FRENCH & PARRELLO ASSOCIATES

Public Information Center
Local Concept Development Phase

Burlington County Bridge D4.56

Church Road (CR 616) over the Southwest Branch of Rancocas Creek

Township of Medford,
Burlington County, NJ



Presented by:

Christine McLaughlin, PE
Deputy Project Manager

October 22nd, 2026

Welcome & Introductions

John Coscia, Jr
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County Engineer

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Project Manager

Steven Tardy, PE
Project Manager

Christine McLaughlin, PE
Deputy Project Manager

Ronan Swanson, EIT
Project Engineer

Meeting purpose: Introduce LCD Study & gather local insight early in the process.

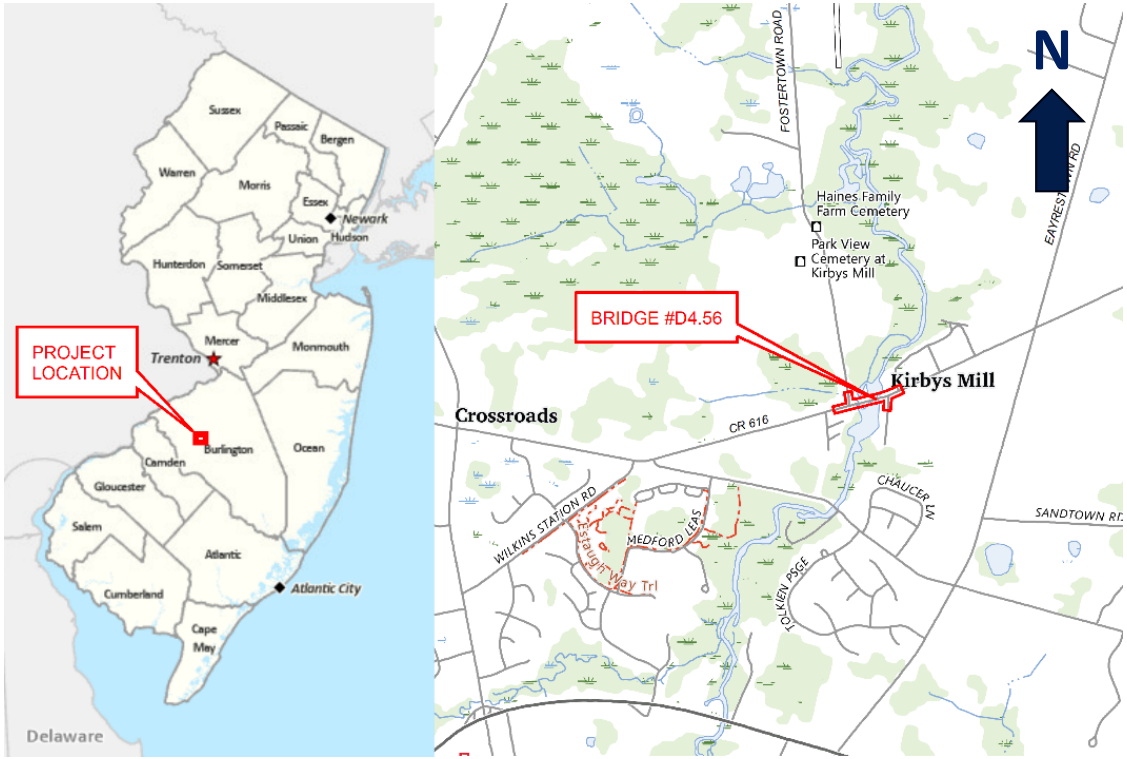
Meeting Agenda

- Project Location
- Project Overview
- Purpose & Need
- Constraints & Key Considerations
- Alternatives Under Development
- Traffic and Utilities
- LCD Process
- Public Involvement Approach
- Next Steps & Discussion

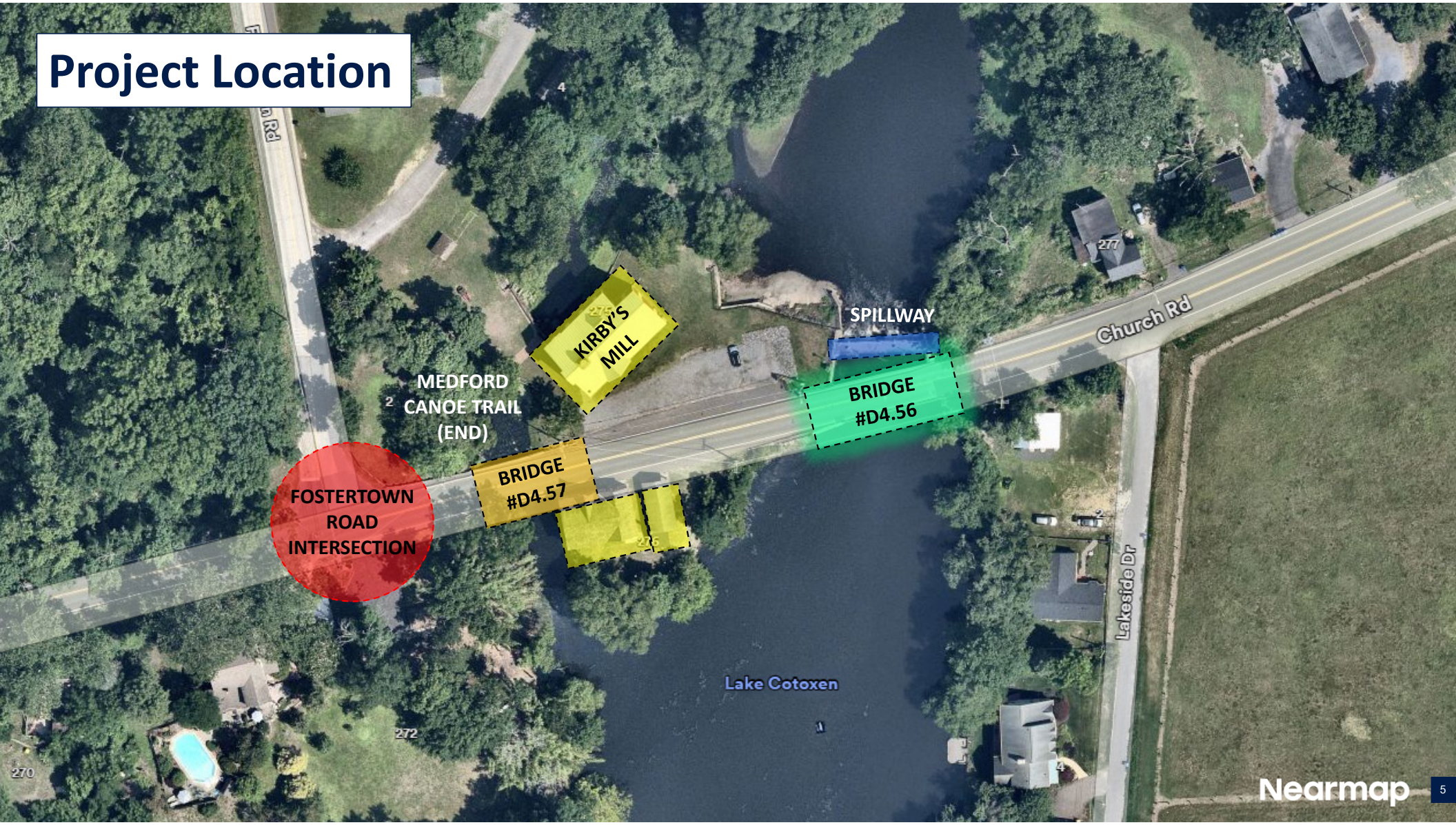


Project Location & Study Area

- Located on Church Road (CR 616) over Southwest Branch of Rancocas Creek within Kirby's Mill Historic District in Medford Township
- Study Limits:
  - Approx. 400 ft east and 600 ft west of Bridge D4.56
- Proximity to:
  - Kirby's Mill
  - Kirby's Mill Dam & Spillway
  - Medford Canoe Trail boat access
  - County Bridge D4.57
  - Fostertown Road intersection (within ~300 ft)



Project Location



Project Overview

Project Background

- Existing Roadway (Church Road)(CR 616) is 28 feet wide at the approaches and the bridge section is 22.3 feet wide, with two 11-foot travel lanes, and varying shoulders at the approaches.
- Church Road is 45 mph, classified as an Urban Major Collector. The bridge carries an average of 5114 vehicles per day (ADT, 2023).
- There are no existing pedestrian or bicycle facilities within the study area.
- LCD Study initiated by Burlington County with DVRPC support
- Bridge existing features:
  - Built in 1908, the original Steel Truss Superstructure replaced 1972-73 due to vehicular accident
  - Existing single span, simply supported, concrete prestressed adjacent box beams
  - 64 feet span length, 24 feet bridge deck width
  - Foundations are unknown
- Bridge is structurally deficient, functionally obsolete, and scour critical per most recent inspection report
- Bridge abutments are adjacent to the Kirby's Mill Dam spillway adding regulatory and engineering complexity, within Kirby's Mill Historic District
- Project is currently in the Local Concept Development Phase



Purpose & Need Statement

Project Purpose

- Provide a safe, reliable, and accessible crossing over the Kirby's Mill Dam spillway channel
- Meet current engineering and safety standards
- Accommodate all users
- Compatible with surrounding historic and environmental context



Purpose & Need Statement

Project Needs

1. Bridge Deficiencies

2. Safety and Operational Limitations

3. Multi-modal Accommodations

4. Maintenance of Dam and Spillway Operations



Purpose & Need Statement

Bridge Deficiencies

- The bridge is rated in poor condition with a sufficiency rating of 46.3 per the most recent bridge inspection report
- Overall Bridge Condition: Poor
  - Deck: Poor (4)
  - Superstructure: Poor (4)
  - Substructure: Fair (5)
- Exhibits significant deterioration (including spalling, cracking, scaling, and wall separation)
- Functionally obsolete due to inadequate roadway geometry, limited by narrow deck
  - 11-foot lane width, no striped shoulders
- Classified as Scour Critical because total scour depth is below the foundation elevation, with a scour sufficiency rating of 33.8 (low). Original foundation design is unknown.



Purpose & Need Statement

Safety and Operational Limitations

- The substandard 22-foot roadway width (11-ft lanes, no shoulders)
- Outdated non-MASH-compliant bridge railings and approach guiderail
- Documented crash history (nine crashes between 2020–2025, including geometry-related incidents) create ongoing safety risks for motorists, bicyclists, and pedestrians
- Substandard drainage throughout project limits



Purpose & Need Statement

Multimodal Accommodations

- The absence of sidewalks and bicycle facilities results in a gap in local active-transportation networks and limits pedestrian and bicycle access across the bridge.
- The narrow bridge width essentially removes shoulders and creates a pinch point on the bridge.



Purpose & Need Statement

Maintenance of Dam and Spillway Operation

- Existing Bridge is appurtenant to the Kirby's Mill Dam and adjacent to the spillway system. Any rehabilitation or replacement must maintain:
  - Dam safety compliance
  - Spillway performance
- Will require NJDEP Dam Safety approvals and potentially a FEMA CLOMR if flood elevations are impacted.



Purpose & Need Statement

Goals and Objectives

- Address existing substandard design elements and bridge deficiencies to the most practical and feasible extents in accordance with NJDOT, and AASHTO LRFD and MASH standards.
- Incorporate context-appropriate multimodal accommodations.
- Minimize visual and physical impacts to contributing historic features within the Kirby's Mill Historic District.
- Maintain or improve dam and spillway performance.
- Avoid or reduce environmental and historic impacts.
- Avoid or reduce impacts to existing right-of-way.
- Support long-term durability and cost-effectiveness through selection of appropriate materials and construction methods.
- Coordinate with planned improvements at adjacent Bridge D4.57 to the west and the nearby intersection to ensure network connectivity and construction efficiency.
- Consider Accelerated Bridge Construction (ABC) techniques to reduce construction duration and minimize impacts
- Minimize impacts to traffic and driveway access during construction

Purpose & Need Statement

Constraints & Key Considerations

- Historic District:
  - Significant aesthetic and context-sensitive design requirements
- ROW constraints:
  - Limited area to the north (spillway) and south (historic buildings)
- Dam safety requirements may restrict design options
- Environmental resources:
  - Wetlands, T&E species, riparian zones
- Archaeological sensitivity near bridge
- Utility constraints and overhead clearance

Conceptual Alternatives under Consideration

- Alternative 1 – No Build – Routine Maintenance
- Alternative 2 – Rehabilitation – Superstructure Replacement
- Alternative 3 – 28-ft-wide roadway (11-ft lanes, 3-ft shoulders)
- Alternative 4 – 32-ft-wide roadway (11-ft lanes, 5-ft shoulders)
- Alternative 5 – 40-ft-wide roadway (12-ft lanes, 8-ft shoulders)
- Bridge Alternatives
  - Steel Superstructure on Integral Abutments
  - Spread Concrete Box Beams on Integral Abutments
  - Adjacent Concrete Box Beams on Integral Abutments
  - Steel Truss on Cantilever Abutments
  - Concrete I-Beams on Integral Abutments

Conceptual Alternatives under Consideration

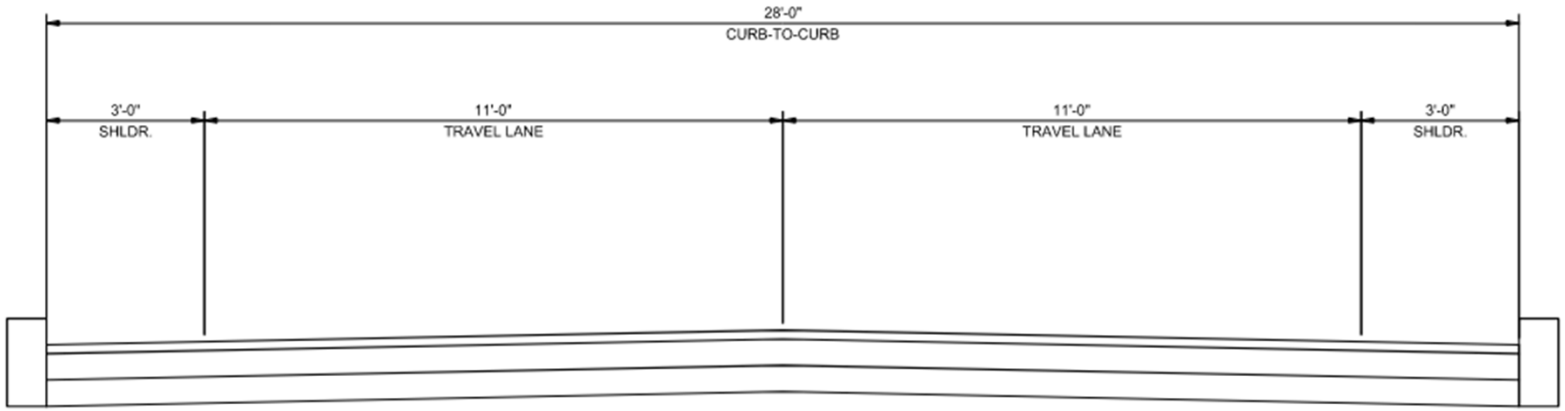
- Alternatives will be evaluated for:
  - Purpose & Need Compliance
  - Environmental Impacts:
    - Historic resource impacts
    - Environmental constraints
    - Hydraulic/dam impacts
  - Right of Way
  - Constructability / Maintenance
  - Cost
  - Community Acceptance

Conceptual Alternatives under Consideration

Roadway Alternatives

Alternative 3: **Bridge Replacement - 28-ft Roadway**

- The roadway will be widened to 28-ft within the limits of the project
- 11-ft lane and 3-ft shoulder in each direction
- Advantages: Improvements to drainage, curb, and guiderail
- Disadvantages: Not bicycle compatible shoulders

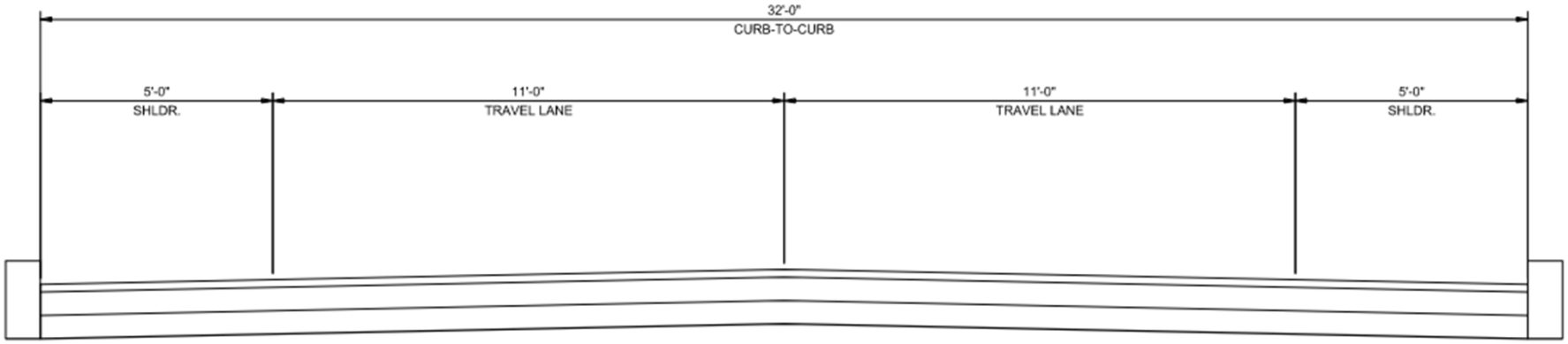


Conceptual Alternatives under Consideration

Roadway Alternatives

Alternative 4: **Bridge Replacement - 32-ft Roadway**

- The roadway will be widened to 32-ft within the limits of the project
- 11-ft lane and 5-ft shoulder in each direction
- Advantages: Improvements to drainage, curb, and guiderail; Bicycle-compatible shoulders
- Disadvantages: Wider than approaches

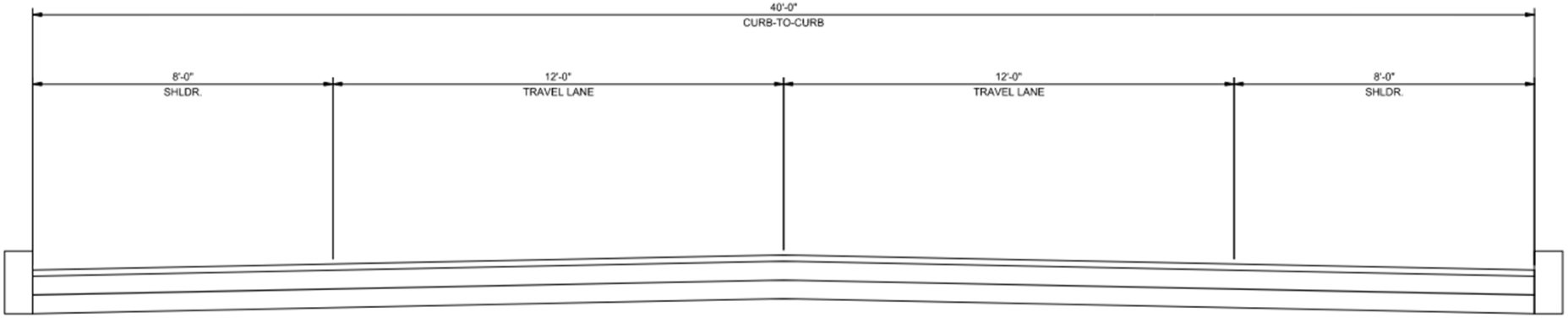


Conceptual Alternatives under Consideration

Roadway Alternatives

Alternative 5: **Bridge Replacement - 40-ft Roadway**

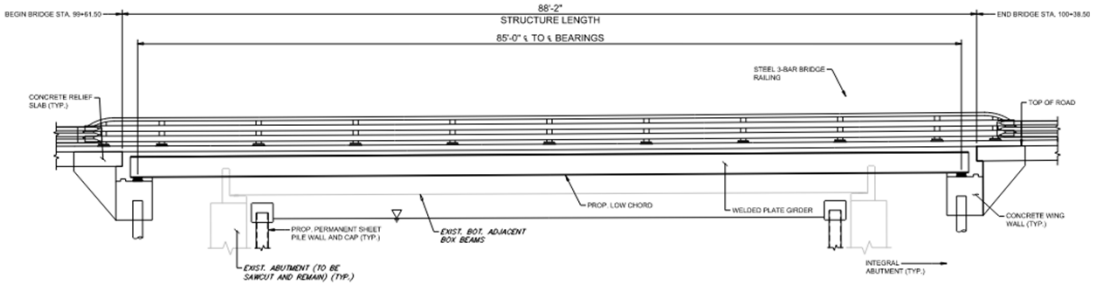
- The roadway will be widened to 40-ft within the limits of the project
- 12-ft lane and 8-ft shoulder in each direction
- Advantages: Improvements to drainage, curb, and guiderail; Bicycle-compatible shoulders
- Disadvantages: Due to excessive ROW impacts and impacts to the spillway, this alternative is not recommended for further evaluation



Conceptual Alternatives under Consideration

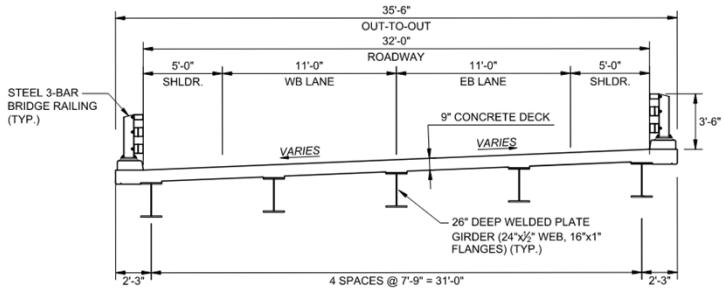
Structural Alternatives

- Steel Superstructure
  - 14 months +/- Construction duration
  - Advantages: Easy to inspect and maintain, no bridge joints (integral abutments), and a lower construction cost
  - Disadvantages: Susceptible to corrosion, greater maintenance costs (painting), debris can become lodged between beams



ELEVATION

SCALE: 1" = 5'-0"



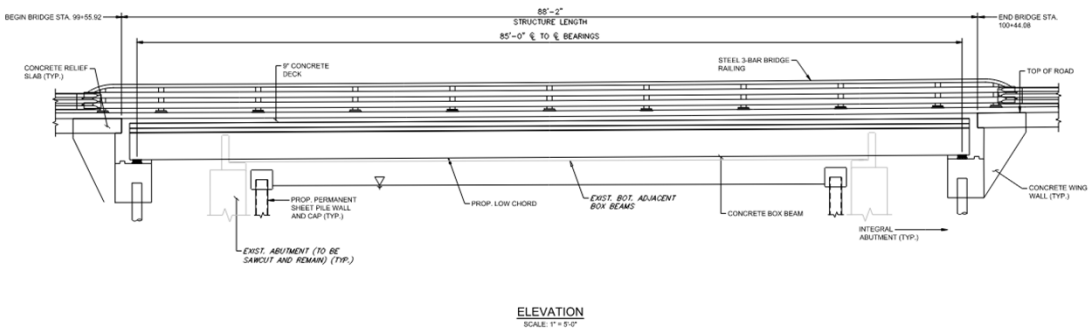
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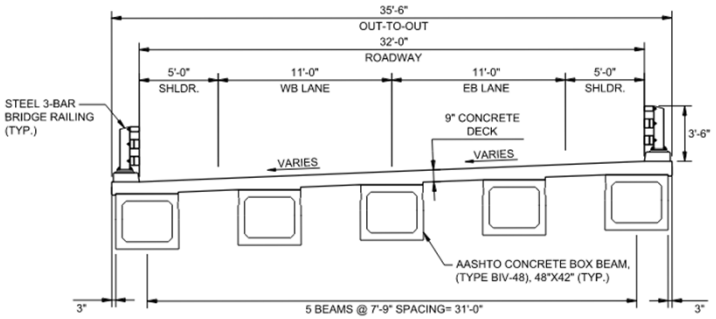
Conceptual Alternatives under Consideration

Structural Alternatives

- Spread Prestressed Concrete Box Beams
  - 12 months +/- Construction duration
  - Advantages: Low maintenance costs, corrosion resistance, no bridge joints (integral abutments)
  - Disadvantages: Difficult to inspect and maintain, debris can become lodged between beams



ELEVATION
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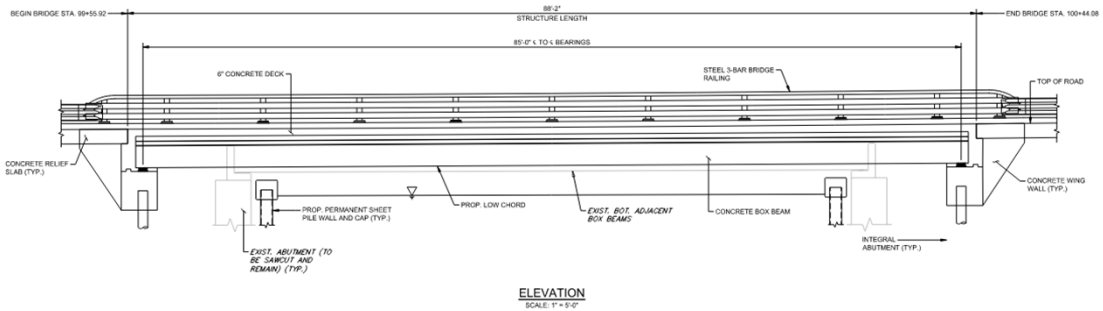


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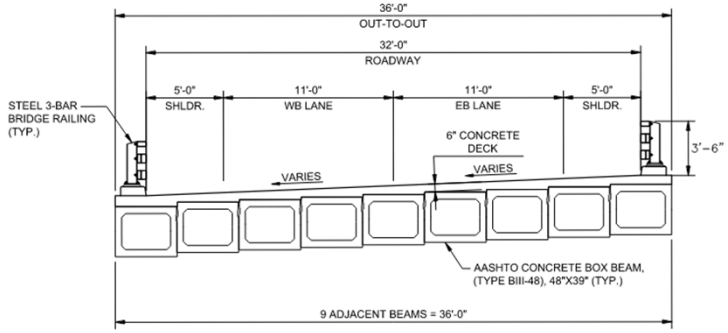
Conceptual Alternatives under Consideration

Structural Alternatives

- Adjacent Prestressed Concrete Box Beams
  - 12 months +/- Construction duration
  - Advantages: Low maintenance costs, corrosion resistance, no bridge joints (integral abutments), debris can't become lodged
  - Disadvantages: Difficult to inspect and maintain, reflective cracking can occur at the longitudinal joints between beams, more beams



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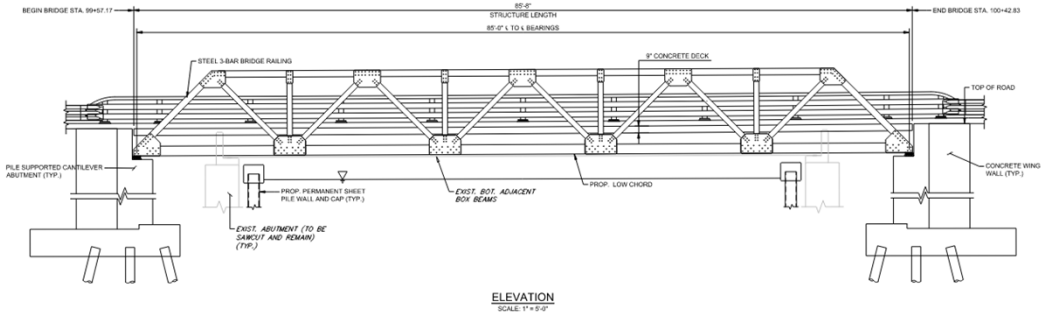


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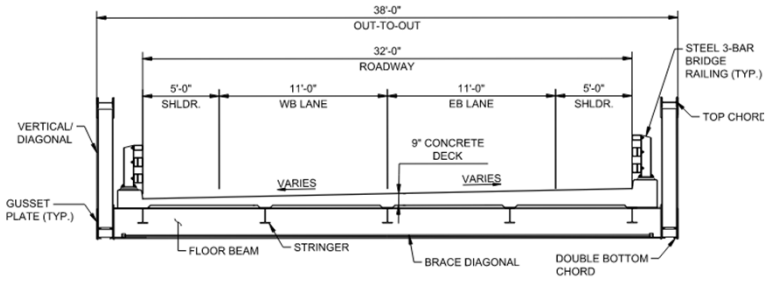
Conceptual Alternatives under Consideration

Structural Alternatives

- Steel Truss
  - 10 months +/- Construction duration
  - Advantages: Visually appealing, historical significance, can be prefabricated (accelerated construction),
  - Disadvantages: Susceptible to corrosion, higher maintenance costs (painting), difficult to widen/modify, fracture critical, abutments cannot be integral



ELEVATION
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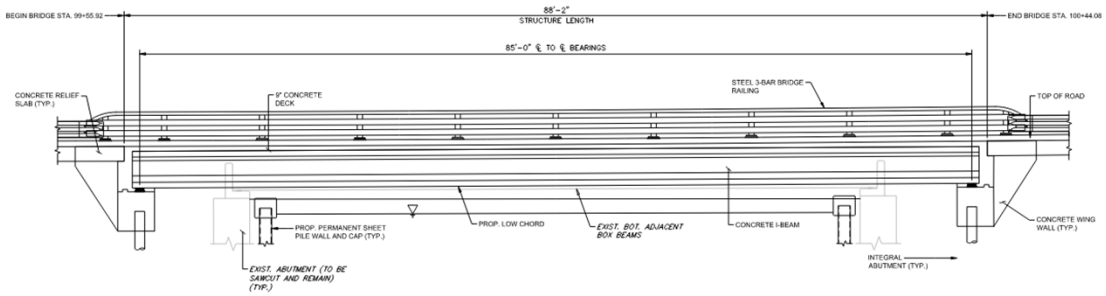


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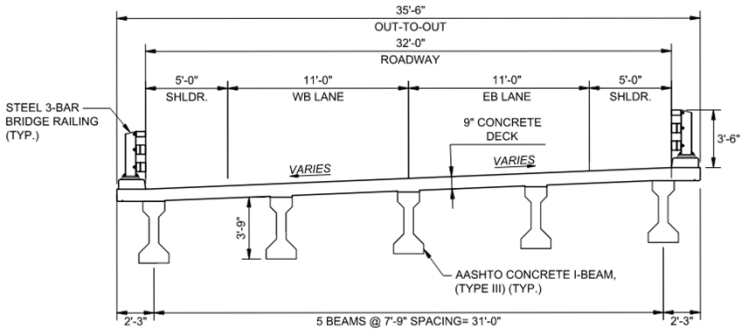
Conceptual Alternatives under Consideration

Structural Alternatives

- Prestressed Concrete I-Beams
  - 12 months +/- Construction duration
  - Advantages: Easy to inspect and maintain, reduced maintenance costs, corrosion resistance
  - Disadvantages: Debris can become lodged between beams, deeper beams required which restricts bridge opening



ELEVATION
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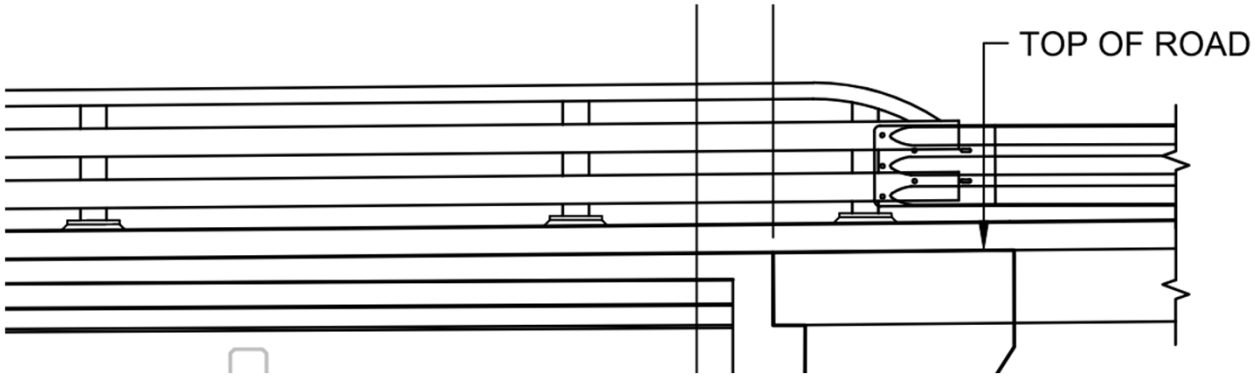


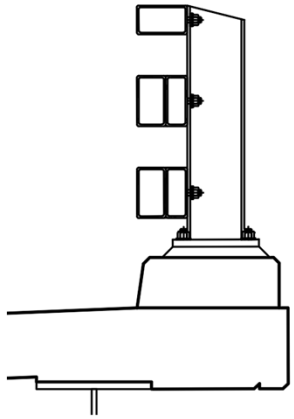
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Conceptual Alternatives under Consideration

Structural Alternatives

- Design Elements incorporated into Alternatives 2 to 5
  - Integral Abutments – applies to all except Steel Truss Alternative
  - MASH crash tested Steel 3-Bar Bridge Railing
  - Steel Sheeting scour protection for existing abutments and roadway embankments





Conceptual Alternatives under Consideration

Additional Considerations

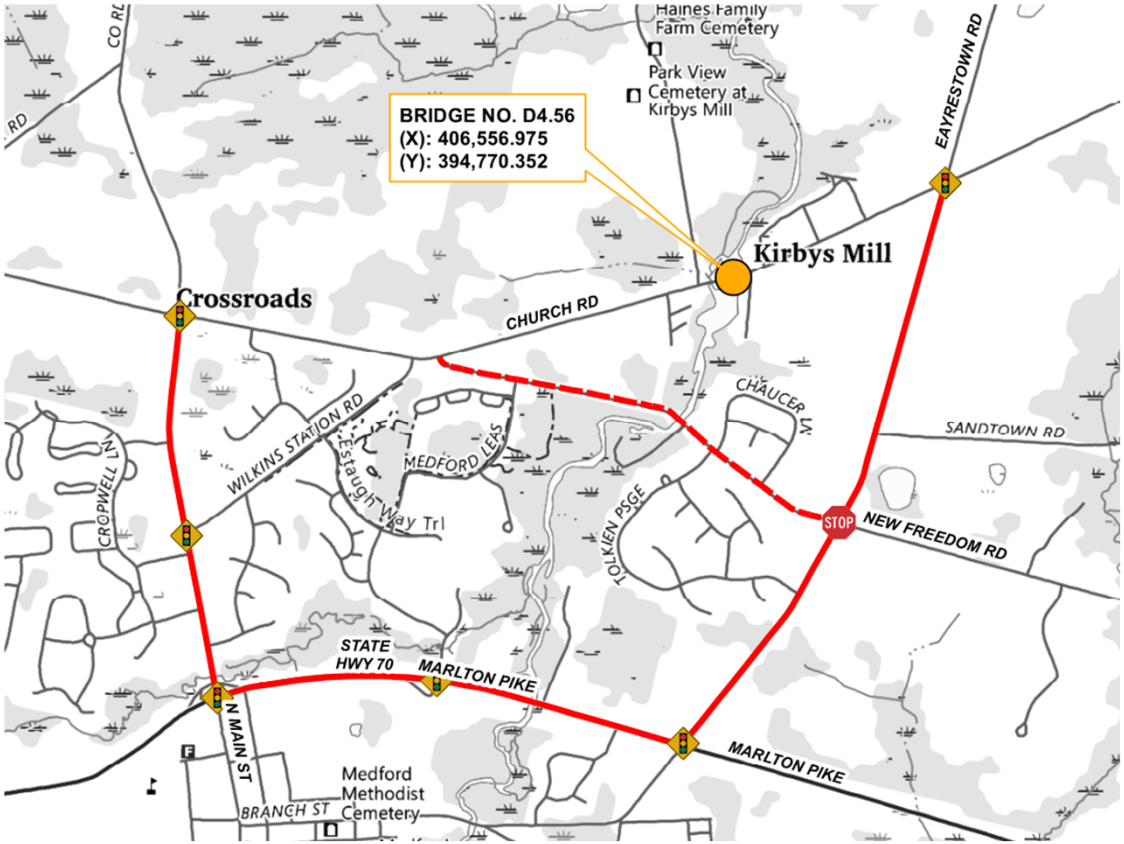
- Pedestrian Bridge
  - Located on upstream side (lakeside) (adjacent to vehicular bridge)
  - Accommodates pedestrian access across the bridge
  - Available for all alternatives





Maintenance & Protection of Traffic (MPT)

- Due to narrow roadway geometry and dam constraints, full closure with detour is anticipated.
- Shorter duration and lower costs for full closure



Utility Impacts

- Anticipated relocation/protection of overhead utilities along Church Road (CR 616)
- No impacts to the underground sewer or water are anticipated
- Coordination with JCP&L, Verizon, and underground utilities as required



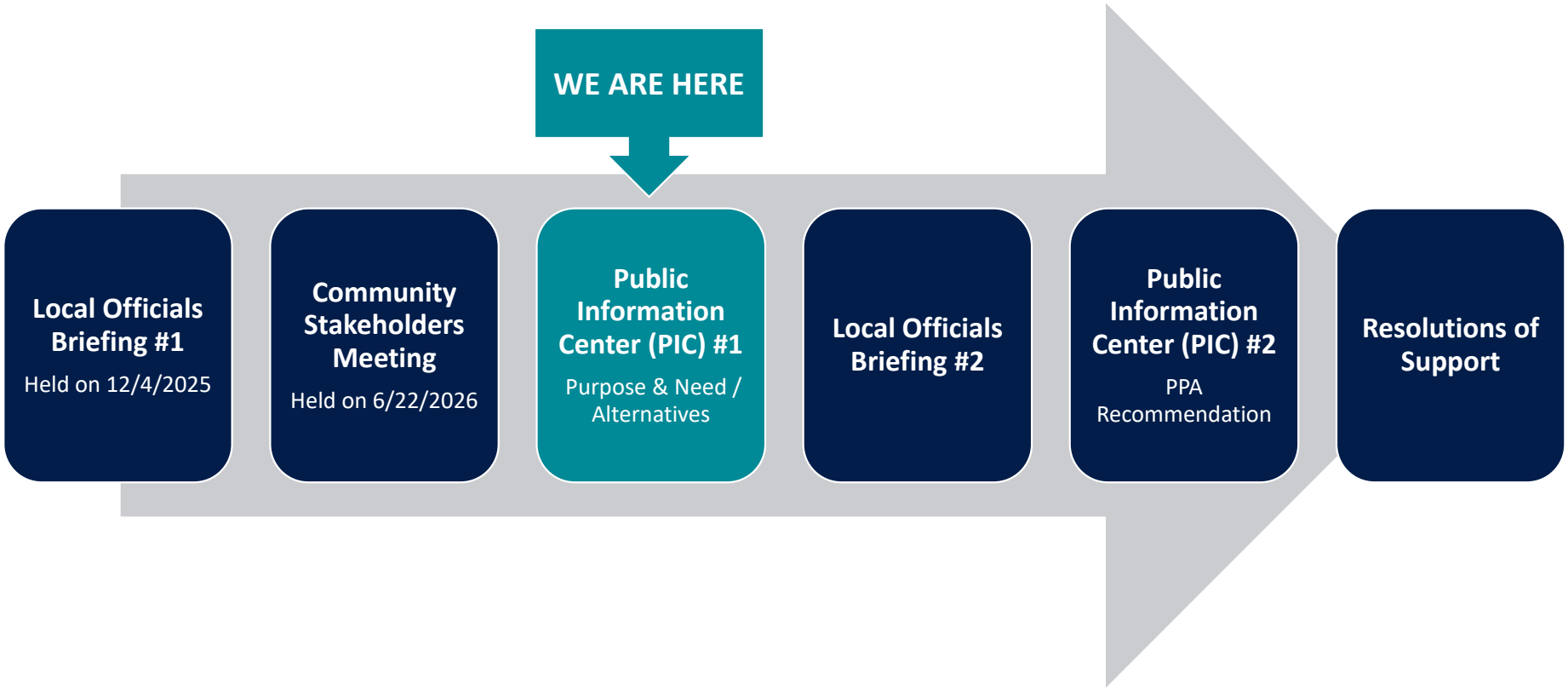


NJDOT Local Capital Project Delivery (LCPD) Process

Local Concept Development *(Current Phase – March 2025 – Spring 2027)*	**Local Preliminary Engineering** *(2027-2029)*	**Final Design/Right of Way Acquisition** *(2030-2032)*	**Construction** *(2033-2035)*
Data Collection	Approved Design Exception Report	Construction Contract Documents and PS&E package	Completed Construction
Purpose and Need Statement	Cost Estimates (Final Design, ROW and Construction)	Environmental Reevaluations	Continue Public Outreach
Selection of Preliminary Preferred Alternative	Approved Environmental Document	Secure Environmental Permits	As-Builts
Environmental Screening Report & NEPA Classification	Preliminary Design	Acquisition on ROW	Update and Finalize Design Communications Report
Concept Development Report (CDR)	Preliminary Engineering Report	Continue Public Outreach & Involvement	Close-out Documentation
Initiate Public Outreach & Involvement	Continue Public Outreach & Involvement		

Public Involvement Strategy

Overview of Public Involvement Action Plan (PIAP):

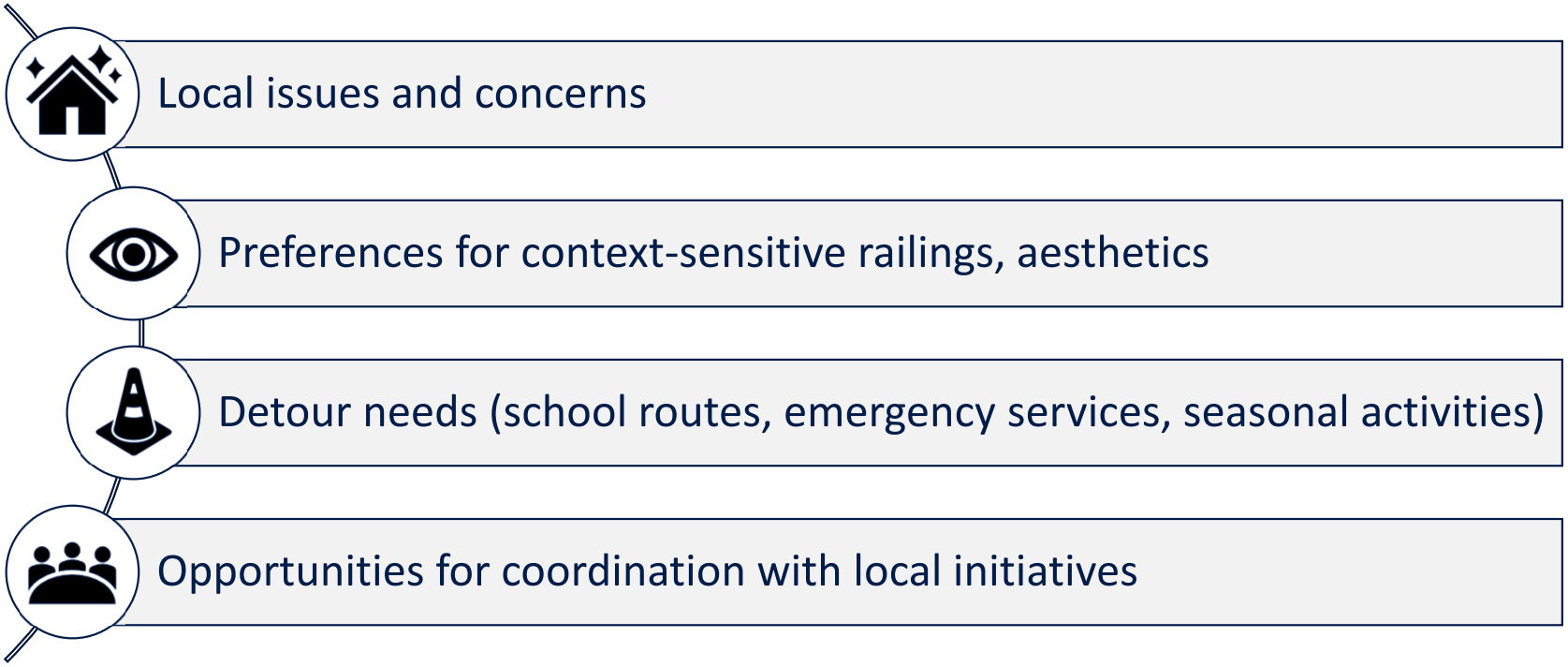


Next Steps

- Hold NJDOT Subject Matter Expert (SME) Meeting to review alternatives
- Prepare Constructability Risk Analysis Review to review alternatives and construction staging
- Select Preliminary Preferred Alternative (PPA)
- Hold Local Officials Meeting #2 to review alternatives and PPA
- Hold Public Information Center #2 to review alternatives and PPA
- Obtain Resolutions of Support
- Complete Concept Development Report



Discussion / Community Input Requested



Thank you!

Questions and Comments

Please forward additional questions or comments to:

Ronan.Swanson@FPAEngineers.com

