



Local Concept Development Study for
 East Anderson Street/Cedar Lane Bridge Over the Hackensack River
 City of Hackensack and Township of Teaneck, Bergen County

Final Comparison of Alternatives Matrix

September 5, 2019

Alternatives Sub-Alternative	1: No Build		2: Rehabilitation		3: Bridge Replacement (8' Shoulders)			4: Bridge Replacement (5' Shoulders, 11' Striped Median)			5: Bridge Replacement (8' Shoulders, 11' Striped Median)	
					A (3-Span Steel)	B1 (4-Span Steel)	B2 (4-Span Concrete)	A (3-Span Steel)	B1 (4-Span Steel)	B2 (4-Span Concrete)	A (3-Span Steel)	B1 (4-Span Steel)
Purpose & Need 1	Y/N	N	N			Y			Y			Y
Controlling Substandard Design Elements Improved												
Structural Capacity 2	Y/N	N	Y			Y			Y			Y
Cross Slope 3	Y/N	N	Y			Y			Y			Y
Multimodal & System Linkage												
Pedestrian compatible 4	Y/N	Y	Y			Y			Y			Y
Bicycle compatible 5	Y/N	N	N			Y			N			Y
Environmental												
Potential Fill in the Floodplain 6	Y/N	N	N			Y			Y			Y
Hydraulic Opening Impacts 7	Y/N	No adverse impact. Water surface elevation rise is negligible: 0.0.	No adverse impact. Water surface elevation rise is negligible: 0.0.	No adverse impact. Water surface elevation rise is negligible: 0.02 ft for three-span options.	No adverse impact. Water surface elevation rise is negligible: 0.03 ft for 4-span option.	No adverse impact. Water surface elevation rise is negligible: 0.03 ft for 4-span option.	No adverse impact. Water surface elevation rise is negligible: 0.02 ft for 3-span option.	No adverse impact. Water surface elevation rise is negligible: 0.03 ft for 4-span option.	No adverse impact. Water surface elevation rise is negligible: 0.03 ft for 4-span option.	No adverse impact. Water surface elevation rise is negligible: 0.02 ft for 3-span option.	No adverse impact. Water surface elevation rise is negligible: 0.02 ft for 3-span option.	No adverse impact. Water surface elevation rise is negligible: 0.03 ft for 4-span option.
Wetland and Open Water Impacts 8	# of acres	Wetlands: 0 Open Waters: 0	Wetlands: 0 Open Waters: 0	Wetlands: 0 Open Waters: 0.018	Wetlands: 0 Open Waters: 0.027	Wetlands: 0 Open Waters: 0.027	Wetlands: 0 Open Waters: 0.018	Wetlands: 0 Open Waters: 0.027	Wetlands: 0 Open Waters: 0.027	Wetlands: 0 Open Waters: 0.027	Wetlands: 0 Open Waters: 0.018	Wetlands: 0 Open Waters: 0.027
Riparian Zone Impacts 9	# of acres	0	0	0.118	0.127	0.127	0.125	0.134	0.134	0.134	0.203	0.213
Hazardous Waste/Contaminated Sites Impacts 10	Y/N	N	Y		Y			Y			Y	
Federal/State T&E Species Impacted 11	Y/N	N	Y		Y			Y			Y	
Air Quality & Noise Impacts 12	Y/N	N	N		N			N			N	
Cultural Resources Affected 13	# Affected	0	0		0			0			0	
Net New Impervious Surface 14	# of acres	0	0		0.09			0.11			0.17	
Area of Disturbance 15	# of acres	0	0	0.93	0.96	0.96	0.93	0.96	0.96	1.06	1.10	
SWM Compliance Required 16	Y/N	N	N		N			N			See Notes - SWM Compliance	
Rights-of-Way												
Full Residential Property Acquisition 17	# Impacted	0	0		0			0			0	
Partial Residential Property Acquisition 18	# Impacted	0	0		0			0			0	
Full Commercial Property Acquisition 19	# Impacted	0	0		0			0			0	
Partial Commercial Property Acquisition 20	# Impacted	0	0		0			0			0	
Municipal Property Acquisition 21	# Impacted	0	0		0			0			1	
Number of Acres to be Acquired 22	# of acres	0	0		0			0			0.03	
Access Impacts 23	# Impacted	0	1		2			2			2	
Easement Impacts in Park Resources (Temporary) 24	# Impacted	0	1		2			2			2	
Easement Impacts in Park Resources (Permanent) 25	# Impacted	0	0		0			0			1	
NJDEP Tidelands License Impacts (Temporary) 26	# Impacted	0	1		1			1			1	
NJDEP Riparian Grant Impacts (Permanent) 27	# Impacted	0	0		0			0			1	
Construction Duration and Cost												
Construction Duration 28	months	0	12		24			24			24	
Detour Required/Length 29	Y/N, miles	N	N		N			N			N	
Total Time of Anticipated Bridge Closure 30	months	N/A	N/A		N/A			N/A			N/A	
Construction Cost 31	\$	\$0	\$13,900,000	\$35,500,000	\$36,600,000	\$33,700,000	\$37,500,000	\$38,700,000	\$35,600,000	\$40,200,000	\$41,400,000	\$38,100,000
Utility Relocation Cost 32	\$	\$0	\$1,800,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
Right of Way Cost 33	\$	\$0	\$0	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$180,000	\$180,000
Maintenance & Operation Cost 34	\$/year	\$750,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Construction Cost (Year 2025) 35	\$	N/A	\$13,900,000	\$35,570,000	\$36,670,000	\$33,770,000	\$37,570,000	\$38,770,000	\$35,670,000	\$40,380,000	\$41,580,000	\$38,280,000
Future Costs (bridge only) 36	\$	N/A	\$31,800,000	\$5,738,000	\$5,728,000	\$6,537,000	\$6,100,000	\$6,090,000	\$6,950,000	\$6,534,000	\$6,524,000	\$7,445,000
100-Yr Life Cycle Cost (present value) 37	\$	N/A	\$45,700,000	\$41,308,000	\$42,398,000	\$40,307,000	\$43,670,000	\$44,860,000	\$42,620,000	\$46,914,000	\$48,104,000	\$45,725,000

PPA
5: Bridge Replacement (8' Shoulders, 11' Striped Median) B2 (4-Span Concrete)
Y
Y
Y
Y
Y
Y
No adverse impact. Water surface elevation rise is negligible: 0.03 ft for 4-span option.
Wetlands: 0 Open Waters: 0.027
0.213
Y
Y
N
0
0.17
1.10
See Notes - SWM Compliance
0
0
0
0
1
0.03
2
2
1
1
1
24
N
N/A
\$38,100,000
\$2,000,000
\$180,000
\$0
\$38,280,000
\$7,445,000
\$45,725,000

Notes:
 Hydraulic Opening Impacts: No rise will be demonstrated.
 Wetland and Open Water 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. The impact area is based on the proposed abutment and pier dimensions and does not include temporary impacts from construction access.
 Federal/State T&E Species Impacted: Tree clearing restrictions may be imposed between April 15 and September 30; In-water construction timing restrictions may be imposed between April 1 and June 30.
 Cultural Resources Affected: Currently, the bridge is not considered historic, but will be at least 50 years old at the time of construction. Consultation with NJSHPO regarding the bridge's potential eligibility is recommended as the project advances.
 SWM Compliance: Impervious area is less than 0.25 acres and will not trigger stormwater quality rules. Areas where Limit Of Disturbance (LOD)>1 acre are likely to comply with NJDEP Flood Hazard Area Individual Permit rules for de minimus stormwater impact. If SWM rules are triggered, location for a small BMP will be investigated.
 Future Costs: Alternative 2 uses the Total Construction Cost of Alternative 5B2 for the future bridge cost (25 years in the future).
 Detours: Short-term & overnight detours may be required for all alternatives to facilitate a limited number of construction activities.
 Maintenance & Operation Cost: Assumes a full bridge replacement will be necessary in 15 years. Bridge would be maintained as is with 1 lane in each direction.

Legend:
 Sub-Alternative A: 3-Span using Steel Beams
 Sub-Alternative B1: 4-Span using Steel Beams
 Sub-Alternative B2: 4-Span using Prestressed Concrete Beams
 Cross Slope: The horizontal slope of the roadway from the center to the outer edge. Enables drainage from the travel lanes.
 Riparian Zone: Lands that occur along waterbodies.