



Local Concept Development Study for
MLK Avenue Bridge Over the Whippany River
Town of Morristown, Morris County

Final Comparison of Alternatives Matrix

September 5, 2019

Alternatives	PPA																	
	1: No Build	2: Rehabilitation	3: Bridge Replacement (6' Sidewalks)			4: Bridge Replacement (6' & 8' Sidewalks)			5: Bridge Replacement (5' Sidewalks)			6: Bridge Replacement (5' Sidewalks with Curb Extensions)			7: Bridge Replacement (6' Sidewalks with Curb Extensions)		7: Bridge Replacement (6' Sidewalks with Curb Extensions)	
			A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	
Purpose & Need	1	Y/N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Controlling Substandard Design Elements Improved																		
Stopping Sight Distance at Coal Ave Intersection	2	Y/N/NC	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	
Stopping Sight Distance at Flagler St Intersection	3	Y/N/NC	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	No Change	
Multimodal & System Linkage																		
Pedestrian compatible	4	Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Bicycle compatible	5	Y/N	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	Y (Sharrows)	
Environmental																		
Potential Fill in the Floodplain	6	Y/N	N	N	N	N	N	Y	N	N	Y	N	N	Y	N	N	Y	
Hydraulic Opening Impacts	7	Y/N	N	N	There is no impact for option A and B and the water surface elevation rise for option C is negligible (0.06 ft) for the FHADF			There is no impact for option A and B and the water surface elevation rise for option C is negligible (0.05 ft) for the FHADF			There is no impact for option A and B and the water surface elevation rise for option C is negligible (0.05 ft) for the FHADF			There is no impact for option A and B and the water surface elevation rise for option C is negligible (0.05 ft) for the FHADF			There is no impact for option A and B and the water surface elevation rise for option C is negligible (0.05 ft) for the FHADF	
Open Water Impacts / Wetland Impacts	8	# of acres	Wetlands: 0 Open Waters: 0.051	Wetlands: 0 Open Waters: 0.051	Wetlands: 0 Open Waters: 0.051			Wetlands: 0 Open Waters: 0.051			Wetlands: 0 Open Waters: 0.051			Wetlands: 0 Open Waters: 0.051			Wetlands: 0 Open Waters: 0.051	
Riparian Zone Impacts	9	# of acres	0	0	0.018			0.016			0.018			0.018			0.018	
Hazardous Waste/Contaminated Sites Impacts	10	Y/N	N	Y	Y			Y			Y			Y			Y	
Federal/State T&E Species Impacted	11	Y/N	N	Y	Y			Y			Y			Y			Y	
Air Quality & Noise Impacts	12	Y/N	N	N	N			N			N			N			N	
Cultural Resources Affected	13	Y/N	0	0	N			N			N			N			N	
Net New Impervious Surface	14	# of acres	0	0	0.03			0			0			0			0	
Area of Disturbance	15	# of acres	0	0	0.6			0.6			0.6			0.6			0.6	
SWM Compliance Required	16	Y/N	N	N	N			N			N			N			N	
Roadway Overtopping - (Flood Event year)	17	Y (yr) / N	Y (10)	Y (10)	Y (10)			Y (10)			Y (10)			Y (10)			Y (10)	
Rights-of-Way																		
Full Residential Property Acquisition	17	# Impacted	0	0	0			0			0			0			0	
Partial Residential Property Acquisition	18	# Impacted	0	0	0			0			0			0			0	
Full Commercial Property Acquisition	19	# Impacted	0	0	0			0			0			0			0	
Partial Commercial Property Acquisition	20	# Impacted	0	0	0			0			0			0			0	
Municipal Property Acquisition	21	# Impacted	0	0	2			0			0			0			0	
Square Footage to be Acquired	22	Square Feet	0	0	530			0			0			0			0	
Potential Access Impacts	23	# Impacted	0	0	0			0			0			0			0	
Easement Impacts in Park Resources (Temporary)	24	# Impacted	0	1	1			1			1			1			1	
Easement Impacts in Park Resources (Permanent)	25	# Impacted	0	0	0			0			0			0			0	
Construction Duration and Cost																		
Construction Duration	26	months	0	8	24			24			24			24			24	
Detour Required/Length	27	Y/N, miles	0	N	Y, 0.3			Y, 0.3			Y, 0.3			Y, 0.3			Y, 0.3	
Total Time of Anticipated Bridge Closure	28	months	0	N/A	12			12			12			12			12	
Construction Cost	29	\$	\$0	\$4,041,421	\$7,200,000	\$7,300,000	\$7,300,000	\$6,400,000	\$6,500,000	\$6,500,000	\$6,400,000	\$6,500,000	\$6,500,000	\$6,400,000	\$6,500,000	\$6,500,000	\$6,500,000	\$6,500,000
Utility Relocation Cost	30	\$	\$0	\$1,600,000	\$1,800,000			\$1,800,000			\$1,800,000			\$1,800,000			\$1,800,000	
Right of Way Cost	31	\$	\$0	\$0	\$160,000			\$100,000			\$100,000			\$100,000			\$100,000	
Maintenance & Operation Cost	32	\$/year	\$500,000	\$0	\$0			\$0			\$0			\$0			\$0	
Total Construction Cost (Year 2025)	33	\$	N/A	\$5,641,421	\$9,200,000	\$9,300,000	\$9,300,000	\$8,300,000	\$8,400,000	\$8,400,000	\$8,300,000	\$8,400,000	\$8,400,000	\$8,300,000	\$8,400,000	\$8,400,000	\$8,400,000	\$8,400,000
Future Costs (bridge maintenance)	34	\$	N/A	\$8,200,000	\$900,000	\$900,000	\$500,000	\$700,000	\$700,000	\$400,000	\$700,000	\$700,000	\$400,000	\$700,000	\$700,000	\$400,000	\$700,000	\$400,000
100-Yr Life Cycle Cost (present value)	35	\$	N/A	\$12,241,421	\$10,100,000	\$10,200,000	\$9,800,000	\$9,000,000	\$9,100,000	\$8,800,000	\$9,000,000	\$9,100,000	\$8,800,000	\$9,000,000	\$9,100,000	\$8,800,000	\$9,000,000	\$8,800,000

Notes:

Potential Fill in the Floodplain: Portions of the new deck will be located below the regulated Flood Hazard Area.
 Hydraulic Opening Impacts: No rise will be demonstrated.
 Open Water and Wetland Impacts: Based on available geospatial data and field reconnaissance, fringing wetlands are not likely present. Wetland delineation is recommended during PE to confirm the absence of wetlands. Impacts vary based on the proposed abutment and barrel dimensions and does not include temporary impacts from construction access.
 Federal/State T&E Species Impacted: The proposed piers and abutments have an assumed 5ft offset from the existing bridge piers and abutments. It is assumed the proposed pier for Option C for all alternatives are within the Open Water Impacts footprint of the existing bridge demolition. Tree clearing restrictions may be imposed between April 15 and September 30; In-water construction timing restrictions may be imposed between May 1 and June 30.
 Future Costs: Alternative 2 uses the Total Construction Cost of Alternative 7A for the future bridge cost (25 years in the future).
 Detours: Short-term & overnight detours may be required for Alternative 2 to facilitate a limited number of construction activities.
 Maintenance & Operation Cost: Assumes a full bridge replacement will be necessary in 10 years.
 Temporary Pedestrian Bridge and Detour: Construction costs for Alternatives 3-7 include temporary Acrow pedestrian bridge. Approximate length of pedestrian detour is 0.3 miles.

Legend:

Stopping Sight Distance: The minimum distance a driver must be able to see objects clearly in order to have room to stop and avoid a collision.
 Riparian Zone: Lands that occur along waterbodies.
 FHADF: Flood Hazard Area Design Flood
 Alternative Option A, B, C: Option A: Single-Span Prestressed Superstructure, B: Single-Span (Steel) with Arch Façade, C: Three Barrel Arch
 Utility Relocation Cost: Note TBD

