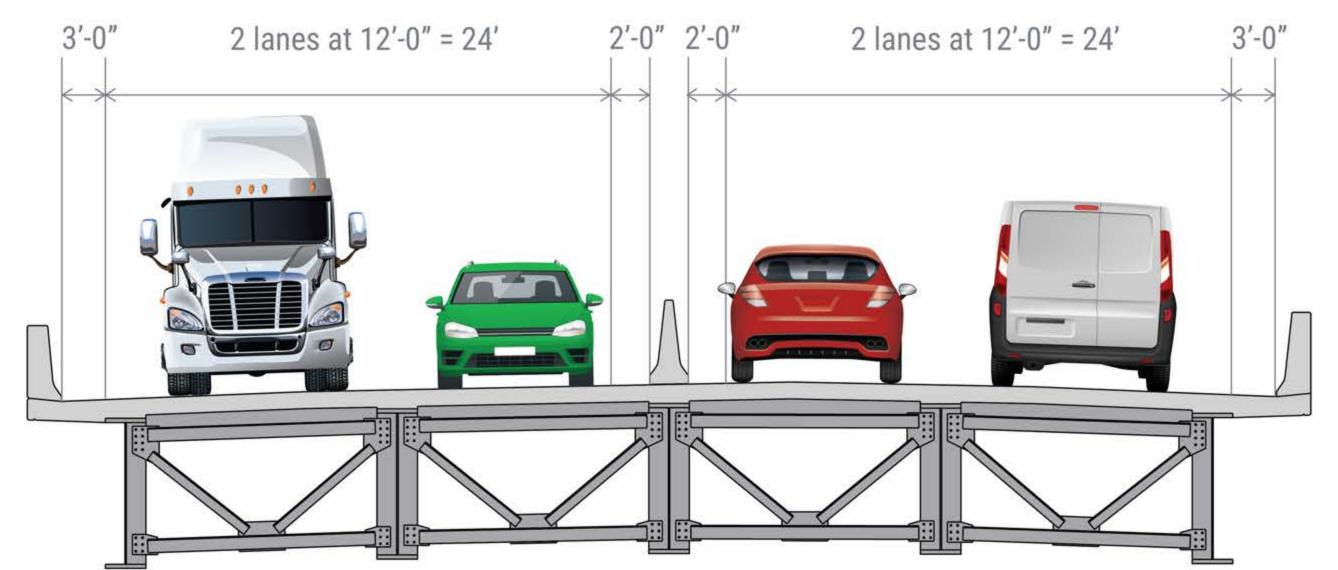
#### **Alternative NSA Overview:**

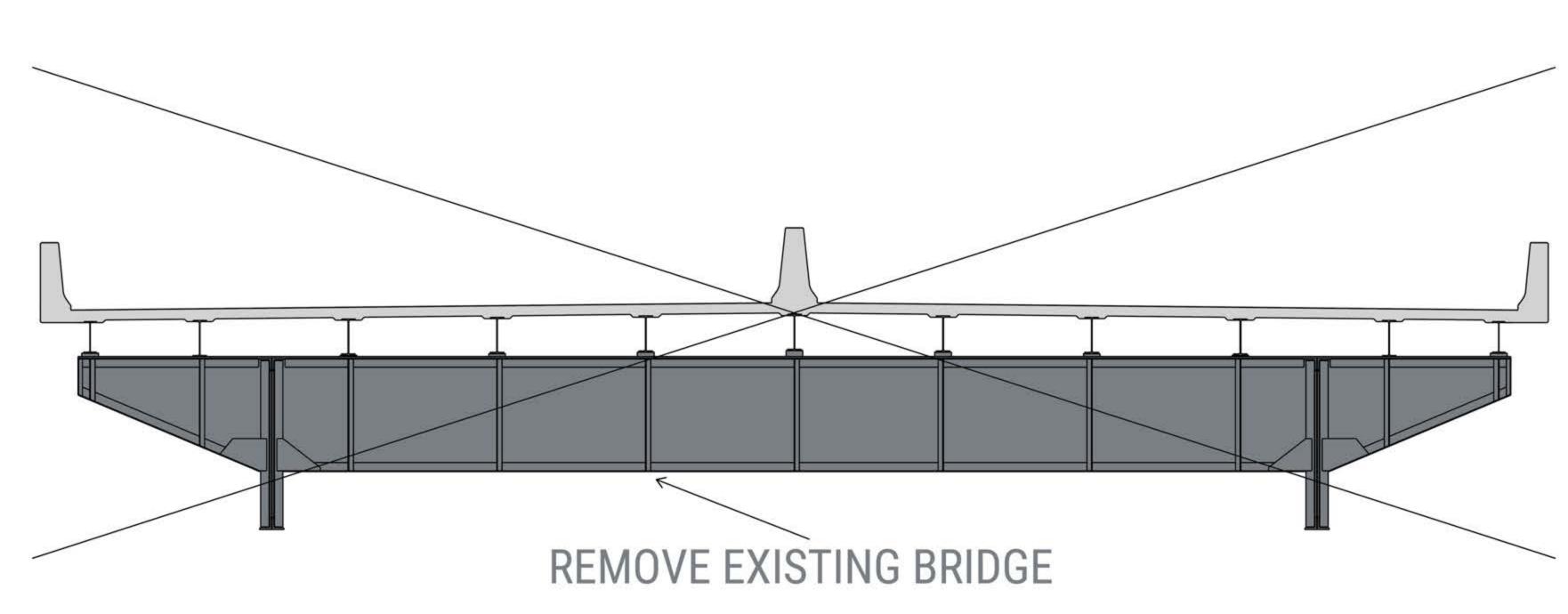
- The new bridge is built in stages
- Traffic (four (4) lanes) is maintained on the existing bridge while the first half of the new bridge is built
- Traffic (four (4) lanes) is switched to the first half of the new bridge while the existing bridge is removed
- The second half of the new bridge is built while four (4) lanes of traffic is maintained on first half of the new bridge
- Construction for the alternative is anticipated to take eight (8) construction seasons
- Traffic impacts and possible detours of local roads are anticipated for eight (8) years
- Six (6) lanes will be open to traffic within eight (8) years

Stage 1 CONSTRUCT NEW WESTBOUND (WB) PORTION, ABOUT 40' NORTH OF EXISTING BRIDGE. FOUR (4) LANES OF TRAFFIC TO BE MAINTAINED ON EXISTING BRIDGE.



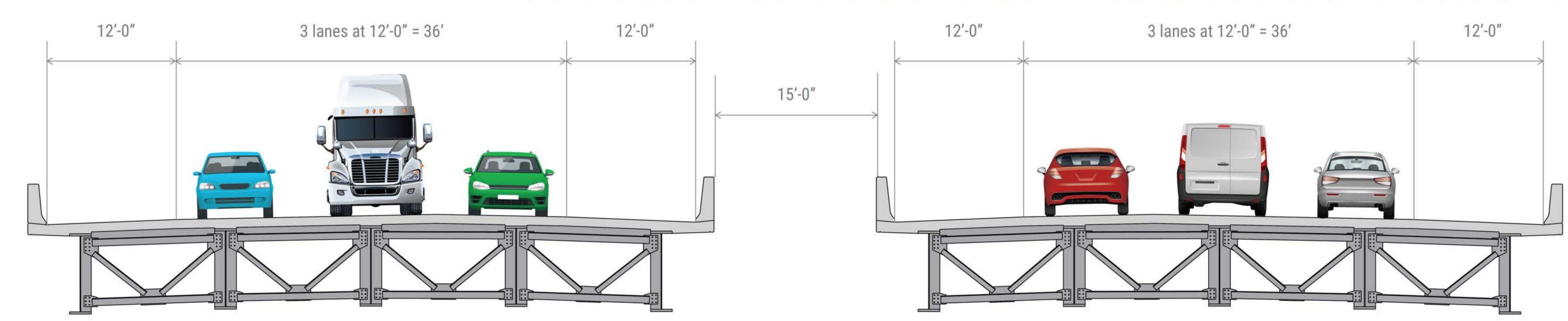
Stage 2 MOVE ALL TRAFFIC (FOUR (4) LANES) ON NEWLY CONSTRUCTED BRIDGE. CONSTRUCTION IN THIS STAGE INCLUDES REMOVAL OF EXISTING BRIDGE AND CONSTRUCTION OF NEW EASTBOUND (EB) PORTION.





Final Configuration

EB TRAFFIC IS SWITCHED OVER TO NEW PORTION BUILT 15' SOUTH OF THE WB PORTION AND ALL SIX (6) LANES OF TRAFFIC ARE OPEN TO TRAFFIC AND FULLY OPERATIONAL. CONSTRUCTION COMPLETE.



lote: These displays are intended for the October 2025
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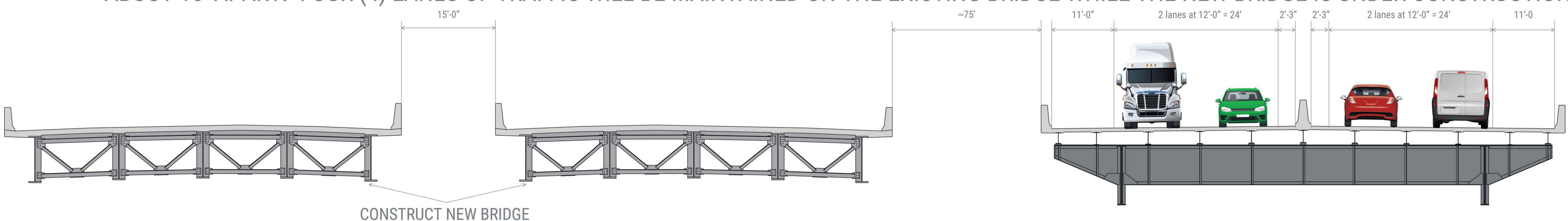
## Alternative NPI Staging - Typical Sections



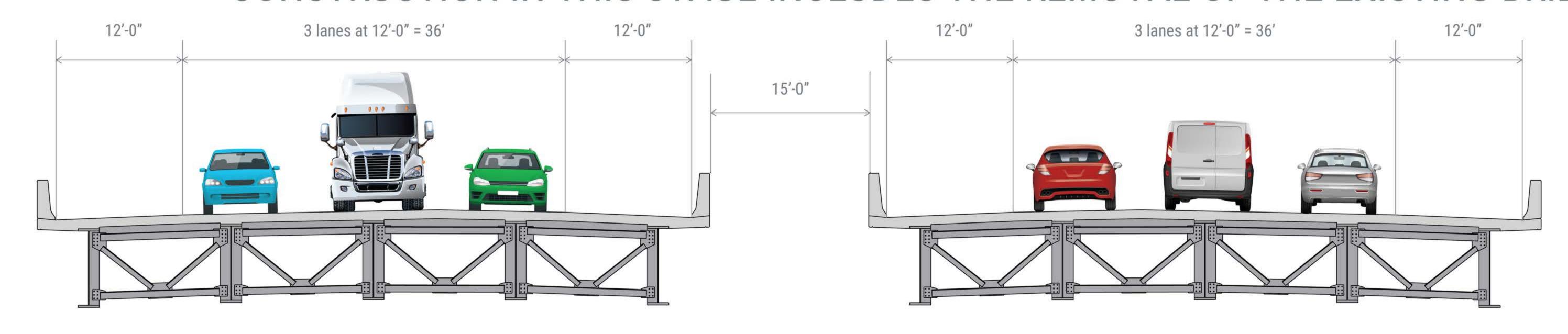
#### **Alternative NPI Overview:**

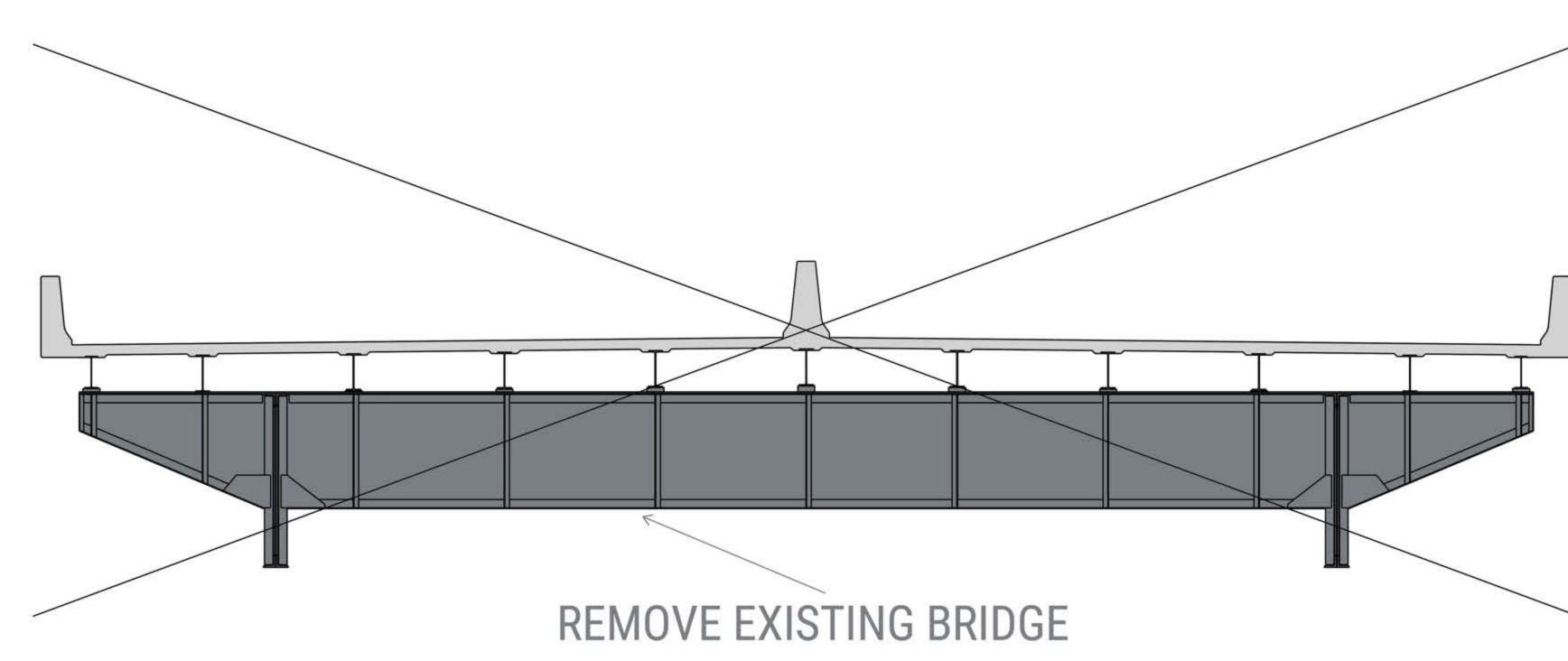
- Traffic (four (4) lanes) is maintained on the existing bridge while the new bridge is built
- Construction for the alternative is anticipated to take four (4) construction seasons
- Traffic impacts and possible detours of local roads are anticipated for four (4) years
- Six (6) lanes will be open to traffic within four (4) years
- Removal of the existing bridge will occur after traffic (six lanes) are on the new bridge

**Stage 1** CONSTRUCT BOTH WESTBOUND (WB) AND EASTBOUND (EB) PORTIONS ABOUT 75' NORTH OF THE EXISTING BRIDGE. THE NEW PORTIONS WILL BE BUILT ABOUT 15' APART. FOUR (4) LANES OF TRAFFIC WILL BE MAINTAINED ON THE EXISTING BRIDGE WHILE THE NEW BRIDGE IS UNDER CONSTRUCTION.



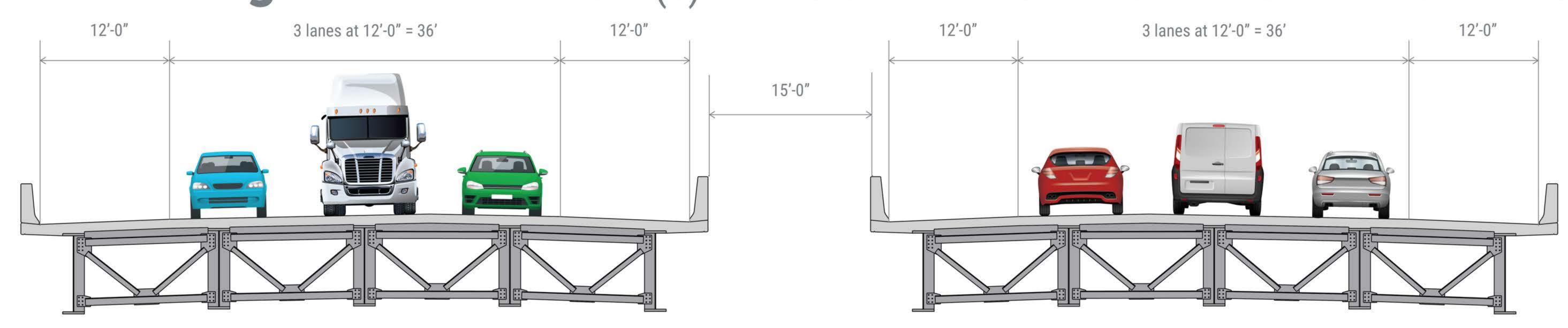
Stage 2 MOVE ALL TRAFFIC TO THE NEWLY CONSTRUCTED BRIDGE, THREE (3) LANES TO THE WB PORTION AND THREE (3) LANES TO THE EB PORTION. CONSTRUCTION IN THIS STAGE INCLUDES THE REMOVAL OF THE EXISTING BRIDGE.





Final Configuration

ALL SIX (6) LANES OF TRAFFIC ARE OPEN TO TRAFFIC AND FULLY OPERATIONAL. CONSTRUCTION COMPLETE.



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