

## BHJ Alternatives Evaluation Matrix

November 18, 2002

MEASURES		Vets only	Vets, New South of Wellsburg		Vets, Washington St.		Vets, new Ft. Steuben		All 4 Bridges		Vets, New Southern Bridge, Washington		Vets, New Southern Bridge, New Ft. Steuben		Vets, Washington, New Ft. Steuben	
		Baseline	#2		#5		#6		#7		#8		#9		#10	
1	Potential Land Use Impacts		Ohio	WV	Ohio	WV	Ohio	WV	Ohio	WV	Ohio	WV	Ohio	WV	Ohio	WV
	Total Number of Acres	0	3.01	3.31	4.50	4.10	0.00	0.00	7.51	7.41	7.51	7.41	3.01	3.31	4.50	4.10
	Residential Units	0	10	3	0	0	0	0	10	3	10	3	10	3	0	0
	Commercial Units	0	4	1	3	0	0	0	7	1	7	1	4	1	3	0
2	Potential Annual Accidents	3,951	3,902		3,923		3,950		3,892		3,897		3,907		3,923	
3	Potential for Improved Emergency Response Times	✓	✓✓✓✓✓		✓✓		✓✓		✓✓✓✓✓		✓✓✓✓✓		✓✓✓		✓✓	
4	Potential for Alternate River Crossings (Avoidance of Single Service Situations)	✓	✓✓✓✓✓		✓✓		✓✓		✓✓✓✓✓		✓✓✓✓✓		✓✓✓		✓✓	
5	Percent of System at each Level of Service.															
	LOS "A"	83%	83%		83%		83%		83%		83%		83%		83%	
	LOS "B"	8%	9%		9%		8%		9%		9%		9%		9%	
	LOS "C"	3%	4%		3%		3%		4%		4%		4%		4%	
	LOS "D"	4%	3%		3%		4%		3%		3%		3%		3%	
	LOS "E"	1%	1%		1%		1%		1%		1%		1%		1%	
	LOS "F"	0%	0%		0%		0%		0%		0%		0%		0%	
6	Vehicle hours of travel (VHT)	90900	87900		90200		90800		88016		88100		88800		90300	
7	Total Travel Time (Million Person Hours/Yr)	36.05	35.18		35.82		36.00		35.11		35.15		35.33		35.84	
8	Vehicle miles of travel (VMT)	2,799,000	2,774,000		2,778,000		2,795,000		2,764,000		2,770,000		2,775,000		2,774,000	
9	Ability to Maximize Accommodation of Heavy and Large Vehicles	✓✓✓	✓✓✓✓✓		✓✓✓✓✓		✓✓✓✓✓		✓✓✓✓✓		✓✓✓✓✓		✓✓✓✓✓		✓✓✓✓✓	
10	Capital costs (Millions) 2ln/4ln	0	\$43.8	\$51.48	\$40.03	\$46.83	\$31.0	\$32.0	\$114.81	\$130.33	\$83.83	\$98.31	\$74.78	\$83.50	\$71.01	\$78.85
11	Reduction in Total User Costs (1000\$/yr)	0	12,655		3,855		627		13,968		13,714		10,822		3,577	
12	Benefit Cost Ratio 2ln/4ln	0	4.43	3.77	1.48	1.26	0.31	0.30	1.86	1.64	2.51	2.14	2.22	1.99	0.77	0.70
13	Potential for Improved Access to Existing Industrial Sites	✓	✓✓✓✓✓		✓✓✓		✓✓		✓✓✓✓✓		✓✓✓✓✓		✓✓✓✓		✓✓✓	
14	Potential for Improved Access to Future Industrial Sites	✓	✓✓✓✓		✓✓		✓		✓✓✓✓✓		✓✓✓✓		✓✓		✓✓	
15	Average Travel Time, Selected Gateways to Selected River and Rail Ports.															
	<i>WV Gateways to OH River and Rail Ports</i>															
	SR27/SR844 to WP S Works River Port	36	17		31		36		17		17		17		32	
	US22 to WP S Works River Port	17	17		16		17		17		17		17		17	
	SR2 (south) to WP S Works River Port	41	17		36		41		17		17		17		37	
	SR27/SR844 to Warrenton River Term	51	25		46		51		25		25		25		47	
	US22 to Warrenton River Term	32	32		32		32		32		32		33		32	
	SR2 (south) to Warrenton River Term	56	24		51		56		24		24		24		52	
	SR27/SR844 to NS/W&LE RR Facility	37	16		32		37		16		16		16		33	
	US22 to NS/W&LE RR Facility	18	18		17		18		18		18		19		18	
	SR2 (south) to NS/W&LE RR Facility	42	15		37		42		15		15		15		38	
	<i>OH Gateways to WV River and Rail Ports</i>															
	US22 to Weirton I&C Water Port	25	25		25		21		21		25		21		21	
	SR 7 (south) to Weirton I&C Water Port	29	29		28		24		25		28		25		25	
	US22 to WP Coke Plant River Port	24	24		24		24		24		24		24		24	
	SR 7 (south) to WP Coke Plant River Port	28	22		23		28		23		23		23		23	
16	Technical Feasibility	✓✓✓✓✓	✓✓✓✓		✓✓✓		✓✓✓✓		✓✓✓✓		✓✓✓✓		✓✓✓		✓✓✓	
17	Fiscal Likelihood	✓✓✓✓	✓✓✓		✓✓✓		✓✓✓		✓		✓✓		✓✓		✓✓	
18	Probability to Minimize Potential Environmental Impacts	✓✓✓✓	✓✓✓		✓✓✓		✓✓✓✓		✓✓✓		✓✓✓		✓✓✓		✓✓✓	
19	Estimated vehicle emissions (ton/yr)															
	Hydro-Carbons (HC)	846	833		842		845		831		832		835		841	
	Carbon Monoxide (CO)	14,559	14,272		14,499		14,542		14,264		14,276		14,325		14,514	
	Nitrous Oxide (NOx)	1,443	1,428		1,433		1,440		1,422		1,426		1,427		1,430	
	PM10	57	56		57		57		56		56		56		56	

Notes: 1 - Qualitative rating with 5 ✓✓✓✓✓ being most desirable to 1✓ being the least desirable  
 2 - STEAM output is generated by using a fixed trip table (from Base case)