

Falls Bridge Renewal Project

Public Information Session – August 29th, 2018

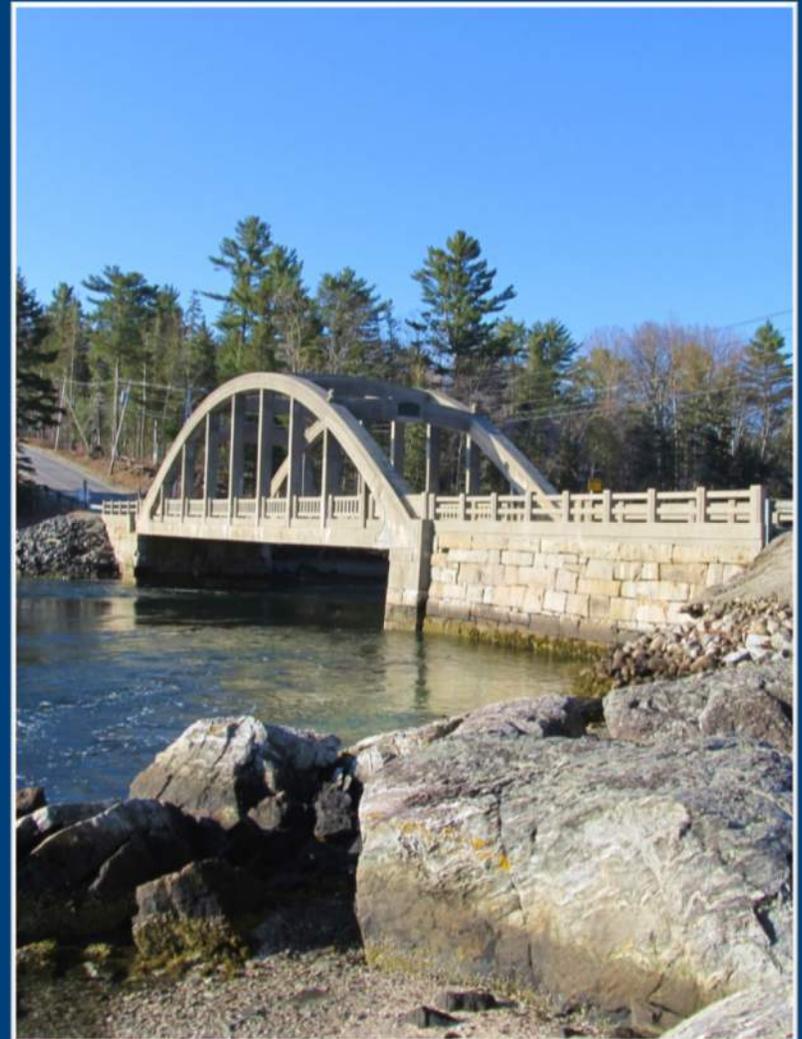


Integrity - Competence - Service



Meeting Intent

- Update public on project activity since the last public meeting
- State the goals of the Bridge Advisory Committee (BAC)
- Identify the rehabilitation, replacement, and alternate alignment options being considered
- Provide an opportunity for the public to ask questions and give comments regarding the alternatives and their potential impacts prior to selection of a preferred alternative



Project Update

What's happened since the August 8, 2017 public meeting?

- Ten meetings with the Bridge Advisory Committee
- Multiple workshop meetings between MaineDOT and design engineers
- A wide range of topics have been explored, including:
 - Project Purpose & Need
 - Environmental Constraints and Federal Process
 - Archeological and Architectural Constraints
 - Existing Bridge Conditions
 - Bridge Rehabilitation Options
 - Bridge Replacement Options
 - Constructing a Bypass Road to avoid Falls Bridge (Alternative Alignment)
 - Maintenance of Traffic

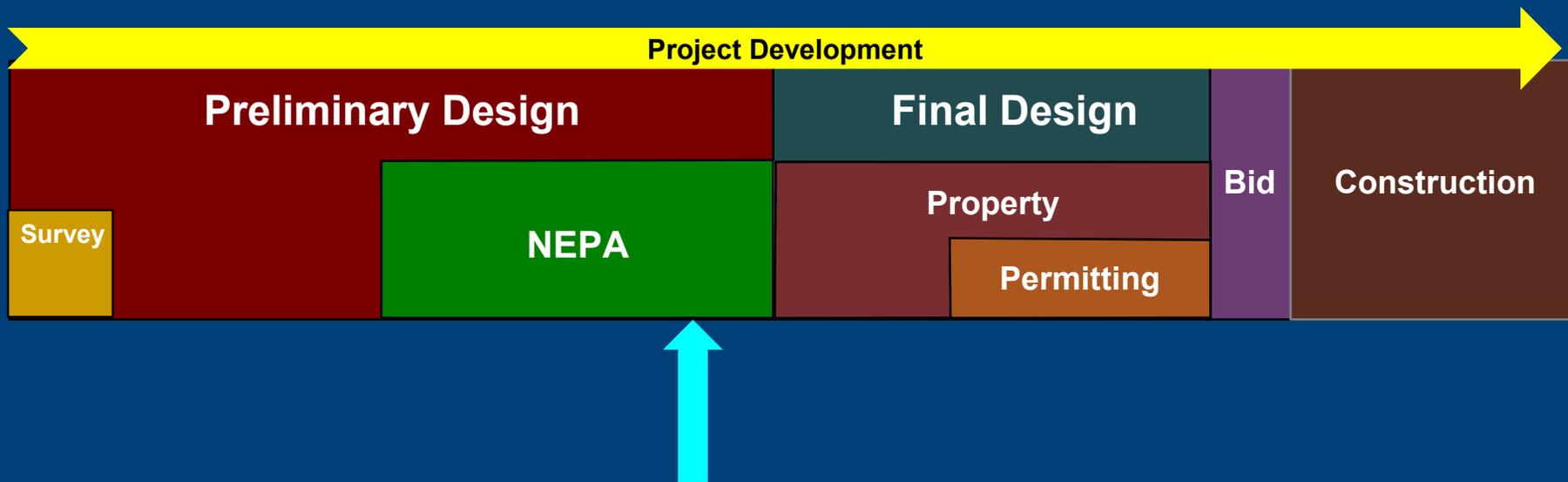
Bridge Advisory Committee

Bridge Advisory Committee Goals

- Identify project constraints
- Identify community problems & needs at the site
- Understand the National Environmental Policy Act (NEPA) decision-making process and assist in communicating this process to the community
- Challenge the design team to thoroughly vet all reasonable options
- Advise the Department in creation of an alternative design matrix
- Support the broader public outreach process
- Continue advisory process through preliminary & final design

National Environmental Policy Act

- National Environmental Policy Act (NEPA)
 - Requires developing and analyzing a reasonable range of alternatives:
 - Analyze environmental effects
 - Effects include natural, social, economic
 - Mitigate for adverse effects
 - Avoidance, Minimization, and Compensation
 - Complete Public Involvement & Interagency Coordination
 - Informed decisions that solve transportation problems
 - Document outcomes



NEPA Umbrella

- Executive Order 12898 (Environmental Justice)
- Section 4(f) of USDOT Act
- Section 106 of National Historic Preservation Act
- Farmland Protection Policy Act
- Executive Order 11990 (Protection of Wetlands)
- Executive Order 11988 (Floodplain Management)
- Coastal Zone Management Act
- Fish and Wildlife Coordination Act
- Section 7 of the Endangered Species Act
- Clean Air Act
- Section 6(f) of the Land and Water Conservation Fund Act
- Noise (23 CFR 772)
- Marine Mammal Protection Act
- Magnuson-Stevens Fishery Conservation and Management Act
- Migratory Bird Treaty Act
- Clean Water Act



Informational Handout



Index

1. Bridge Terminology
2. Existing Conditions
3. Rehabilitation Alternatives
 - Alternative Concepts
 - Construction Schedule
4. Replacement Alternatives
 - Alternative Concepts
 - Construction Schedule
5. Alternate Route
6. Temporary Bridge



Evaluation Criteria (Used Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 172 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Substructure	Concrete Tied Arch					
Completed Roadway & Sidewalk Width	Existing Staked Grade ¹	Existing Staked Grade ²	Existing Staked Grade ³			
Anticipated Service Life	20-4 ¹	20-4 ²	20-4 ³	20-4 ³	20-4 ³	20-4 ³
Tree Clearing at Falls Bridge Alignment	~50 years ¹	~50 years ²	~50 years ³	~50 years ³	~50 years ³	~50 years ³
View From the Falls Bridge	90 Ft / 23,000 Sq Ft	90 Ft / 24,000 Sq Ft				
View Of the Falls Bridge	NA	NA	NA	NA	NA	NA
Aesthetics of the alternate alignment area	No Change					
Local Interest/Comment	NA	NA	NA	NA	NA	NA
Additional Road Ownership	Strong emotional attachment to existing Falls Bridge					
Longterm Road Financial Obligation ⁴	NA	NA	NA	NA	NA	NA
Additional Structure Ownership Obligation ⁴	NA	NA	NA	NA	NA	NA
Longterm Bridge Financial Obligation ⁴	NA	NA	NA	NA	NA	NA
Colour Impact to Motorists	NA	NA	NA	NA	NA	NA
Roadside	NA	NA	NA	NA	NA	NA
Access	Grass Impact					
Power/Road Maintenance	Grass Impact					
Tourism/Local Businesses	Grass Impact					
Local Interest/Comment	No Change					
Water Recreational Access ⁵	No Change					
State/Pet Accommodations ⁶	No change					
Pedestrian Access ⁷	Less Effort					
Cost	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Life Cycle Cost	\$7,000,000	\$5,300,000	\$5,300,000	\$5,300,000	\$5,300,000	\$5,300,000
Net Present Value	\$8,800,000	\$0	\$0	\$0	\$0	\$0
Benefit	\$14,400,000	\$19,600,000	\$19,600,000	\$19,600,000	\$19,600,000	\$19,600,000
Net Benefit	\$6,400,000	\$14,300,000	\$14,300,000	\$14,300,000	\$14,300,000	\$14,300,000
Best Accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise
Best mounting possible	Yes	Yes	Yes	Yes	Yes	Yes
Best Visibility	5,100 Sq Ft	400,000 Sq Ft	400,000 Sq Ft	400,000 Sq Ft	400,000 Sq Ft	400,000 Sq Ft
Best Geometrics	21,000 Sq Ft	54,000 Sq Ft				
Best Construction Schedule	12 to 24 months	18 to 24 months				
Best Safety	5000 days	18 to 24 months				
Best Environmental Impact	Likely during basic impact time period	0 months				
Best Overall	Not evaluated					

Summary of Alternatives

The following alternatives were developed as solutions to achieve the project Purpose & Need:

- Options that preserve the Falls Bridge:
 - Bridge rehabilitation & strengthening
 - Bridge rehabilitation & strengthening with an added sidewalk
 - Construction of a new bypass roadway and bridge off-site
- Options that replace the Falls Bridge:
 - Aesthetically enhanced girder and tied arch bridge types considered

Summary of Alternatives

In general the assessment of each alternative followed these steps:

1. Identify project constraints
2. Develop design concepts and general assumptions
3. Complete a conceptual engineering and constructability assessment
4. Present design concept to BAC, refine concept based on feedback
5. Work with BAC to assess each option using evaluation criteria and incorporate assessment results into Design Alternatives Matrix

Design Alternatives Matrix

Tool used to compare and contrast each alternative against a series of evaluation criteria.

The design alternative matrix is arranged such that:

- Each column represents an alternative
- Each row represents an evaluation criteria (e.g. environmental impacts, construction schedule, etc.)
- A copy of the draft matrix is in the handout packet

Description	Rehabilitation		Replacement		Alternative Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Substructure	Existing Standard Grains ¹	Gridder Bridge	NA			
Deck/Bed Roadway & Sidewalk Width	20'-4"	20'-4"	30'-0"	30'-0"	Reinforced Concrete	NA
Anticipated Service Life	~50 years ²	~50 years ²	~100 years	~100 years	-32'-0"	NA
Tree Clearing at Falls Bridge	NA	NA	Changed	Changed	~100 years	Additional 20 Ft. (8,000 Sq Ft. Total)
Tree Clearing at Alternative Alignment	No Change	No Change	Changed	Changed	~100 years	Additional 20 Ft. (8,000 Sq Ft. Total)
View FROM the Falls Bridge	No Change	Slight Change	NA	NA	~100 years	NA
View OF the Falls Bridge	NA	NA	NA	NA	~100 years	NA
Aesthetics of the alternative alignment area	Strong improvement attachment to existing Falls Bridge	Strong improvement attachment to existing Falls Bridge	NA	NA	~100 years	NA
Local Interest/Comment	NA	NA	NA	NA	~100 years	NA
Additional Road Ownership	NA	NA	NA	NA	~100 years	NA
Longterm Road Financial Obligation ³	NA	NA	NA	NA	~100 years	NA
Additional Structure Ownership	NA	NA	Less Impact	Less Impact	~100 years	NA
Longterm Bridge Financial Obligation ³	Greater Impact	Greater Impact	Less Impact	Less Impact	~100 years	NA
Detour Impact to Motorists	Greater Impact	Greater Impact	Less Impact	Less Impact	~100 years	NA
Fire/Risk	Greater Impact	Greater Impact	Less Impact	Less Impact	~100 years	NA
Ambulance	No Change	No Change	Less Effort	Less Effort	~100 years	NA
Flowing/Road Maintenance	No Change	No Change	No change	No change	~100 years	NA
Tourists/Local Businesses	No change	No change	SAFEST	SAFEST	~100 years	NA
Local Interest/Comment	No change	No change	SAFEST	SAFEST	~100 years	NA
Water Recreational Access ⁴	Least safe	Safer	Safer	Safer	~100 years	NA
Blue/Red Accommodations ⁵	Least safe	Safer	SAFEST	SAFEST	~100 years	NA
Pedestrian Access ⁶	No increase	No increase	Model community desires for improved pedestrian safety	Model community desires for improved pedestrian safety	~100 years	NA
Parking ⁷	\$3,200,000	\$3,200,000	\$2,600,000	\$2,600,000	~100 years	NA
Local Interest/Comment	\$8,100,000	\$8,100,000	\$7,800,000	\$7,800,000	~100 years	NA
User Costs (Construction) ⁸	\$15,500,000	\$15,700,000	\$14,400,000	\$14,400,000	~100 years	NA
Initial Construction Cost	\$15,500,000	\$15,700,000	\$14,400,000	\$14,400,000	~100 years	NA
Service Life Cost ¹¹ (100 Year Period)	\$15,500,000	\$15,700,000	\$14,400,000	\$14,400,000	~100 years	NA
Natural Resources (Wetlands / Fish / Birds / Mammals)	Best accommodation of sea level rise	~100 years	NA			
Technological Resources	Best accommodation of sea level rise	~100 years	NA			
Historical Resources	Best accommodation of sea level rise	~100 years	NA			
Sea Level Rise ⁹	Best accommodation of sea level rise	~100 years	NA			
Maintaining Reversing Falls	Best accommodation of sea level rise	~100 years	NA			
Utilities	Best accommodation of sea level rise	~100 years	NA			
Number of Affected Parcels ¹⁰	Best accommodation of sea level rise	~100 years	NA			
Permanent Impacts	Best accommodation of sea level rise	~100 years	NA			
Temporary Impacts	Best accommodation of sea level rise	~100 years	NA			
Notability Visibility	Best accommodation of sea level rise	~100 years	NA			
Pedestrian Visibility	Best accommodation of sea level rise	~100 years	NA			
Roadway Geometrics	Best accommodation of sea level rise	~100 years	NA			
Construction Duration	Best accommodation of sea level rise	~100 years	NA			
Duration of Traffic Impact	Best accommodation of sea level rise	~100 years	NA			

Design Alternatives Matrix

Tool used to compare and contrast each alternative against a series of evaluation criteria.

The design alternative matrix is arranged such that:

- Each column represents an alternative
- Each row represents an evaluation criteria (e.g. environmental impacts, construction schedule, etc.)
- A copy of the draft matrix is in the handout packet

Let's begin with a brief discussion of alternatives

Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)		Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge	
		Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction			
Description	Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A	
	Substructure	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	N/A	
	Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A	
	Anticipated Service Life	~50 years ⁴	~50 years ⁴	~100 years	~100 years	~100 years	N/A	
Aesthetics	Tree Clearing at Falls Bridge	90 Ft. / 23,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	N/A	Additional 35 Ft. / 6,000 Sq Ft. (125 Ft. / 30,000 Sq Ft. Total)	
	Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+/- 80 Ft. / 500,000 SqFt.		
	View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A		
	View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change		
	Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed		
	Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge					Negative aesthetic impact associated with clearing
Community Impacts	Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	Temporary Bridge	
	Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000		
	Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway Cross Culvert		
	Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000		
	Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed		Less
	Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed		Less
	Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed		Less
	Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase		N/A
	Tourism/Local Businesses							
	Local Interest/Comment							

Bridge Rehabilitation

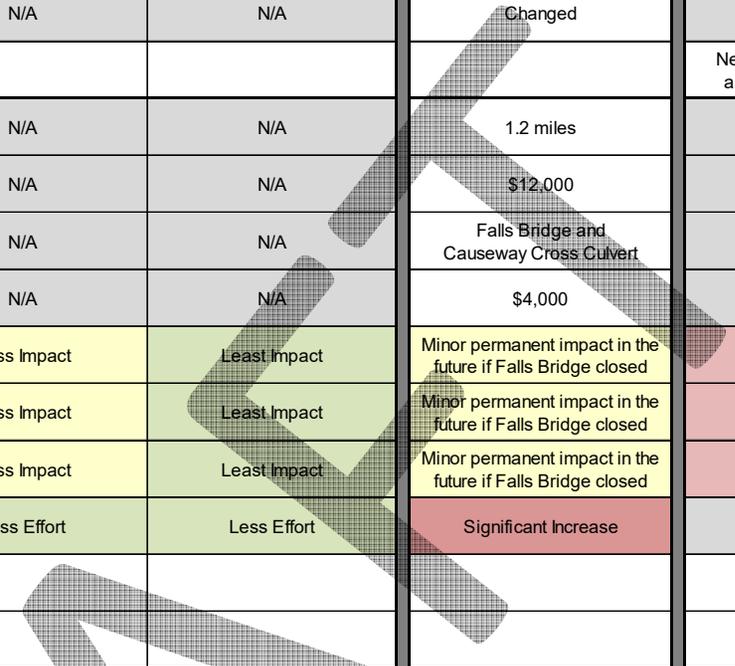
Bridge Replacement

Alternate Alignment

Design Alternatives Matrix

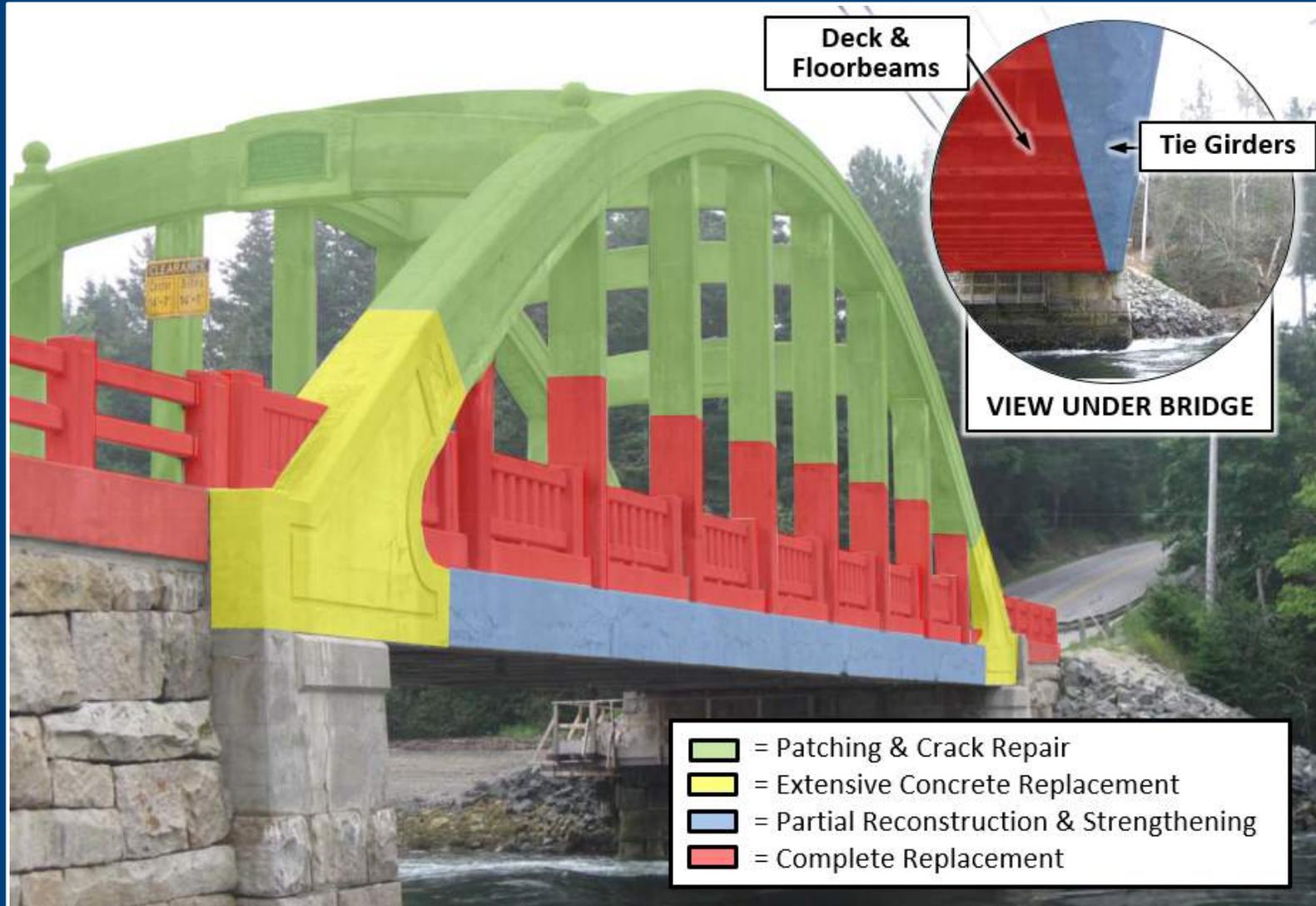
Evaluation Criteria (Listed Alphabetically)		Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
		Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Description	Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A
	Substructure	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	N/A
	Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A
	Anticipated Service Life	~50 years ⁴	~50 years ⁴	~100 years	~100 years	~100 years	N/A
Aesthetics	Tree Clearing at Falls Bridge	90 Ft. / 23,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	N/A	Additional 35 Ft. / 6,000 Sq Ft. (125 Ft. / 30,000 Sq Ft. Total)
	Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+/- 80 Ft. / 500,000 SqFt.	N/A
	View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A	N/A
	View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change	N/A
	Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed	N/A
	Local Interest/Comment	Strong emotional attachment to existing Falls Bridge		Strong emotional attachment to existing Falls Bridge			
Community Impacts	Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	N/A
	Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	
	Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway Cross Culvert	N/A
	Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000	N/A
	Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	N/A
	Tourism/Local Businesses						
	Local Interest/Comment						

Bridge Rehabilitation



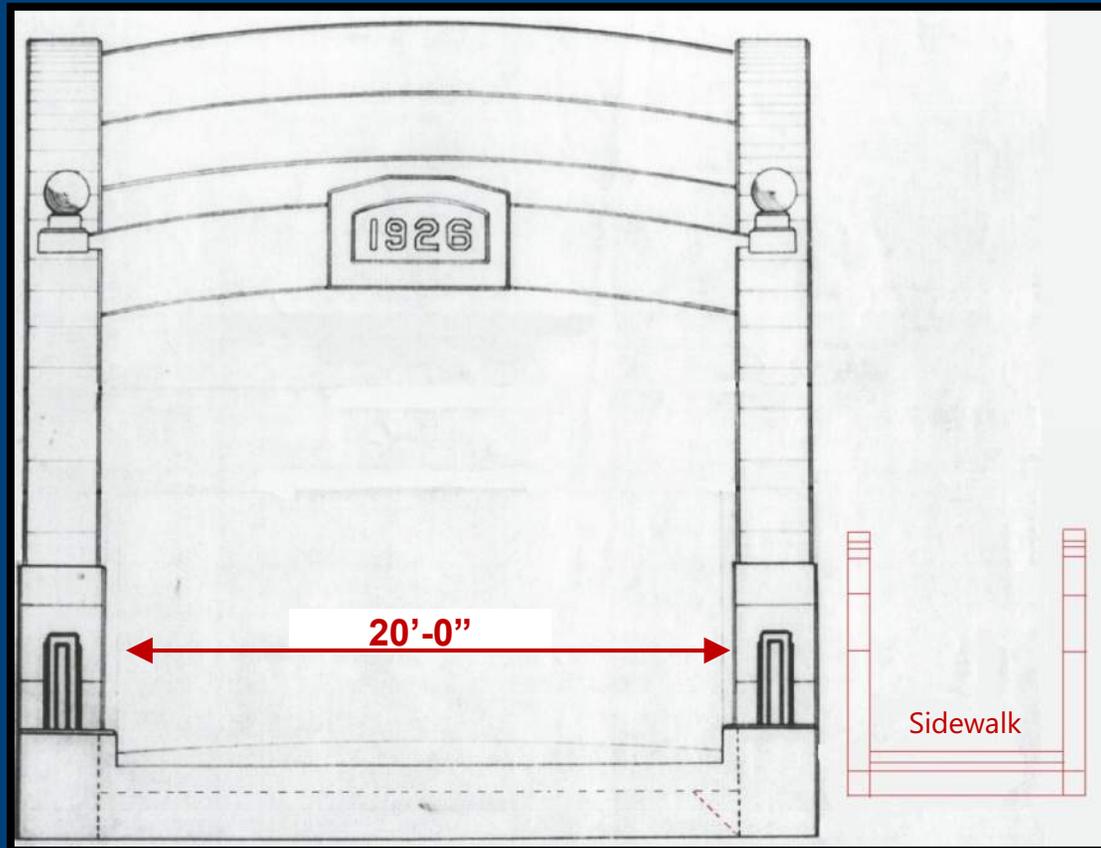
Design Alternatives Matrix - Rehabilitation

Superstructure



Design Alternatives Matrix - Rehabilitation

Superstructure – Maintain Existing Roadway



Design Alternatives Matrix - Rehabilitation

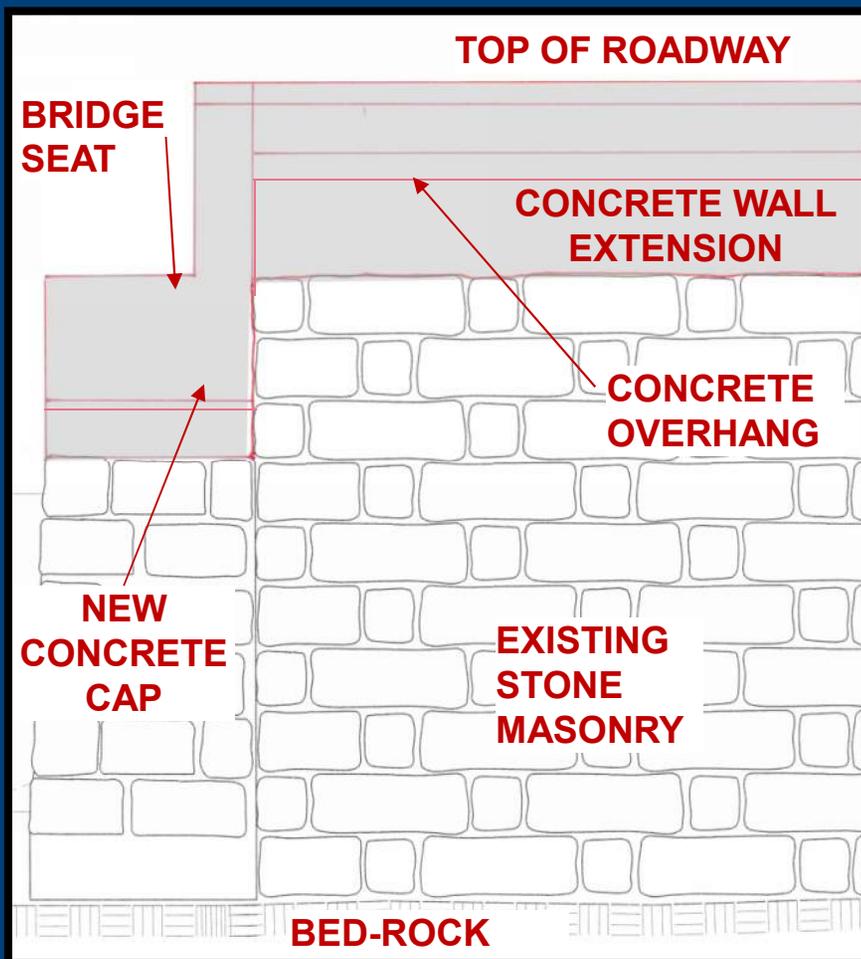
Substructure



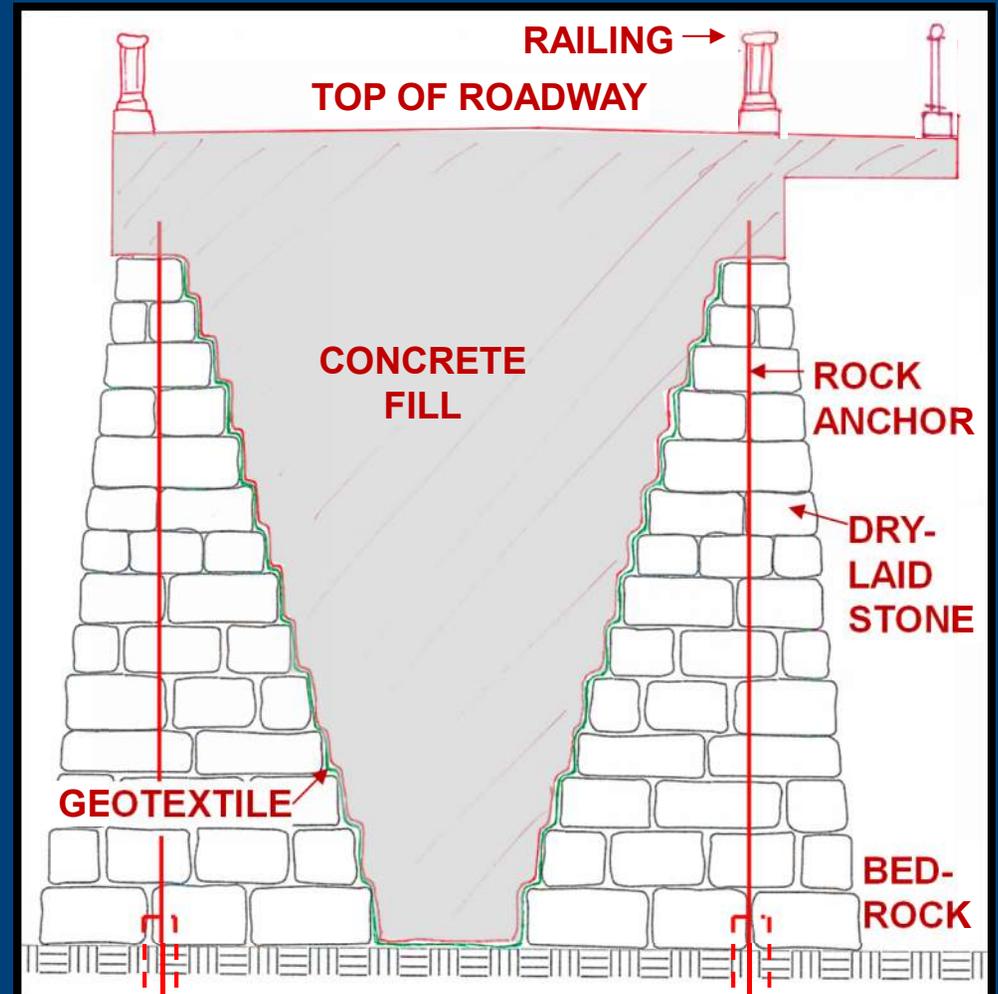
Design Alternatives Matrix - Rehabilitation

Substructure – Existing masonry walls to remain

Elevation



Section



Design Alternatives Matrix

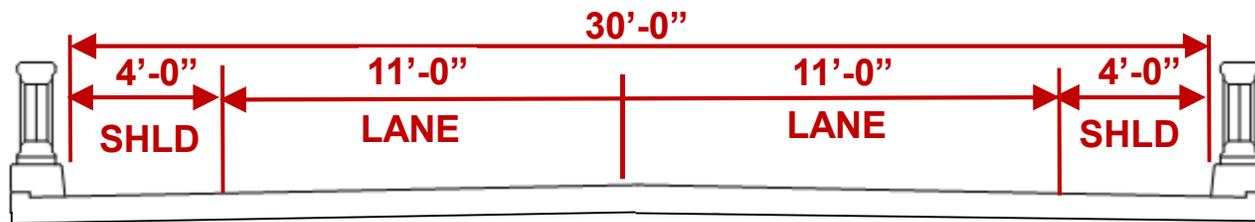
Evaluation Criteria (Listed Alphabetically)		Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
		Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Description	Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A
	Substructure	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	N/A
	Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A
	Anticipated Service Life	~50 years ⁴	~50 years ⁴	~100 years	~100 years	~100 years	N/A
Aesthetics	Tree Clearing at Falls Bridge	90 Ft. / 23,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	N/A	Additional 35 Ft. / 6,000 Sq Ft. (125 Ft. / 30,000 Sq Ft. Total)
	Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+/- 80 Ft. / 500,000 SqFt.	N/A
	View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A	N/A
	View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change	N/A
	Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed	N/A
	Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge				
Community Impacts	Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	N/A
	Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	
	Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway Cross Culvert	N/A
	Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000	N/A
	Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	N/A
	Tourism/Local Businesses						
	Local Interest/Comment						

Bridge Replacement

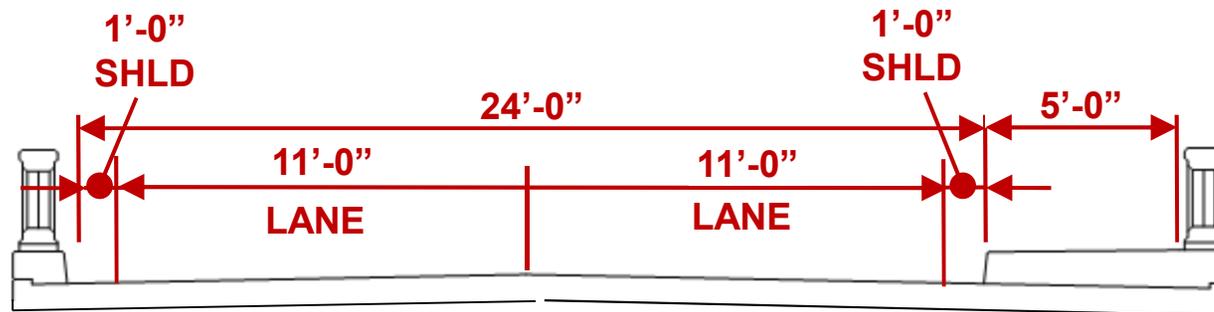
Design Alternatives Matrix - Replacement

Design Criteria

- 100 Year Service Life, Designed to Carry Modern Design Loads
- Modern Typical Section



TYPICAL SECTION WITH WIDE SHOULDERS



TYPICAL SECTION WITH SIDEWALK

Design Alternatives Matrix - Replacement

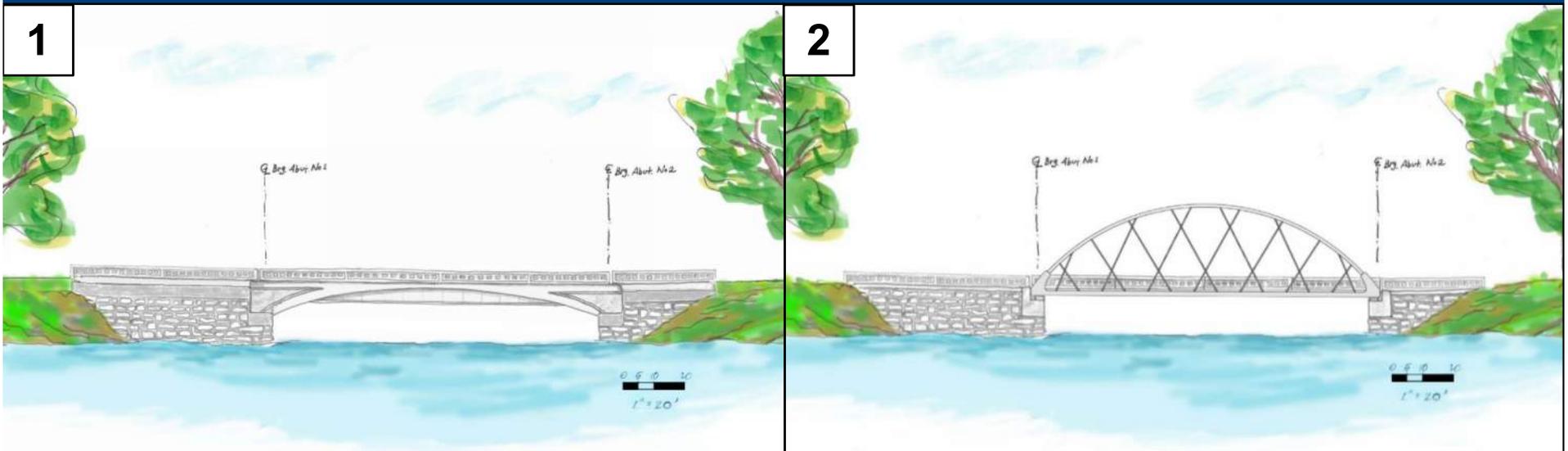
Superstructure

Precast Concrete Girders

1. Prefabricated standard girder shape with aesthetic fascia panel

Tied Arch

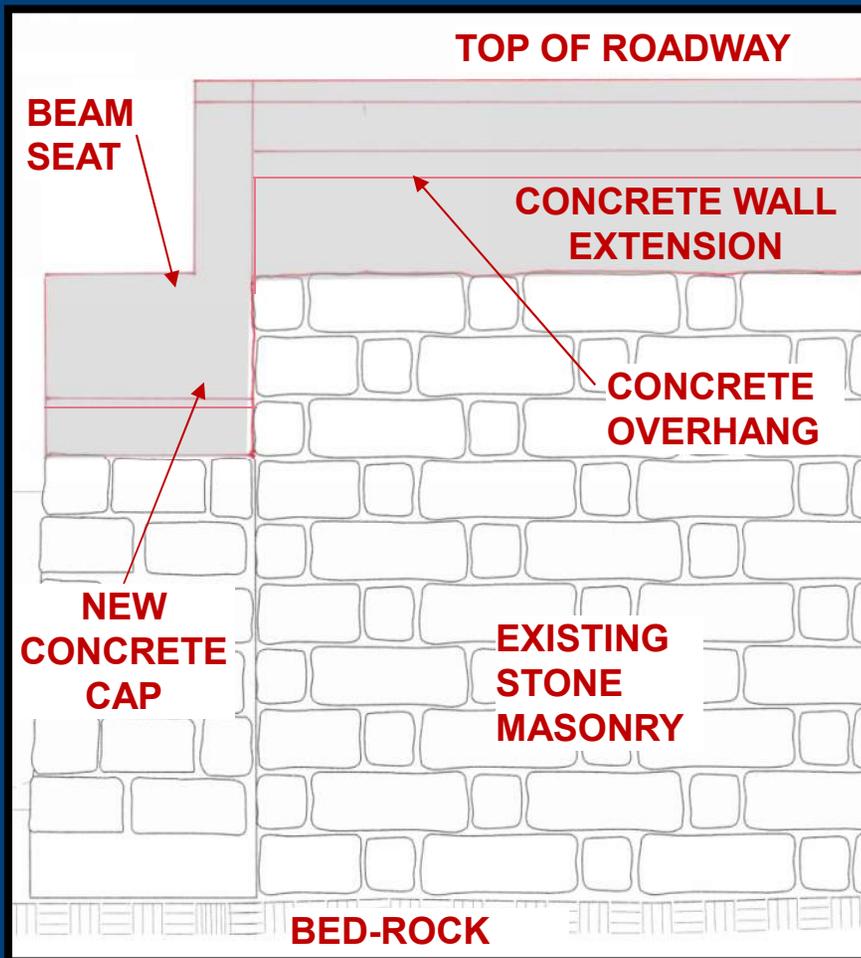
2. Tied arch with steel arch rib and concrete tie-girder



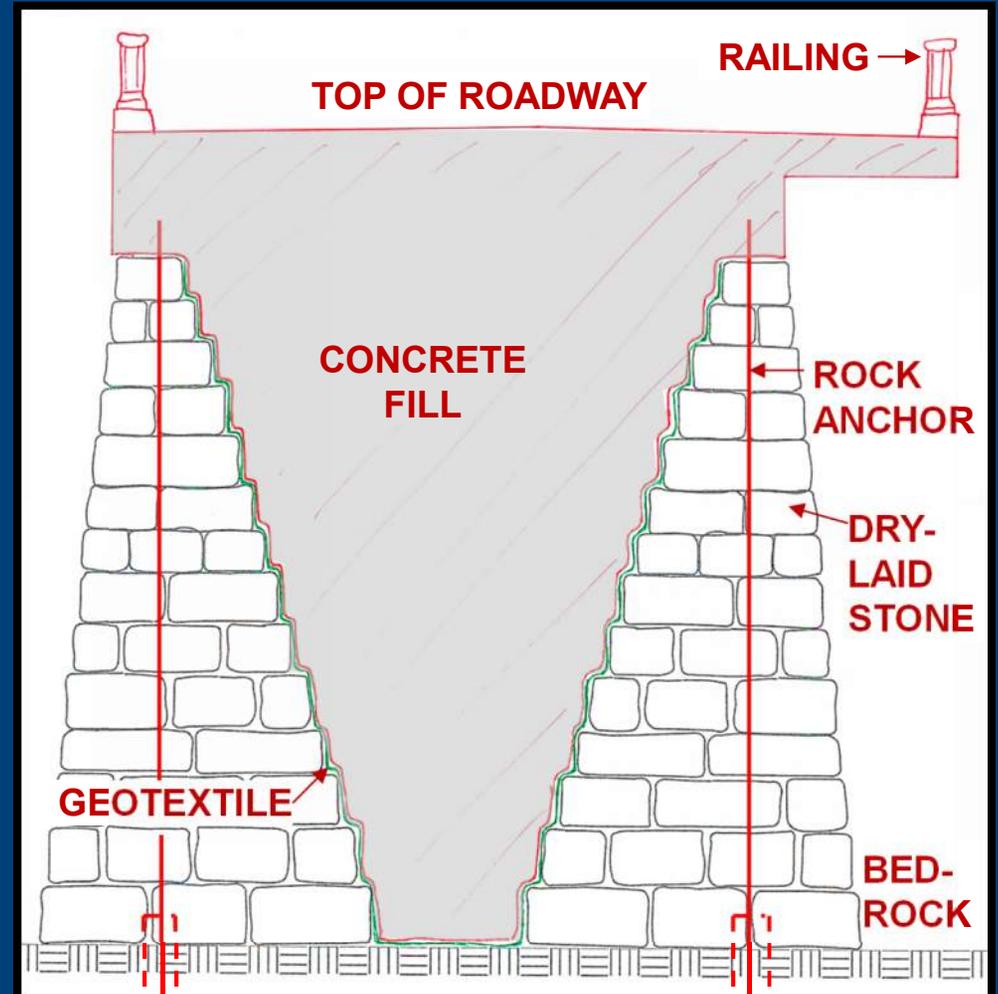
Design Alternatives Matrix - Replacement

Substructure

Elevation



Section



Design Alternatives Matrix - Replacement

Construction Methods Evaluated

- Conventional Construction

Typical construction approach using cast-in-place concrete where the majority of work is completed on-site. Results in a longer construction duration.

- Accelerated Bridge Construction (ABC)

Uses more prefabricated elements and minimizes the amount of work required on-site which reduces the overall construction duration.

Evaluated multiple approaches to ABC

- Prefabricated Bridge Elements
- Bridge Movement Systems – Lateral Slide

ABC methods were explored for the rehabilitation option but are not applicable given the nature of the work.

Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)		Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
		Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Description	Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A
	Substructure	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	N/A
	Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A
	Anticipated Service Life	~50 years ⁴	~50 years ⁴	~100 years	~100 years	~100 years	N/A
Aesthetics	Tree Clearing at Falls Bridge	90 Ft. / 23,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	N/A	Additional 35 Ft. / 6,000 Sq Ft. (125 Ft. / 30,000 Sq Ft. Total)
	Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+/- 80 Ft. / 500,000 SqFt.	N/A
	View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A	N/A
	View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change	N/A
	Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed	N/A
	Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge				
Community Impacts	Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	N/A
	Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	N/A
	Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway Cross Culvert	N/A
	Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000	N/A
	Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
	Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	N/A
	Tourism/Local Businesses						
	Local Interest/Comment						

Design Alternatives Matrix - Alt. Alignment



← Route 172

Route 175 →

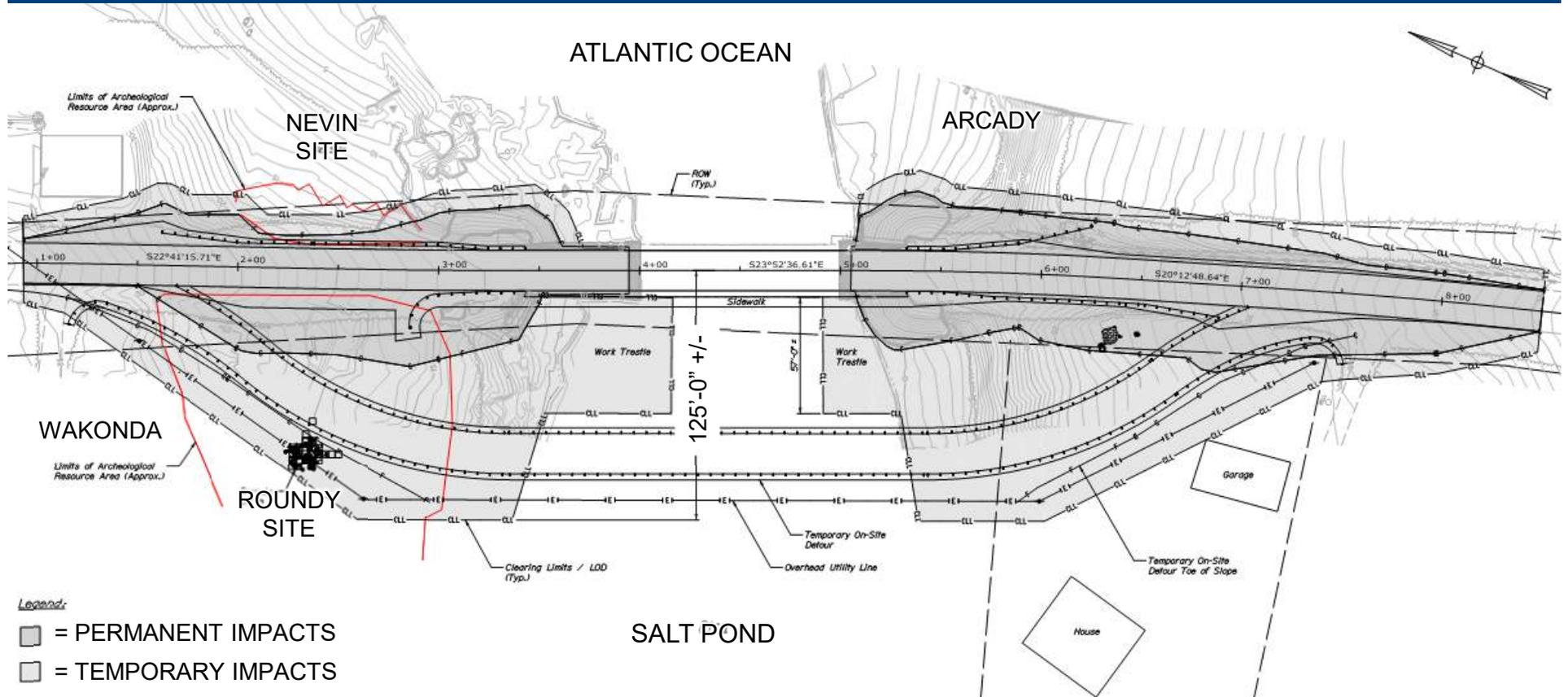


Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)		Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge	
		Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction			
Description	Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A	
	Substructure	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	N/A	
	Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A	
	Anticipated Service Life	~50 years ⁴	~50 years ⁴	~100 years	~100 years	~100 years	N/A	
Aesthetics	Tree Clearing at Falls Bridge	90 Ft. / 23,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	N/A	Additional 35 Ft. / 6,000 Sq Ft. (125 Ft. / 30,000 Sq Ft. Total)	
	Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+/- 80 Ft. / 500,000 SqFt.		
	View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A		
	View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change		
	Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed		
	Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge					
Community Impacts	Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	Temporary Bridge	
	Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000		
	Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway Cross Culvert		
	Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000		
	Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed		Less
	Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed		Less
	Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed		Less
	Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase		N/A
	Tourism/Local Businesses							
	Local Interest/Comment							

Design Alternatives Matrix - Temp. Bridge

Rehabilitation or Replacement (Conventional Construction Only)



Note: Layout is approximate and subject to change as more information about the site becomes available.

Design Alternatives Matrix

Tool used to compare and contrast each alternative against a series of evaluation criteria.

The design alternative matrix is arranged such that:

- Each column represents an alternative
- Each row represents an evaluation criteria (e.g. property impacts, construction schedule, etc.)
- A copy of the draft matrix is in the handout packet.

Let's move on to evaluation criteria

Design Alternatives Matrix

Evaluation Criteria <i>(Listed Alphabetically)</i>	Rehabilitation		Replacement		Alternate Alignment <i>(Route 175 w/ New Rd.)</i>	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Description						
Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	NA
Substructure	Existing Stacked Granite ²	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	NA
Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	NA
Anticipated Service Life	~50 years ²	~50 years ⁴	~100 years	~100 years	~100 years	NA
Aesthetics						
Tree Clearing at Falls Bridge	90 Ft / 23,000 SqFt	90 Ft / 24,000 SqFt	90 Ft / 24,000 SqFt	90 Ft / 24,000 SqFt	N/A	Additional 35 Ft / 6,000 Sq Ft (125 Ft / 30,000 Sq Ft Total)
Tree Clearing at Alternate Alignment	NA	NA	NA	NA	+/- 80 Ft / 500,000 SqFt	NA
View FROM the Falls Bridge	No Change	No Change	Changed	Changed	NA	NA
View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change	NA
Aesthetics of the alternate alignment area	NA	NA	NA	NA	Changed	NA
Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge				Negative aesthetic impact associated with clearing
Community Impacts						
Additional Road Ownership	NA	NA	NA	NA	1.2 miles	NA
Longterm Road Financial Obligation ⁷	NA	NA	NA	NA	\$12,000	NA
Additional Structure Ownership	NA	NA	NA	NA	Falls Support and Causeway Class/Culvert	NA
Longterm Bridge Financial Obligation ⁸	NA	NA	NA	NA	\$4,000	NA
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	NA
Tourism/Local Businesses						
Local Interest/Comment						
Community Interest						
Water Recreational Access ⁵	No change	No change	No change	No change	No change	No change
Bike/Ped Accommodations ⁵	Least safe	Safer	Safest	Safest	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	NA
Pedestrian Access ⁵	Least safe	Safer	Safest	Safest	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	NA
Parking ⁵	No increase	No increase	No increase	No increase	No increase	No increase
Local Interest/Comment		Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety		
Cost						
User Costs (Construction) ⁶	\$3,200,000	\$3,200,000	\$1,600,000	\$330,000	\$0	\$150,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,800,000	\$5,300,000	\$14,400,000	Additional \$800,000
Service Life Cost ¹¹ (100 Year Period)	\$15,500,000	\$15,700,000	\$7,000,000	\$6,900,000	\$19,600,000 ⁹	NA
Environmental Impacts						
Natural Resources (Wetlands / Fish / Birds / Mammals)	See Handout					
Archeological Resources	See Handout					
Historical Resources	See Handout					
Other						
Sea Level Rise ¹	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	NA
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	NA
Property Impacts						
Number of Affected Parcels ¹⁰	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,250 SqFt	2,250 SqFt	5,100 SqFt	5,100 SqFt	400,000 SqFt	No additional permanent impacts
Temporary Impacts	20,000 SqFt	21,000 SqFt	21,000 SqFt	21,000 SqFt	54,000 SqFt	Additional 9,000 SqFt
Safety (At Falls Bridge Only)						
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	NA
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	NA
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	NA
Schedule						
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months		
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days		
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period		

Each alternative was assessed against ten groups of criteria, including:

- General description / features
- Aesthetics
- Community Impacts
- Community Interest
- Cost
- Environmental Impacts
- Other
- Property Impacts
- Safety
- Schedule

Color Code Legend:

More Desirable

Less Desirable

Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A
Substructure	Existing Stacked Granite ³	Reinforced Concrete	N/A			
Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A
Anticipated Service Life	~50 years ⁴	~50 years ⁴	~100 years	~100 years	~100 years	N/A

Description
Key Factors & Differentiators:
Roadway Width
Service Life

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A
Substructure	Existing Stacked Granite ³	Reinforced Concrete	N/A			
Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A
Anticipated Service Life	~50 years ⁴	~50 years ⁴	~100 years	~100 years	~100 years	N/A

Number of Affected Parcels⁶	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,280 SqFt	2,280 SqFt	5,100 SqFt	5,100 SqFt	400,000 SqFt	No additional permanent impacts
Temporary Impacts	35,000 SqFt	21,000 SqFt	21,000 SqFt	21,000 SqFt	54,000 SqFt	Additional 3,000 SqFt
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal



Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Superstructure	Concrete Tied Arch	Concrete Tied Arch	Girder/Tied Arch	Girder/Tied Arch	Girder Bridge	N/A
Substructure	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	N/A
Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A
Anticipated Service Life	~50 years ²	~50 years ²	~100 years	~100 years	~100 years	N/A
Aesthetics						
Tree Clearing at Falls Bridge	90 Ft. / 23,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	N/A	Additional 35 Ft. / 6,000 Sq Ft. (125 Ft. / 30,000 Sq Ft. Total)
Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+/- 80 Ft. / 500,000 SqFt.	N/A
View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A	N/A
View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change	N/A
Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed	N/A
Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge				Negative aesthetic impact associated with clearing
Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	N/A
Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	N/A
Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway/Cross Culvert	N/A
Longterm Bridge Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$4,000	N/A
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the Area # Falls Bridge closed	Less
Fire Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the Area # Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the Area # Falls Bridge closed	Less
Flowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						
Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Aesthetics						
Tree Clearing at Falls Bridge	90 Ft. / 23,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	90 Ft. / 24,000 SqFt.	N/A	Additional 35 Ft. / 6,000 Sq Ft. (125 Ft. / 30,000 Sq Ft. Total)
Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+/- 80 Ft. / 500,000 SqFt.	N/A
View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A	N/A
View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change	N/A
Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed	N/A
Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge				Negative aesthetic impact associated with clearing
Permanent Impacts	2,280 SqFt.	2,280 SqFt.	5,100 SqFt.	5,100 SqFt.	400,000 SqFt.	No additional permanent impacts
Temporary Impacts	20,000 SqFt.	21,000 SqFt.	21,000 SqFt.	21,000 SqFt.	54,000 SqFt.	Additional 9,000 SqFt.
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal

Aesthetics
Key Factors & Differentiators:
 Tree clearing
 Impact to view of Falls Bridge
 Impact to view from Falls Bridge
 Local interest comments



Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Superstructure	Concrete Tied Arch	Concrete Tied Arch	Grider/Tied Arch	Grider/Tied Arch	Grider Bridge	N/A
Substructure	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Existing Stacked Granite ³	Reinforced Concrete	N/A
Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A
Anticipated Service Life	~50 years ⁶	~50 years ⁶	~100 years	~100 years	~100 years	N/A
Tree Clearing at Falls Bridge	50 Fl / 22,000 Sq Ft	50 Fl / 24,000 Sq Ft	50 Fl / 24,000 Sq Ft	50 Fl / 24,000 Sq Ft	N/A	Additional 35 Fl / 6,000 Sq Ft (125 Fl / 30,000 Sq Ft Total)
Tree Clearing at Alternate Alignment	N/A	N/A	N/A	N/A	+ 80 Fl / 800,000 Sq Ft	N/A
View FROM the Falls Bridge	No Change	No Change	Changed	Changed	N/A	N/A
View OF the Falls Bridge	No Change	Slight Change	Changed	Changed	No Change	N/A
Aesthetics of the alternate alignment area	N/A	N/A	N/A	N/A	Changed	N/A
Local Interest/Comment	Strong emotional attachment to existing Falls Bridge	Strong emotional attachment to existing Falls Bridge				Negative aesthetic impact
Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	N/A
Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	N/A
Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway Cross Culvert	N/A
Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000	N/A
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						

Community Impacts
Key Factors & Differentiators:
 Infrastructure Cost to Town
 Emergency Response Time

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Additional Road Ownership	N/A	N/A	N/A	N/A	1.2 miles	N/A
Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	N/A
Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway Cross Culvert	N/A
Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000	N/A
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Plowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						

Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Superstructure	Concrete Tied Arch	Concrete Tied Arch	Older/Tied Arch	Older/Tied Arch	Older Bridge	NA
Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Community Interest	Water Recreational Access⁵	No change	No change	No change	No change	No change
	Bike/Ped Accommodations⁵	Least safe	Safer	Safest	Safest	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic
	Pedestrian Access⁵	Least safe	Safer	Safest	Safest	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic
	Parking⁵	No increase	No increase	No increase	No increase	No increase
	Local Interest/Comment		Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	
Local Interest/Comment						
Water Recreational Access⁵	No change	No change	No change	No change	No change	No change
Bike/Ped Accommodations⁵	Least safe	Safer	Safest	Safest	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	NA
Pedestrian Access⁵	Least safe	Safer	Safest	Safest	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	NA
Parking⁵	No increase	No increase	No increase	No increase	No increase	No increase
Local Interest/Comment		Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety		
Live Costs (Construction)	\$3,200,000	\$3,200,000	\$1,400,000	\$2,500,000	\$0	\$150,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,800,000	\$5,300,000	\$14,400,000	Additional \$600,000
Service Life Cost¹¹ (100 Year Period)	\$14,500,000	\$15,700,000	\$7,000,000	\$6,900,000	\$19,600,000 ⁸	NA
Natural Resources (Wetlands / Fish / Birds / Mammals)						
Archaeological Resources						
Historical Resources						
Sea Level Rise¹	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	NA
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	NA
Number of Affected Parcels⁹	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,200 SqFt	2,200 SqFt	5,100 SqFt	5,100 SqFt	400,000 SqFt	No additional permanent impacts
Temporary Impacts	20,000 SqFt	21,000 SqFt	21,000 SqFt	21,000 SqFt	64,000 SqFt	Additional 9,000 SqFt
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	NA
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	NA
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	NA
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal

Community Interest
Key Factors & Differentiators:
 Bicycle Accommodation
 Pedestrian Accommodation
 Local interest comment



Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Cost						
User Costs (Construction)¹⁰	\$3,200,000	\$3,200,000	\$1,600,000	\$330,000	\$0	\$150,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,600,000	\$5,300,000	\$14,400,000	Additional \$800,000
Service Life Cost¹¹ (100 Year Period)	\$15,500,000	\$15,700,000	\$7,000,000	\$6,900,000	\$19,600,000 ⁹	N/A
Longterm Road Financial Obligation⁷	N/A	N/A	N/A	N/A	\$12,000	
Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway/Crisis Culvert	N/A
Longterm Bridge Financial Obligation⁸	N/A	N/A	N/A	N/A	\$4,000	N/A
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Flowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						
Water Recreational Access²	No change	No change	No change	No change	No change	No change
Bike/Ped Accommodations³	Least safe	Safer	Safest	Safest	Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	N/A
Pedestrian Access⁴	Least safe	Safer	Safest	Safest	Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	N/A
Parking⁵	No increase	No increase	No increase	No increase	No increase	No increase
Local Interest/Comment		Meets community desire for improved pedestrian safety				
User Costs (Construction)¹⁰	\$3,200,000	\$3,200,000	\$1,600,000	\$330,000	\$0	\$150,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,600,000	\$5,300,000	\$14,400,000	Additional \$800,000
Service Life Cost¹¹ (100 Year Period)	\$15,500,000	\$15,700,000	\$7,000,000	\$6,900,000	\$19,600,000 ⁹	N/A
Natural Resources (Wetlands / Fish / Birds / Mammals)						
Archaeological Resources						
Historical Resources						
Sea Level Rise¹	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls Bridge	N/A
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	N/A
Number of Affected Parcels⁶	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,250 SqFt	2,250 SqFt	5,100 SqFt	5,100 SqFt	400,000 SqFt	No additional permanent impacts
Temporary Impacts	20,000 SqFt	21,000 SqFt	21,000 SqFt	21,000 SqFt	54,000 SqFt	Additional 9,000 SqFt
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal

Cost
Key Factors & Differentiators:
 User costs
 Construction cost
 Service life cost



Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Superstructure	Concrete Tied Arch	Concrete Tied Arch	Grider/Tied Arch	Grider/Tied Arch	Grider Bridge	N/A
Substructure	Existing Stacked Granite ¹	Reinforced Concrete	N/A			
Combined Roadway & Sidewalk Width	20'-4"	~25'-0"	~30'-0"	~30'-0"	~32'-0"	N/A

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Environmental Impacts	See Handout					
Natural Resources (Wetlands / Fish / Birds / Mammals)						
Archeological Resources						
Historical Resources						

Category	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction	Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
Community Impacts						
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Flowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant Increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						
Water Recreational Access ²	No change	No change	No change	No change	No change	No change
Bike/Ped Accommodations ³	Least safe	Safer	Safest	Safest	Unimproved Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic.	N/A
Pedestrian Access ⁴	Least safe	Safer	Safest	Safest	Unimproved Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic.	N/A
Parking ⁵	No increase	No increase	No increase	No increase	No increase	No increase
Local Interest/Comment		Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety		
User Costs (Construction) ⁶	\$3,200,000	\$3,200,000	\$1,600,000	\$330,000	\$0	\$150,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,900,000	\$0,300,000	\$14,400,000	Additional \$0.00,000
Service Life Cost ⁷	\$14,400,000	\$14,100,000	\$7,200,000	\$0,300,000	\$14,400,000	N/A

Category	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction	Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
Environmental Impacts	See Handout					
Natural Resources (Wetlands / Fish / Birds / Mammals)						
Archeological Resources						
Historical Resources						
Other						
Sea Level Rise ¹	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	N/A
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	N/A
Property Impacts						
Number of Affected Parcels ⁸	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,200 SqFt	2,200 SqFt	5,100 SqFt	5,100 SqFt	400,000 SqFt	No additional permanent impacts
Temporary Impacts	20,000 SqFt	21,000 SqFt	21,000 SqFt	21,000 SqFt	54,000 SqFt	Additional 9,000 SqFt
Safety (At Falls Bridge)						
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A
Schedule						
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal

Environmental Impacts
Key Factors & Differentiators:
(see next slides)



Fish and Wildlife

- Permanent Habitat Conversion
- Temporary Impacts:
 - Noise
 - Turbidity
 - Behavior
 - Migration



Fish and Wildlife

- Both rehab and replacement alternatives will affect fish and wildlife
- Alternate alignment results in largest permanent footprint at a new location
- Temporary detour adds temporary footprint, in-water activities, and construction duration

Historic Properties

PROPERTIES

- Blue Hill Falls Historic District
- Blue Hill Falls Bridge
- Arcady
- Wakonda
- Nevins Site
- John Roundy Site
- Luskey Site



EFFECTS

- Rehabilitation (Adverse Effect)
- Replacement (Adverse Effect)
- Alternate Alignment (No Adverse Effect*)



Figure 24. Northeast corner of the Roundy foundation of split stone.

Avoid, Minimize, Mitigate

- Refine footprint of permanent and temporary features
- Minimize species interactions with work windows
- Best Management Practices
- Minimize duration
- Minimize area of disturbance
- In-water noise attenuation and monitoring
- Consult/permit/mitigate for unavoidable impacts
- Documentation of property, recovery of archaeological artifacts

Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge	
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction			
Other	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge	
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction			
Sea Level Rise¹	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	N/A	
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes	
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	N/A	
Longterm Road Financial Obligation⁷	N/A	N/A	N/A	N/A	\$12,000	N/A	
Additional Structure Ownership⁸	N/A	N/A	N/A	N/A	Falls Bridge and Causeway/Cherry Culvert	N/A	
Longterm Bridge Financial Obligation⁹	N/A	N/A	N/A	N/A	\$4,000	N/A	
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less	
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less	
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less	
Flowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant increase	N/A	
Tourism/Local Businesses							
Local Interest/Comment							
Water Recreational Access⁵	No change	No change	No change	No change	No change	No change	
Bike/Ped Accommodations⁶	Least safe	Safer	Safest	Safest	Use ramp Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	N/A	
Pedestrian Access⁴	Least safe	Safer	Safest	Safest	Use ramp Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	N/A	
Parking³	No increase	No increase	No increase	No increase	No increase	No increase	
Local Interest/Comment		Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety			
User Costs (Construction)¹⁰	\$3,200,000	\$3,200,000	\$1,600,000	\$330,000	30	\$150,000	
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,900,000	\$5,300,000	\$14,400,000	Additional \$600,000	
Service Life Cost¹¹ (100 Year Period)	\$15,900,000	\$15,700,000	\$7,300,000	\$6,900,000	\$19,600,000 ¹²	N/A	
Natural Resources (Wetlands / Fish / Birds / Mammals)							
Archaeological Resources							
Historical Resources							
Other	Sea Level Rise¹	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	N/A
	Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
	Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	N/A
Number of Affected Parcels¹³	4	4	4	4	3	No additional Parcels	
Permanent Impacts	2,200 SqFt	2,200 SqFt	5,100 SqFt	5,100 SqFt	400,000 SqFt	No additional permanent impacts	
Temporary Impacts	30,000 SqFt	21,000 SqFt	21,000 SqFt	21,000 SqFt	64,000 SqFt	Additional 9,000 SqFt	
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A	
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A	
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A	
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months	
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	9 months	No additional impact	
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal	

Other
Key Factors & Differentiators:
 Sea level rise accommodation
 Possible bridge-mounted utilities



Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Property Impacts						
Number of Affected Parcels ⁶	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,250 SqFt.	2,250 SqFt.	5,100 SqFt.	5,100 SqFt.	400,000 SqFt.	No additional permanent impacts
Temporary Impacts	20,000 SqFt.	21,000 SqFt.	21,000 SqFt.	21,000 SqFt.	54,000 SqFt.	Additional 9,000 SqFt.
Longterm Road Financial Obligations⁷	N/A	N/A	N/A	N/A	\$12,000	N/A
Additional Structure Ownership⁸	N/A	N/A	N/A	N/A	Falls Bridge and Causeway/Cross Culvert	N/A
Longterm Bridge Financial Obligations⁹	N/A	N/A	N/A	N/A	\$4,000	N/A
Debris Impact to Materials	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the Azule Falls Bridge closed.	Less
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Major permanent impact in the Azule Falls Bridge closed.	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the Azule Falls Bridge closed.	Less
Flowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						
Water Recreational Access⁴	No change	No change	No change	No change	No change	No change
Bike/Ped Accommodations⁸	Least safe	Safer	Safest	Safest	Less room Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic.	N/A
Pedestrian Access⁴	Least safe	Safer	Safest	Safest	Less room Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic.	N/A
Parking⁵	No increase	No increase	No increase	No increase	No increase	No increase
Local Interest/Comment		Meets community desire to improve pedestrian safety.	Meets community desire for improved pedestrian safety.	Meets community desire for improved pedestrian safety.		
User Costs (Construction)¹⁶	\$3,200,000	\$3,200,000	\$1,600,000	\$330,000	30	\$160,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,900,000	\$8,300,000	\$14,400,000	Additional \$900,000
Service Life Cost¹⁷ (100 Year Period)	\$15,500,000	\$15,700,000	\$7,000,000	\$9,900,000	\$19,600,000	N/A
Natural Resources (Wetlands / Fish / Birds / Mammals)						
Archaeological Resources						
Historical Resources						
Sea Level Rise¹	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	N/A
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	N/A
Number of Affected Parcels ⁶	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,250 SqFt.	2,250 SqFt.	5,100 SqFt.	5,100 SqFt.	400,000 SqFt.	No additional permanent impacts
Temporary Impacts	20,000 SqFt.	21,000 SqFt.	21,000 SqFt.	21,000 SqFt.	54,000 SqFt.	Additional 9,000 SqFt.
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal

Property Impact
Key Factors & Differentiators:
 Permanent Impact
 Temporary Impact



Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A
Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	
Additional Structure Ownership	N/A	N/A	N/A	N/A	Falls Bridge and Causeway/Cross Culvert	N/A
Longterm Bridge Financial Obligation ⁸	N/A	N/A	N/A	N/A	\$4,000	N/A
Detour Impact to Motorists	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Fire Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Flowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						
Water Recreational Access ⁴	No change	No change	No change	No change	No change	No change
Bike/Ped Accommodations ⁴	Least safe	Safer	Safest	Safest	Unimproved Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic.	N/A
Pedestrian Access ⁵	Least safe	Safer	Safest	Safest	Unimproved Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic.	N/A
Parking ⁶	No increase	No increase	No increase	No increase	No increase	No increase
Local Interest/Comment		Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety		
User Costs (Construction) ¹⁰	\$3,200,000	\$3,200,000	\$1,000,000	\$330,000	\$0	\$150,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,900,000	\$5,300,000	\$14,400,000	Additional \$0.00
Service Life Cost ¹¹ (100 Year Period)	\$15,900,000	\$16,700,000	\$7,000,000	\$6,900,000	\$19,800,000 ⁹	N/A
Natural Resources (Wetlands / Fish / Birds / Mammals)						
Archaeological Resources						
Historical Resources						
Sea Level Rise ³	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	N/A
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	N/A
Number of Affected Parcels ¹²	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,260 SqFt	2,260 SqFt	5,108 SqFt	5,108 SqFt	401,000 SqFt	No additional/permanent impacts
Temporary Impacts	35,000 SqFt	31,000 SqFt	21,000 SqFt	21,000 SqFt	84,000 SqFt	Additional 3,000 SqFt
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Roadway Geometrics	Worst Geometrics	Worst Geometrics	Best Geometrics	Best Geometrics	Unimproved at Falls Bridge	N/A
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-65 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic limited time period	Not anticipated	Minimal

Safety
Key Factors & Differentiators:
 Motorist visibility
 Pedestrian visibility



Design Alternatives Matrix

Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Evaluation Criteria (Listed Alphabetically)	Rehabilitation		Replacement		Alternate Alignment (Route 175 w/ New Rd.)	Temporary Bridge
	Without Sidewalk	With Sidewalk	Conventional Construction	Accelerated Bridge Construction		
Schedule						
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal
Community Impacts						
Longterm Road Financial Obligation ⁷	N/A	N/A	N/A	N/A	\$12,000	N/A
Additional Structure Ownership ⁸	N/A	N/A	N/A	N/A	Fall Bridge and Causeway/Cross Culvert	N/A
Longterm Bridge Financial Obligation ⁹	N/A	N/A	N/A	N/A	\$4,000	N/A
Disturbance Impact to Materials	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Fire/Rescue	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Major permanent impact in the future if Falls Bridge closed	Less
Ambulance	Greatest Impact	Greatest Impact	Less Impact	Least Impact	Minor permanent impact in the future if Falls Bridge closed	Less
Flowing/Road Maintenance	No Change	No Change	Less Effort	Less Effort	Significant increase	N/A
Tourism/Local Businesses						
Local Interest/Comment						
Water Recreational Access ⁴	No change	No change	No change	No change	No change	No change
Bike/Ped Accommodations ⁴	Least safe	Safe	Safe	Safe	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	N/A
Pedestrian Access ⁵	Least safe	Safe	Safe	Safe	Unknown Least safe at Falls Bridge with bridge open. Safest if Falls Bridge closed to traffic	N/A
Parking ⁶	No increase	No increase	No increase	No increase	No increase	No increase
Local Interest/Comment		Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety	Meets community desire for improved pedestrian safety		
User Costs (Construction) ¹⁰	\$3,200,000	\$3,200,000	\$1,000,000	\$330,000	\$0	\$150,000
Initial Construction Cost	\$8,100,000	\$8,300,000	\$4,800,000	\$5,300,000	\$14,400,000	Additional \$00,000
Service Life Cost ¹¹ (100 Year Period)	\$15,500,000	\$16,700,000	\$7,000,000	\$9,900,000	\$19,000,000	N/A
Environmental Impacts						
Natural Resources (Wetlands / Fish / Birds / Mammals)						
Archaeological Resources						
Historical Resources						
Sea Level Rise ³	Better accommodation of sea level rise	Better accommodation of sea level rise	Best accommodation of sea level rise	Best accommodation of sea level rise	Does not accommodate sea level rise at Falls bridge	N/A
Maintains Reversing Falls	Yes	Yes	Yes	Yes	Yes	Yes
Utilities	Cannot be bridge mounted	Cannot be bridge mounted	Bridge mounting possible	Bridge mounting possible	Cannot be bridge mounted	N/A
Property Impacts						
Number of Affected Parcels ²	4	4	4	4	3	No additional Parcels
Permanent Impacts	2,200 SqFt	2,200 SqFt	7,100 SqFt	5,100 SqFt	400,000 SqFt	No additional permanent impacts
Temporary Impacts	20,000 SqFt	21,000 SqFt	21,000 SqFt	21,000 SqFt	54,000 SqFt	Additional 9,000 SqFt
Safety (at Falls Bridge)						
Motorist Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Pedestrian Visibility	Worst Visibility	Better Visibility	Best Visibility	Best Visibility	Unimproved at Falls Bridge	N/A
Access/Connectivity	Worst/Decrease	Worst/Decrease	Best/Decrease	Best/Decrease	Unimproved at Falls Bridge	N/A
Schedule						
Construction Duration	18 to 24 months	18 to 24 months	18 to 24 months	12 to 24 months	18 to 24 months	Additional 6 months
Duration of Traffic Impact	18 to 24 months	18 to 24 months	9 to 12 months	50-60 days	0 months	No additional impact
Night Work	Minimal	Minimal	Minimal	Likely during traffic impact time period	Not anticipated	Minimal

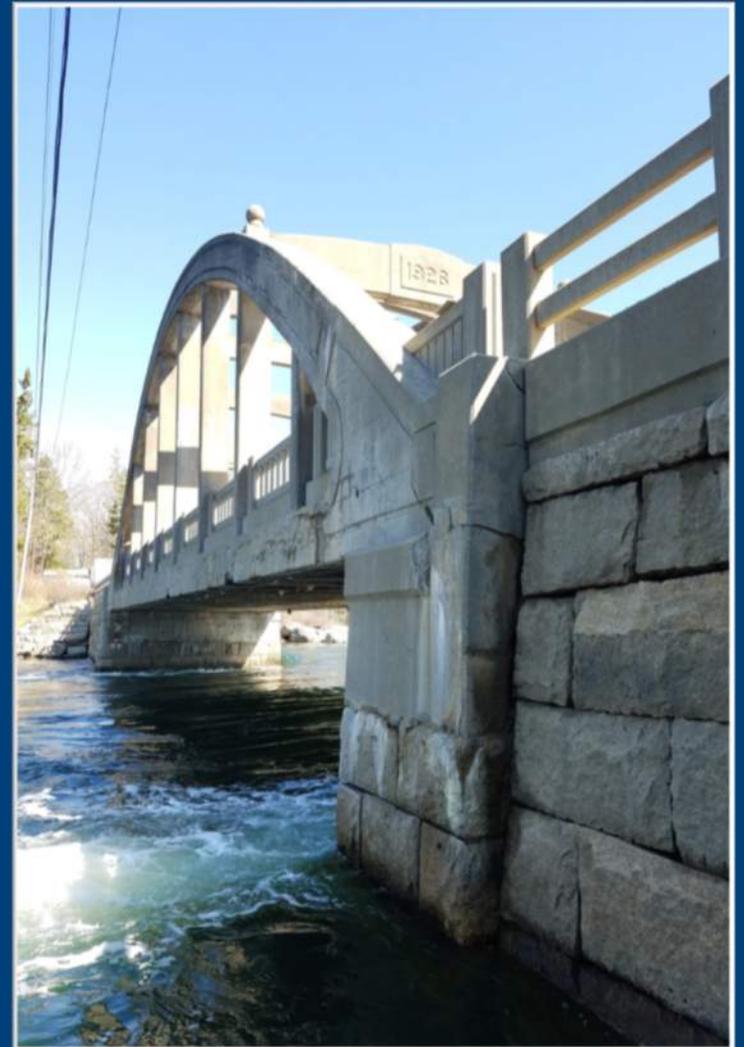
Schedule
Key Factors & Differentiators:
 Construction duration
 Duration of traffic impact
 Night work



Moving Forward

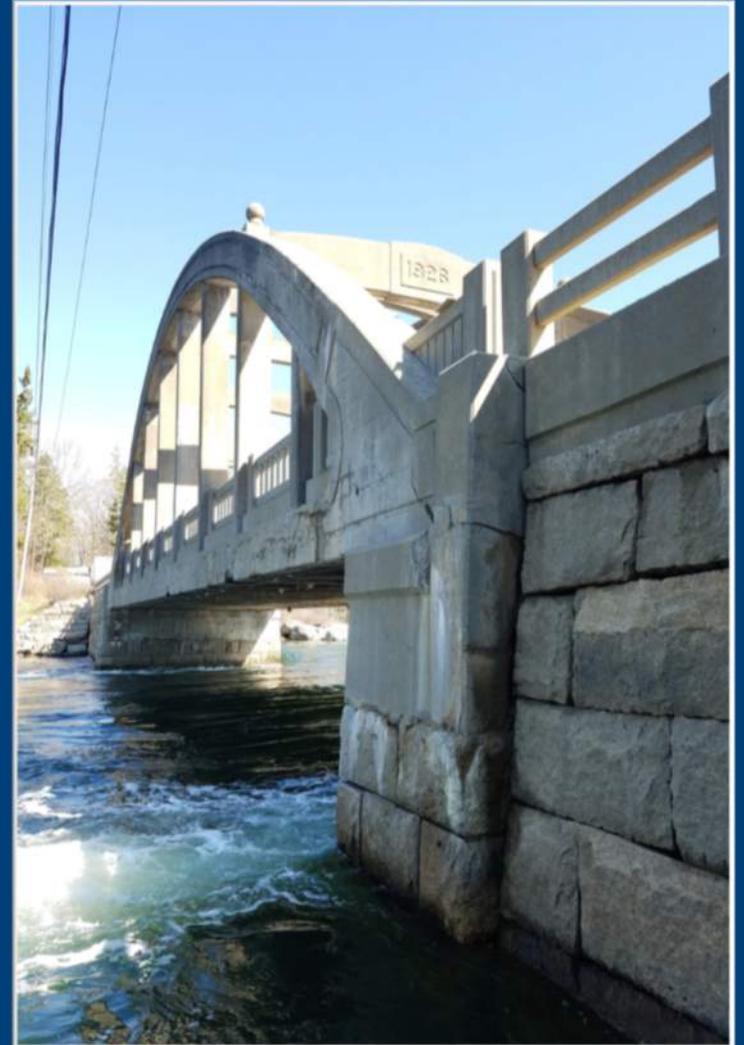
Where do we go from here?

1. Public comments associated with the selection of a preferred alternative will be received and reviewed until September 29, 2018.
2. Public comments related to the design of the selected alternative will continue to be received and reviewed during the design process.
3. The Department will review public comments received with the Bridge Advisory Committee in October and may update the design matrix as needed.
4. The Department will select a preferred alternative from those listed on the design matrix.
5. Design will likely begin in the Winter 2018/2019.



Opportunities for Public Comment / Input

- Bridge Advisory Committee meetings are open to the public. Meeting dates are posted on the Town of Blue Hill website.
- Meeting minutes and presentation materials for Bridge Advisory Committee meetings are published on the Town of Blue Hill's website:
 - <https://www.townofbluehillmaine.org>
- Additional historic information can be found on the MaineDOT's website:
 - www1.maine.gov/mdot/env/documents/section_106/Blue_Hill_17712_00_Draft_Determination_of_Effects.pdf
- Town of Blue Hill website has a link to MaineDOT's website where electronic comments can be submitted directly to the Department of Transportation.



Community Discussion



Integrity - Competence - Service