

NJTPA - Local Concept Development Study Monmouth County Bridge S-32 on Rumson Road (CR-520) over the Shrewsbury River



Public Information Center

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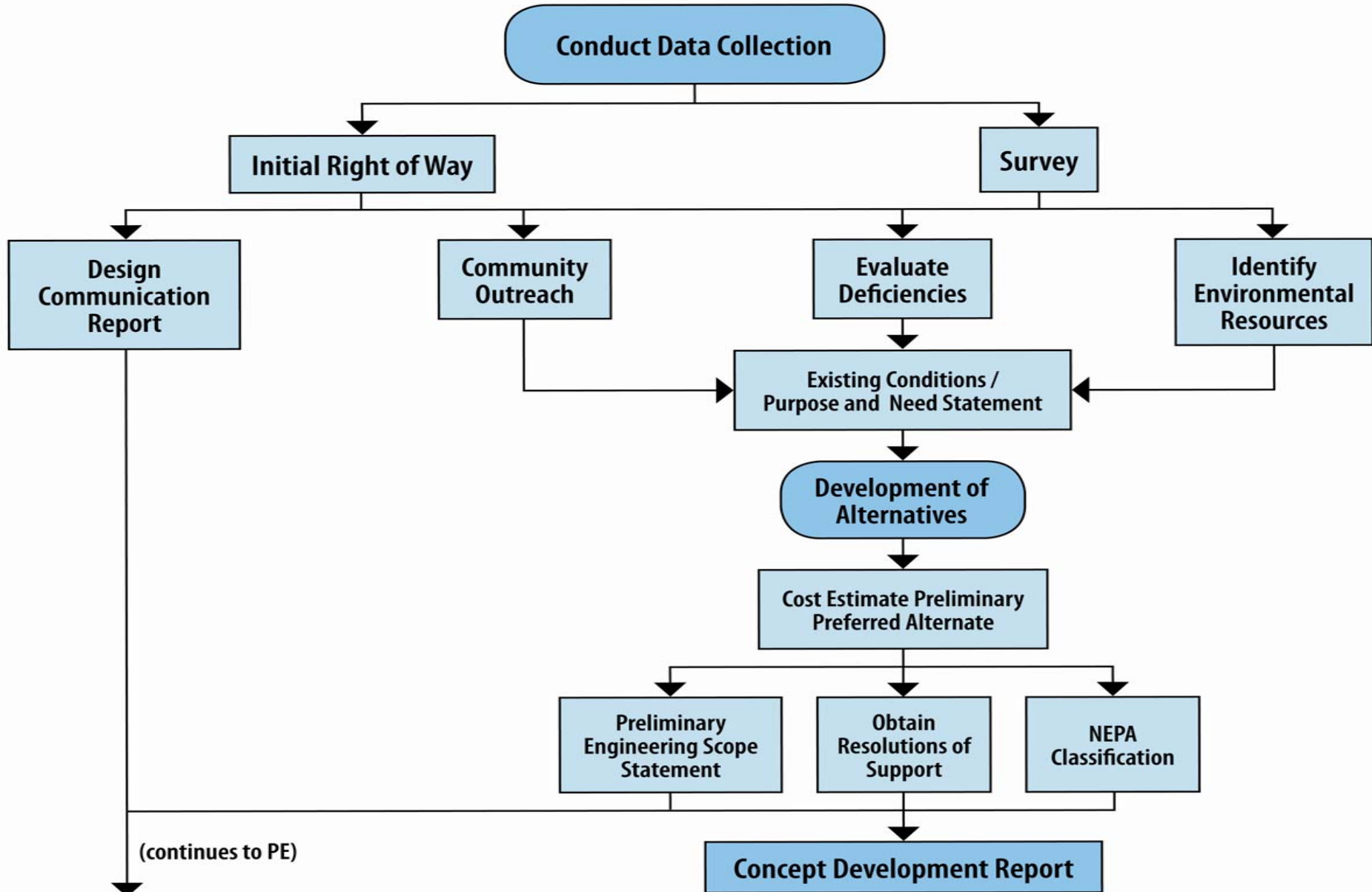
Project Overview and Background

- Rumson-Sea Bright Bridge S-32 was built in 1950.
- Routine maintenance can no longer address deficiencies.
- Bridge is in need of major rehabilitation or replacement.
- NJTPA/Monmouth County Local Concept Development (LCD) Study initiated October 2011.
- New program provides opportunity to advance this project with public input and agency collaboration.

Local Project Delivery Process

Local Concept Development	Local Preliminary Engineering	Final Design/ Right of Way Acquisition	Construction
Purpose and Need Statement	Approved Design Exception Report	Construction Contract Documents and PS&E package	Completed Construction
Date Collection and Environmental Screening Report	Cost Estimates (Final Design, ROW and Construction)	Environmental Reevaluations	As-Built
Selection of Preliminary Preferred Alternative	Approved Environmental Document	Environmental Permits	Update and Finalize Design Communications Report
NEPA Classification	Approved Project Plan	Acquisition on ROW	Close-out Documentation
Concept Development Report	Preliminary Engineering Report	Update Design Communications Report	
Create Design Communications Report	Update Design Communications Report		

Local Concept Development Process



Environmental Process

- Federally funded project requires NEPA (National Environmental Protection Act) documentation
- Identify environmental resources and concerns
- Avoid, minimize and or mitigate impacts with Preferred Alternative
- Coordination with permitting agencies
- Process includes public input and community development

Existing Bridge Condition

2009 Bridge Inspection Report – Cycle 12

- Sufficiency Rating = 25.0
- Overall condition (Item 67) = Serious (3) due to low inventory ratings and condition of superstructure
- Superstructure = Poor (4) – **Structurally Deficient**, moderate to severe corrosion of girders, floorbeams, and stringers, section losses and section loss to rivet heads
- Deck = Satisfactory – 6 (2009) & Fair – 5 (2011) – areas of spalling throughout approach spans
- Substructure = Fair (5), wide cracks in abutments, erosion to embankments, **supported on timber pilings, lengths undeterminable**
- Waterway = Satisfactory (6) – minor scouring with substructure units having vertical faces of footing exposed up to 5 feet deep
- **Structure has been classified as Scour Critical (based on NJDOT data base, Prelim. Stage I and In-depth Stage II (Phase 3) Scour Evaluation performed and undeterminable length of pilings**

Bridge Condition



Bridge Condition



Underside of Deck, Span 4, Bay S2, West End, Looking Southeast. - Large Spall and Incipient Spalls With Rusted Corroded Rebars. Insert: Large Incipient Spall in Bay 2, East End.



Underside of Deck, Span 4, Under North Sidewalk, Looking Southwest. - **Priority I Repair:** Large Incipient Spall.

Bridge Condition



Bridge Condition



Bridge Condition



Span 10, End Floorbeam Over East Abutment, Looking Southeast.- **Priority I Repair:** Up to 90% Material Loss to Bottom Flange, West Leg, For Entire Length of the Beam. Overall Section Loss is Approximately 50%.

Bridge Condition



Bridge Condition



Bridge Condition



Eastern flanking span (Span 7) superstructure, heavy corrosion and rusting of floor beams, section loss of one floor beam

Project Status

- Work began November 2011
- Data collection completed: included field survey; environmental screening; utilities verification; obtaining bridge inspection reports; traffic data; crash data; identifying existing substandard design elements; and obtaining Local Public Officials input (1/24 & 1/30/12), Stakeholders input (2/15/12) and Public Involvement input (2/27/12)
- Developed Project Purpose and Need Statement
- Developed Alternative Concepts; presented to Project Stakeholders (6/26/12)
- Evaluated Alternatives & Impacts (ROW, Environmental, Traffic, costs, etc)
- Selection of Preliminary Preferred Alternative (PPA)

Project Purpose & Need Statement

- **Purpose:** Improve the structurally deficient characteristics of the structure carrying Rumson Road over the Shrewsbury River.
- **Need:** The bridge carries a critical transportation connection between the Boroughs of Sea Bright and Rumson as well as a flood evacuation route for the community of Sea Bright. The existing bridge is rated in serious condition due to low inventory ratings. The bridge is structurally deficient due to the condition of the superstructure. The existing structure is scour critical; does not meet current seismic design standards; and is fracture critical due to the non-redundant two-girder system.

Project Goals & Objectives

- Improve Level of Service at the intersection of Rumson Road and Ocean Avenue (Route 36)
- Upgrade bridge and approach roadway conditions to meet current safety standards
- Reduce the frequency of major bridge maintenance activities that disrupt traffic flow
- Provide ADA compliant pedestrian facilities and crossings as well as connectivity to the approach roadways
- Provide bicycle compatibility and connectivity to approach roadways
- Avoid or minimize social, economic and environmental impacts

Project Goals & Objectives (continued)

- Correct the controlling substandard design elements
- Maintain traffic operations and volume with minimum disruption and delay during construction
- Reduce conflicts with marine and vehicular traffic demands in summer months that result in back-ups on the approaches
- Provide for the restoration of bridge scour countermeasures
- Provide for earthquake resistance of the bridge and modernize bridge mechanical & electrical components to meet current standards

Development of Alternatives

- 12 concepts developed including No Build & Major Rehabilitation
- Concepts include: building a new movable bridge at the same profile on the same alignment, or on a new alignment to the north; or a new alignment to the south; or utilizing the 1920's former bridge alignment (to the south)
- Different variations of these alignments were conceptually developed to tie into the west and east approaches (e.g. cul-de-sac, roundabout at the west; and adding the required 10' wide outside shoulders on Route 36 at the east)
- Concepts were presented to the Project Stakeholders on June 26 for comments and input (copies were given to both municipalities subsequent to the meeting)

Summary of Stakeholders Meeting (6/26/12)

- General Agreement that No Build & Major Rehabilitation do not meet the Project Purpose & Need
- Borough Administrators and community stakeholders (residents and business owners) do not support the detour alternative (Concept 1A); even though it has the least ROW & environmental impacts and is the least costly to build
- General support for proposed new bridge section of 67'-6" (two 12' EB lanes, one 12' WB lane, with 8' wide outside shoulders and 6' wide sidewalks on both sides)
- General support for proposed 35'-6" temporary bridge section (one 11' lane in each direction, and a 3' wide outside shoulder and a 6' sidewalk on one side); needed for Concepts 1B, 1C and staged construction (Concepts 3A & 3B)
- No support for the high level fixed span alternative (Concept 5) or the roundabout for the west approach improvements (Concept 3C)

Summary of Stakeholders Meeting (continued)

- Minimal support for using the 1920's alignment for either a (low level) temporary bridge (Concept 1C) or the permanent (mid-level) new bridge
- Minimal support for the addition of 10' wide outside shoulders on Route 36 (Concepts 3B & 3C) due to significant ROW impacts
- General consensus for a cul-de-sac at Ward Avenue and addition of sidewalks from the bridge to Ward Avenue intersection
- General consensus for addition of sidewalks and bicycle compatibility on Route 36; north and south of the Rumson Road intersection

ALTERNATIVES ANALYSIS MATRIX RESULTS

- No Build & Major Rehabilitation do not meet Project Purpose & Need
- Concept 5 (High-Level Fixed Span) does not meet project goals & objectives (highest ROW & Environmental Impact, & Cost)
- Concept 1 (Detour) not acceptable to community due to economic impacts during summer months, length & duration (3+ yrs) of detour, loss of NJ Transit route and emergency evacuation route
- Concepts 3B & 3C dismissed due to high ROW cost associated with adding 10' shoulders on Route 36 and roundabout at Ward Avenue
- Concepts 1C & 4 dismissed due to high ROW costs

Alternatives Analysis Matrix Results (continued)

- Concept 2 dismissed due to high relative ROW costs to alternatives 1B, 3A, 3D; and number of residential relocations (Anchorage Apartments)
- Concepts 1B, 3A, & 3D most viable remaining alternatives and all were generally supported by Community Stakeholders at 6/26/12 Meeting
- Some concern raised by Stakeholders with reliability of temporary movable bridge operation

Additional Alternatives

- Based on Stakeholder's Meeting comments, evaluation of alternatives, and review of the Alternatives Analysis Matrix; it was concluded that no one single alternative developed to date had all three elements generally supported by the Stakeholders and the Project Team
- One element is the proposed new bridge alignment; either on an alignment approximately 50' south of the existing bridge (Concept 3A – staged construction) or approximately 80' south of the existing bridge (Concept 3D)
- The second element is the cul-de-sac as part of the proposed improvements to the west approach (included in Concepts 2 and 3B) along with pedestrian improvements
- The third element is the proposed pedestrian and bicycle compatibility improvements at the east approach (included in Concepts 1B, 3A, & 3D)

Additional Alternatives (continued)

- Two new additional alternatives were developed using elements of previously developed concepts: 3E & 3F
- Concept 3E is the staged construction alternative for the bridge alignment (using alignment from Concept 3A)
- Concept 3F is a new bridge on a new alignment south of the existing bridge (same alignment as Concept 3D)
- Both concepts incorporate the proposed cul-de-sac and pedestrian improvements at the west approach and proposed pedestrian and bicycle compatibility improvements at the east approach (along Route 36)

Concept 3E vs. 3F Comparison

- **Concept 3E**

1. More costly (+\$11M) than 3F due to staged construction and longer (1 year) duration
2. Results in minimal less ROW and Environmental impacts than Concept 3F
3. MPT would be one lane in each direction for 3 – 3 ½ years
4. Eliminates all controlling substandard design elements at west approach
5. Impacts to Dunkin Donuts/gas station at east approach

- **Concept 3F**

1. Less costly than 3E due to no staged construction and shorter duration
2. Results in minimal additional ROW and Environmental impacts than Concept 3E
3. MPT would utilize entire existing bridge for most of construction duration
4. Eliminates all controlling substandard design elements at west approach
5. Impacts to Dunkin Donuts/gas station at east approach

Project Team Recommendation

Based on the comparison of these 2 alternatives, the Project Team recommends **Concept 3F** as the Preliminary Preferred Alternative (PPA)

Local Officials Briefing – October 4, 2012

- Received concurrence from both municipalities for Concept 3F as the Preliminary Preferred Alternative
- Documentation needs to be provided for the non consideration of a 4 lane bridge
- Further analysis should be completed during preliminary design for providing operational improvements to the intersection during the summer months

NEXT STEPS

- Address comments from both communities for PPA
- Address comments from NJDOT for PPA
- Review/Finalize Preliminary Preferred Alternative
- Preliminary Preferred Alternative Selection
- Obtain Resolutions of Support for PPA
- Complete Concept Development Report
- Hold Inter-Agency (FHWA, NJTPA, NJDOT) Review Meeting for approval of PPA and Concept Development Report
- Concept Development Phase completed (April 2013)

Project Contact Information

- Jon Moren, Monmouth County Project Manager, (732) 308-2963
- Monmouth County Web Site address:
 - visitmonmouth.com
 - Click “Departments”
 - Click “Engineering”
 - Click “Bridge & Road Projects”

THANK YOU!



Questions & Comments

