


ALTERNATIVES COMPARISON MATRIX

**Local Concept Development Study for Columbia Turnpike Bridge over the Black Brook
Borough of Florham Park, Morris County, NJ**

	No Build	Bridge Rehabilitation	Replace In-Kind	Staging Concept 1 New Bridge on Existing Alignment				Staging Concept 2 New Bridge on Alignment shifted to South				Staging Concept 3 New Bridge on Alignment shift to North				Staging Concept 4 New Bridge on Minor Alignment shift to South		
				Alternate 1-A	Alternate 1-B	Alternate 1-C	Alternate 1-D	Alternate 2-A	Alternate 2-B	Alternate 2-C	Alternate 2-D	Alternate 3-A	Alternate 3-B	Alternate 3-C	Alternate 3-D	Alternate 4-B	Alternate 4-C	Preliminary Preferred Alternative Alternate 4-D
Alternative Labeling: Staging Concept - Superstructure Type Prestressed NEXT Beams - A Steel Beams - B Prestressed Concrete Spread Box Beams - C Prestressed Concrete Adjacent Box Beams - D Superstructure Types	Concrete encased multi-stringer w/ Steel Stringer Widening	Concrete encased multi-stringer w/ Steel Stringer Widening	Steel Multigirder	Prestressed NEXT Beams	Steel Beams	Prestressed Concrete Spread Box Beams	Prestressed Concrete Adjacent Box Beams	Prestressed NEXT Beams	Steel Beams	Prestressed Concrete Spread Box Beams	Prestressed Concrete Adjacent Box Beams	Prestressed NEXT Beams	Steel Beams	Prestressed Concrete Spread Box Beams	Prestressed Concrete Adjacent Box Beams	Steel Beams	Prestressed Concrete Spread Box Beams	Prestressed Concrete Adjacent Box Beams
Criteria																		
Meets Project Purpose and Need	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maintenance and Protection of Traffic																		
Number of lanes provided during construction	4	2	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Is Detour Required?/Length of detour	No	Yes, Partial	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Roadway																		
Controlling Substandard Design Elements Remaining	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Improves Lane Widths	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improves Shoulder Widths	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improves Stopping Sight Distances at MP 15.38	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Profile Raise at the Bridge	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Traffic Operations & Bicycle/Pedestrian																		
Accommodates design year traffic volumes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle/Pedestrian compatibility provided with connectivity to approach roadways	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sidewalks provided	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Construction Duration																		
Duration (Months)	-	9	15	22	22	22	22	22	19	19	19	22	19	19	19	22	22	22
Stages Required	-	2	1	5	5	5	5	4	3	3	3	4	3	3	3	5	5	5
Right of Way Impacts																		
Required ROW (Acres)	-	0	0	0.09	0.09	0.09	0.09	0.27	0.27	0.27	0.27	0.18	0.18	0.18	0.18	0.13	0.13	0.13
Number of Temporary construction easements	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of partial property acquisitions	-	0	0	3	3	3	3	1	1	1	1	2	2	2	2	3	3	3
Number of entire property acquisitions	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Access																		
# of Access Impacts to adjacent properties during construction	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
# of Permanent Access Impacts to adjacent properties	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Structural Design																		
Accelerated Bridge Construction Methodologies	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Bridge opening meets design year storm (H&H)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Seismic Design addressed	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bridge Approach Safety Upgraded	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
75 yr. Bridge Life Cycle	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wildlife Passage Compatible	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Environmental Impacts																		
Green Acres & Section 4(f)	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Total Wetlands Impacts (acres)	0	Yes	Yes	0.20	0.20	0.20	0.20	0.40	0.40	0.40	0.40	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Threatened and Endangered Species Habitat	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Floodplain (acres)	No	Yes	Yes	1.16	1.16	1.16	1.16	1.81	1.81	1.81	1.81	1.70	1.70	1.70	1.70	1.25	1.25	1.25
Riparian Zone (acres)	No	Yes	Yes	0.15	0.15	0.15	0.15	0.27	0.27	0.27	0.27	0.14	0.14	0.14	0.14	0.17	0.17	0.17
Historic Resources (# of sites)	No	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Hazardous Waste/Contaminated Sites	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Seasonal restrictions	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Utilities																		
Anticipated relocations	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Costs																		
Construction Costs	\$ -	\$ 437,875	\$ 875,750	\$ 2,342,474	\$ 2,422,474	\$ 2,342,474	\$ 2,422,474	\$ 2,827,792	\$ 2,907,792	\$ 2,827,792	\$ 2,907,792	\$ 2,584,680	\$ 2,664,680	\$ 2,584,680	\$ 2,664,680	\$ 2,408,638	\$ 2,328,638	\$ 2,408,638
Estimated Utility Relocation Cost	\$ -	\$ 250,000	\$ 250,000	\$ 2,775,000	\$ 2,775,000	\$ 2,775,000	\$ 2,775,000	\$ 1,250,000	\$ 1,250,000	\$ 1,250,000	\$ 1,250,000	\$ 2,775,000	\$ 2,775,000	\$ 2,775,000	\$ 2,775,000	\$ 1,275,000	\$ 1,275,000	\$ 1,275,000
Estimated Right of Way Cost	\$ -	\$ -	\$ -	\$ 7,585	\$ 7,585	\$ 7,585	\$ 7,585	\$ 11,909	\$ 11,909	\$ 11,909	\$ 11,909	\$ 16,697	\$ 16,697	\$ 16,697	\$ 16,697	\$ 5,888	\$ 5,888	\$ 5,888
Life Cycle Cost (Present Value)	\$ -	\$ 246,138	\$ 246,138	\$ 154,397	\$ 246,138	\$ 154,397	\$ 154,397	\$ 154,397	\$ 246,138	\$ 246,138	\$ 154,397	\$ 154,397	\$ 246,138	\$ 246,138	\$ 154,397	\$ 246,138	\$ 154,397	\$ 154,397
Detour Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Project Cost	\$0.00	\$934,013.00	\$1,371,888.00	\$5,279,456.00	\$5,451,197.00	\$5,279,456.00	\$5,359,456.00	\$4,244,098.00	\$4,415,839.00	\$4,244,098.00	\$4,324,098.00	\$5,530,774.00	\$5,702,515.00	\$5,530,774.00	\$5,610,774.00	\$3,935,664.00	\$3,763,923.00	\$3,843,923.00