

COMPARISON OF ALTERNATIVES

Concept Development Study for Monmouth County Bridge S-32 on Rumson Road over the Shrewsbury River

Borough of Rumson and Borough of Sea Bright, Monmouth County, NJ

Comparison Category/Issue	No Build	Major Rehabilitation	Concept 1A Existing Alignment with Detour	Concept 1B Existing Alignment with No Detour	Concept 1C Existing Alignment with 1920 Temp. Bridge	Concept 2 North Alignment Cul-de-Sac	Concept 3A South Alignment, Staged Construction	Concept 3B South Alignment Cul-de-Sac	Concept 3C South Alignment Roundabout	Concept 3D South Alignment, Pedestrian Improvements	Concept 3E Two Stage Construction Alignment to South	Concept 3F One Stage Construction Alignment to South	Concept 4 1920 Alignment/ Keep Existing Bridge	Concept 5 High Level Fixed Span
Meets Project Purpose and Need	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maintenance and Protection of Traffic														
Temporary Bridge Required	N/A	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No
Number of lanes provided during construction	N/A	1 Lane in each direction	0 -Detour	1 Lane in each direction	1 Lane in each direction	3 - Existing Bridge Maintained	1 Lane in each direction	1 Lane in each direction	3 -Existing Bridge Maintained	3- Existing Bridge Maintained	1 Lane in each direction	3- Existing Bridge Maintained	3- Existing Bridge Maintained	3- Existing Bridge Maintained
Detour Required/Length	N/A	No	Yes - 10 miles	No	No	No	No	No	No	No	No	No	No	No
Controlling Substandard Design Elements Remaining														
Minimum Horizontal Curve Radius (Rumson Road)	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	No	No
Vertical Stopping Sight Distance (Rumson Road)	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Intersection Stopping Sight Distance at Ward Ave/Rumson Road	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Outside Shoulder Width - Rt. 36 NB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
Outside Shoulder Width - Rt. 36 SB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No
Construction Duration														
Duration (Years)	N/A	3 to 3.5	2 to 2.5	3 to 3.5	3 to 3.5	2 to 2.5	3 to 3.5	3 to 3.5	2 to 2.5	2 to 2.5	3 to 3.5	2 to 2.5	2 to 2.5	4.0
Traffic Operations & Bicycle/Pedestrian														
Improved Level of Service at Route 36/Rumson Road intersection	No	No	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**	Yes**
Sidewalks provided with connectivity to approach roadways	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bicycle compatibility provided with connectivity to approach roadways	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Conflicts with marine and vehicular traffic reduced	No	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*
Right of Way Impacts														
Required ROW (in fee - Acres)	N/A	0	0.037	0.642	2.148	1.382	0.627	1.946	2.714	0.663	0.750	0.750	1.997	4.26+
Number of Temporary construction easements	N/A	5	5	4	10	8	4	8	8	6	8	8	10	10
Number of partial residential property acquisitions	N/A	0	0	0	0	5	0	1	1	1	1	1	1	3+
Number of entire residential property acquisitions	N/A	0	0	0	0	1	0	1	1	0	0	0	2	1
Number of partial commercial property acquisitions	N/A	0	2	1	1	2	1	5	5	1	3	3	3	1
Number of entire commercial property acquisitions	N/A	0	0	1	5	0	1	1	1	1	1	1	4	8
4 (f) Parkland Acquisition /Green Acres- Permanent (acres)	N/A	0	0.036	0.243	0.036	0.650	0.195	0.387	0.529	0.843	0.346	0.510	0.385	0.455
Access Impacts														
Potential Access Impacts	N/A	0	0	3	3	7	3	6	12	4	6	6	10	16
Structural Design														
Bridge Scour addressed	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Seismic Design addressed	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mechanical and electrical components upgraded	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A
Environmental Impacts														
Floodplain (acres)	N/A	0	1.86	1.86	1.86	2.62	2.07	3.14	3.74	2.13	2.11	1.81	2.80	4.77
Riparian Zone (acres)	N/A	0	0.23	0.23	0.23	0.60	0.37	0.47	0.70	0.63	0.39	0.34	0.50	0.43
Total Wetland and State Open Water Permanent Impacts (acres)	N/A	2.23	0.93	0.93	0.93	0.94	0.94	0.93	0.96	0.95	0.93	0.78	0.68	1.23
Historic Resources (# of sites)	N/A	0	4	4	4	7	4	7	7	6	6	4	8	9
4(f) Parkland Acquisition/Green Acres - Permanent (acres)	N/A	0	0	0	0.004	0.07	0.085	0.205	0.20	0.085	0.174	0.222	0	0.430
Hazardous Waste/Contaminated Sites	N/A	0	2	2	2	1	2	2	2	2	2	1	3	2
Threatened and Endangered Species Habitat	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Total Construction Cost (\$ 2012)	N/A	\$48 M	\$51 M	\$61 M	\$61 M	\$53 M	\$64 M	\$64 M	\$ 54 M	\$ 52 M	\$64 M	\$ 53 M	\$ 59 M	\$ 108 M
Annual Maintenance and Operations Cost	N/A	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$0.6 M	\$1.2 M	\$25 K
Structure Life Cycle Cost (Present Value - 75 yr period)	N/A	\$73 M	\$73 M	\$83 M	\$84 M	\$73 M	\$85 M	\$85 M	\$73 M	\$73 M	\$85 M	\$73 M	\$110 M	\$117 M
Right of Way Cost	N/A	\$0.2	\$0.2 M	\$3.9 M	\$12.9 M	\$7.9 M	\$3.8 M	\$11.6 M	\$16.2 M	\$4.0 M	\$4.4 M	\$4.4 M	\$11.3 M	\$25.2 M +
Total Cost	N/A	\$48 M	\$51 M	\$65 M	\$74 M	\$61 M	\$68 M	\$76 M	\$70 M	\$56 M	\$69 M	\$58 M	\$70 M	\$133 M +

* Conflicts will be reduced since the proposed moveable bridge will operate more efficiently

** Assumes removal of right turn on red restrictions at Route 36 and Rumson Road intersection