

Appendix G – Ranking Matrix

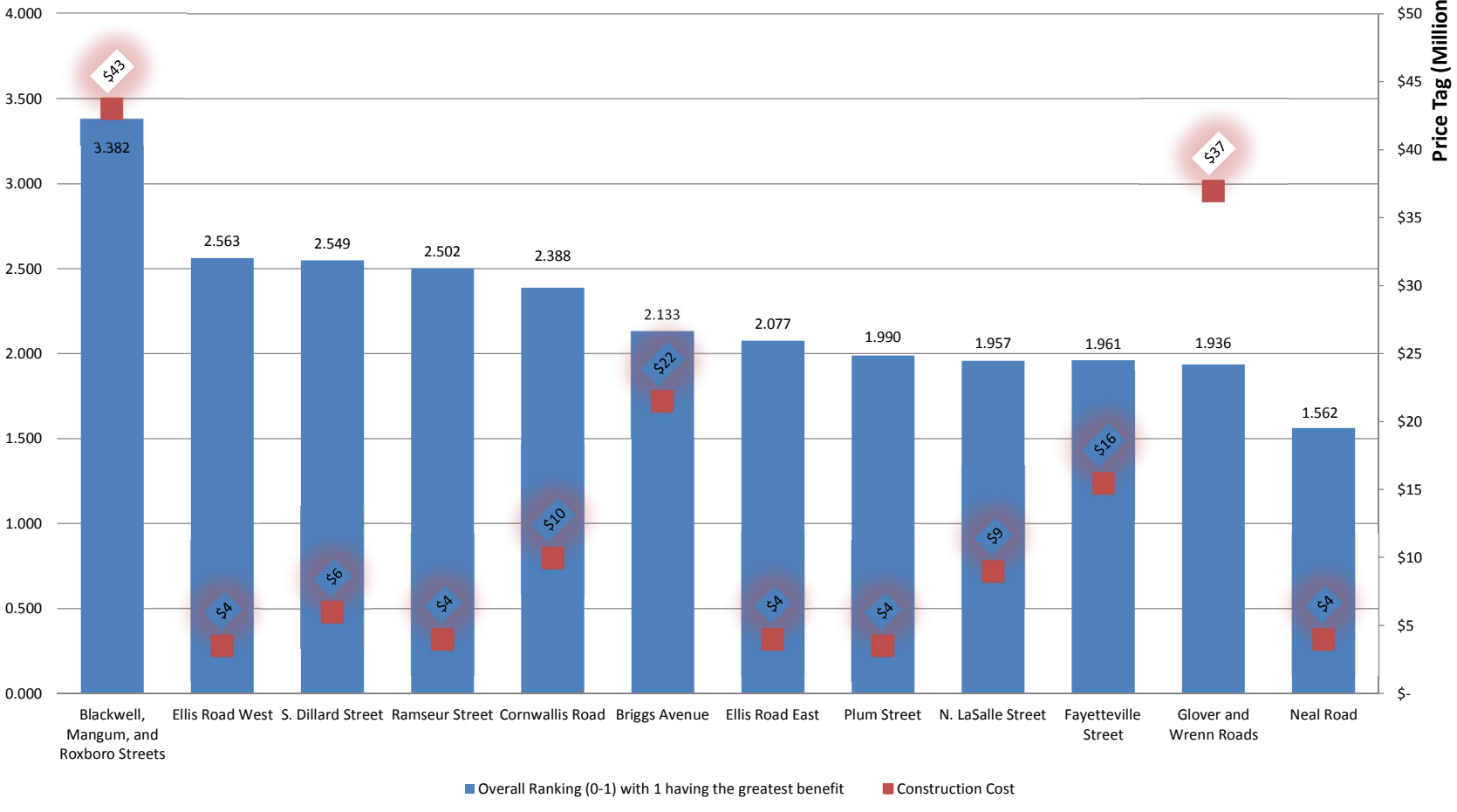
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City of Durham Traffic Separation Study
Project Ranking



Crossing Name	Index No.	Section	Alternatives	Summary and Ranking					
				Data Factors Normalized (0-1)	Environmental Factors Normalized (0-1)	Stakeholder Ranking Factors Normalized (0-1)	Combined Normalized Scores	Final Ranking	Estimated Construction Cost (2013 Dollars)
Blackwell, Mangum, and Roxboro Streets	8	Downtown	Grade Separation - Bridge Over Road	0.64	0.90	1.00	3.382	1	\$ 43,000,000
Ellis Road West	15	East	Grade Separation - Bridge Over Rail	0.43	0.68	0.82	2.563	2	\$ 3,500,000
S. Dillard Street	9	Downtown	Close Crossing (Construct Pedestrian Underpass)	0.26	0.68	0.98	2.549	3	\$ 6,000,000
Ramseur Street	12	Downtown	Close Crossing (Construct Pedestrian Underpass)	0.75	0.38	0.74	2.502	4	\$ 4,000,000
Cornwallis Road	18	East	Grade Separation - Bridge Over Rail	0.12	0.90	0.78	2.388	5	\$ 10,000,000
Briggs Avenue	14	Downtown	Grade Separation - Bridge Over Rail	0.00	1.00	0.62	2.133	6	\$ 21,500,000
Ellis Road East	17	East	Grade Separation - Bridge Over Rail	0.38	0.48	0.70	2.077	7	\$ 4,000,000
Plum Street	13	Downtown	Close Crossing (Construct Pedestrian Underpass)	0.52	0.30	0.66	1.990	8	\$ 3,500,000
N. LaSalle Street	3	West	Grade Separation - Bridge Over Road	0.18	0.53	0.76	1.957	9	\$ 9,000,000
Fayetteville Street	11	Downtown	Grade Separation - Bridge Over Rail and Ramseur	0.73	0.15	0.58	1.961	10	\$ 15,500,000
Glover and Wrenn Roads	16	East	Grade Separation - Bridge Over Rail at Glover Road/ Close Wrenn Road	0.33	0.38	0.74	1.936	11	\$ 37,000,000
Neal Road	1	West	Grade Separation - Bridge Over Rail	0.05	0.90	0.24	1.562	12	\$ 4,000,000

Durham TSS Overall Ranking of Long Term Crossing Improvements with Opinion of Probable Construction Cost

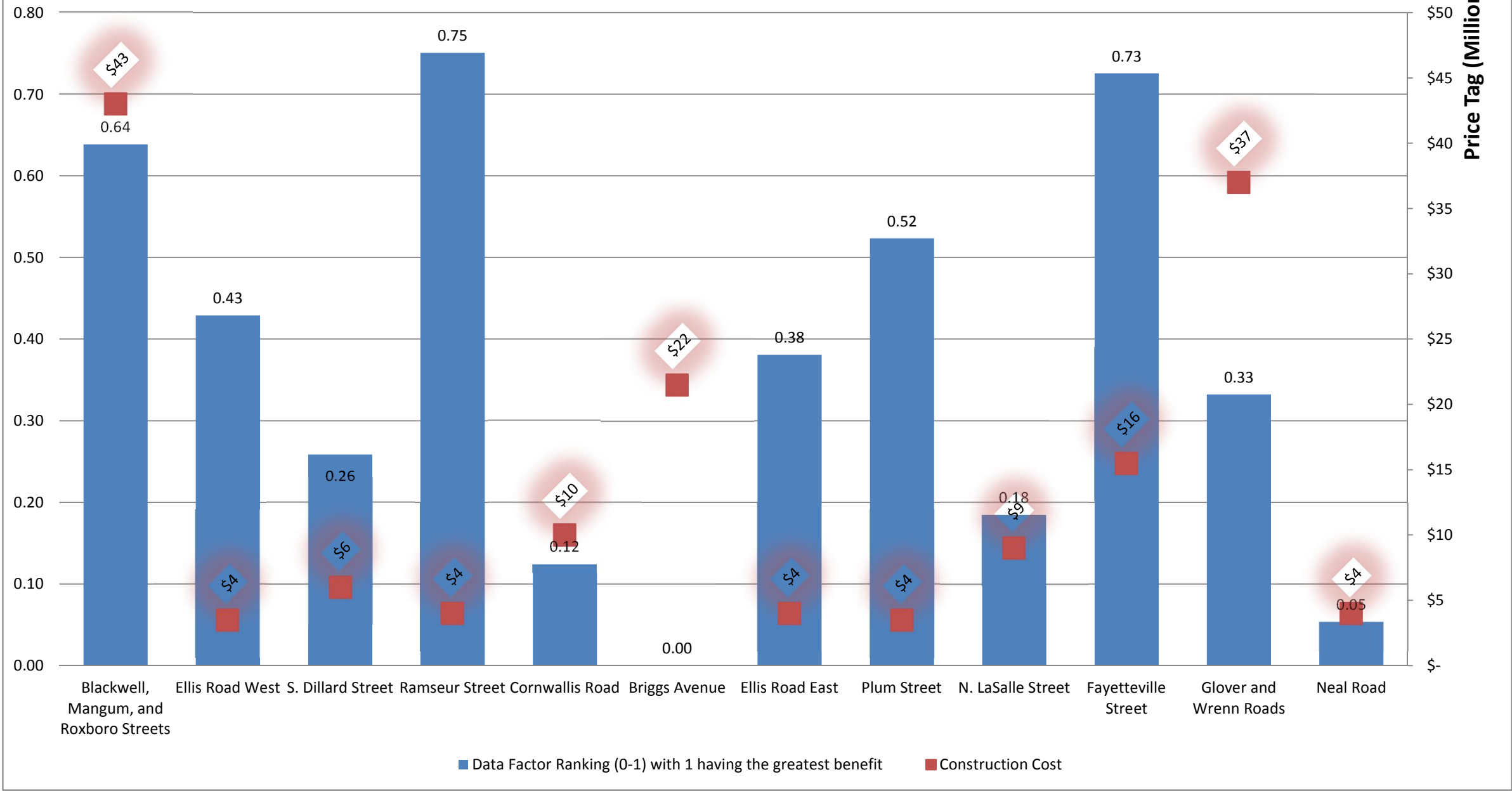


City of Durham Traffic Separation Study
Project Ranking



Crossing Name	Index No.	Section	Alternatives	Performance Measure						
				Data Factors						Total Data Factor Weighted Score
				Exposure Index	Benefit - Cost Ratio	Safety Benefit (Reduction in Accidents/Year)	Number of Crashes (NCDOT 20 Years)	Reduction in Auto Delay	Reduction in CO Emissions	
				Ranking Weight = 4.00%	Ranking Weight = 4.00%	Ranking Weight = 4.00%	Ranking Weight = 4.00%	Ranking Weight = 4.00%	Ranking Weight = 4.00%	
Value	Value	Value	Value	Value	Value					
Blackwell, Mangum, and Roxboro Streets	8	Downtown	Grade Separation - Bridge Over Road	1,693,200	0.3112	0.07482	0	2889.5	890.74	0.12
Ellis Road West	15	East	Grade Separation - Bridge Over Rail	520,800	0.5305	0.04972	2	328.9	102.745	0.08
S. Dillard Street	9	Downtown	Close Crossing (Construct Pedestrian Underpass)	215,800	-0.0590	0.02381	1	877.5	283.314	0.05
Ramseur Street	12	Downtown	Close Crossing (Construct Pedestrian Underpass)	249,000	1.8918	0.20797	2	100.4	322.97	0.14
Cornwallis Road	18	East	Grade Separation - Bridge Over Rail	331,800	0.1861	0.00818	0	499.0	153.279	0.02
Briggs Avenue	14	Downtown	Grade Separation - Bridge Over Rail	0	0.0000	0	0	0.0	0	0.00
Ellis Road East	17	East	Grade Separation - Bridge Over Rail	520,800	0.3366	0.01643	1	1316.9	421.179	0.07
Plum Street	13	Downtown	Close Crossing (Construct Pedestrian Underpass)	96,600	1.4401	0.10355	2	163.8	49.821	0.10
N. LaSalle Street	3	West	Grade Separation - Bridge Over Road	182,000	0.2016	0.00893	0	1117.6	346.179	0.03
Fayetteville Street	11	Downtown	Grade Separation - Bridge Over Rail and Ramseur	2,025,500	0.4426	0.01547	0	3739.2	1147	0.13
Glover and Wrenn Roads	16	East	Grade Separation - Bridge Over Rail at Glover Road/ Close Wrenn Road	113,400	0.3902	0.04142	2	92.1	28.6173	0.06
Neal Road	1	West	Grade Separation - Bridge Over Rail	51,800	0.1925	0.0056	0	173.2	53.1444	0.01

Durham TSS Data Factor Ranking of Long Term Crossing Improvements with Opinion of Probable Construction Cost

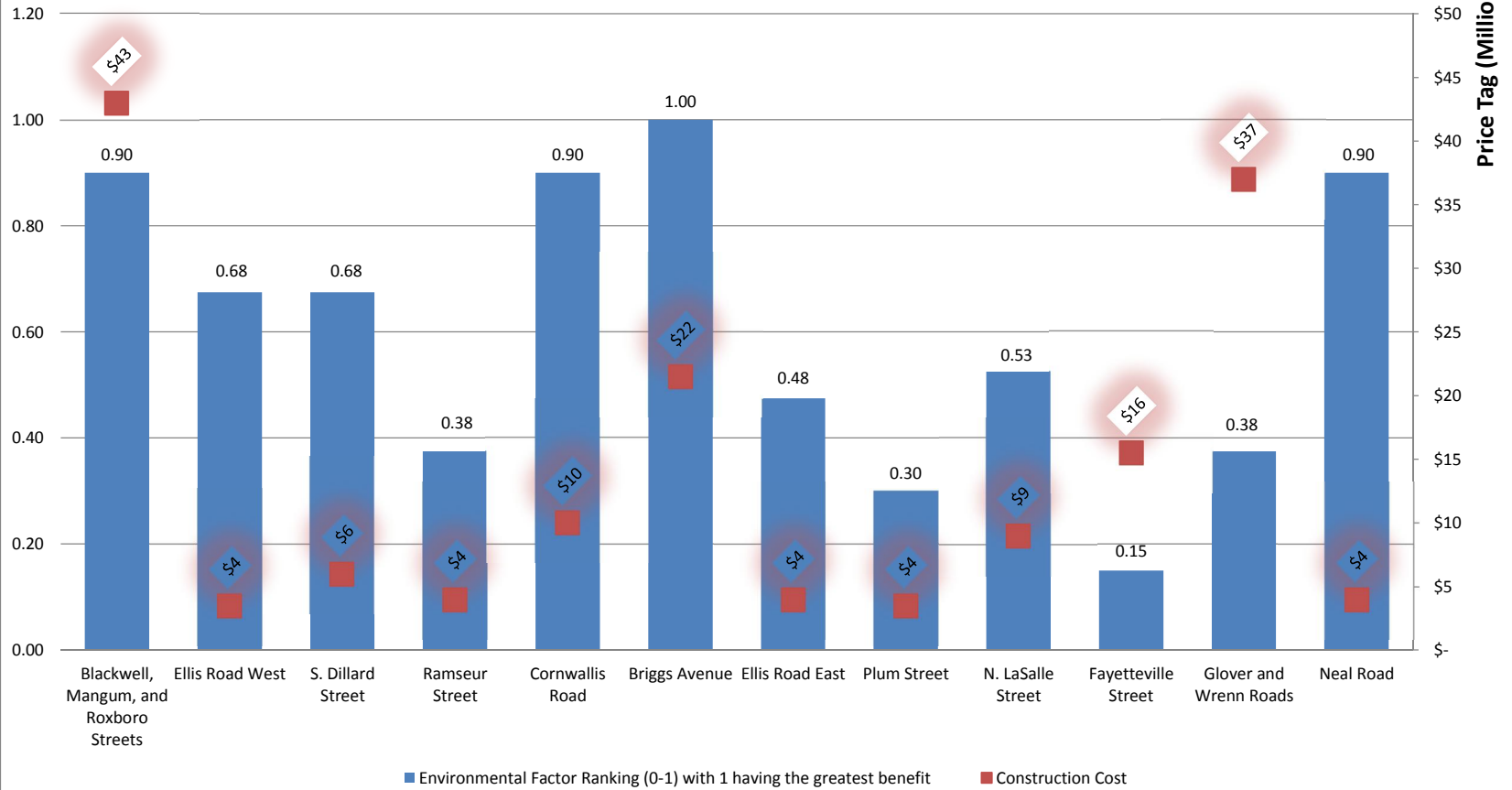


City of Durham Traffic Separation Study
Project Ranking



Crossing Name	Index No.	Section	Alternatives	Performance Measure						
				Environmental Factors					Total Weighted Environmental Factor Score	Proper Environmental Factor Ranking Score
				Potential Negative Impacts to Neighborhoods	Potential Negative Impacts to Properties	Potential Negative Impacts to Businesses	Potential Negative Impacts to Pedestrian / Bicycle Mobility	Negative Impacts to EMS Access		
				Ranking Weight = 6.00%	Ranking Weight = 6.00%	Ranking Weight = 6.00%	Ranking Weight = 6.00%	Ranking Weight = 6.00%		
Value	Value	Value	Value	Value						
Blackwell, Mangum, and Roxboro Streets	8	Downtown	Grade Separation - Bridge Over Road	0	2	2	2	0	0.36	0.64
Ellis Road West	15	East	Grade Separation - Bridge Over Rail	1	4	2	2	0	0.54	0.46
S. Dillard Street	9	Downtown	Close Crossing (Construct Pedestrian Underpass)	0	1	1	2	5	0.54	0.46
Ramseur Street	12	Downtown	Close Crossing (Construct Pedestrian Underpass)	4	1	1	2	5	0.78	0.22
Cornwallis Road	18	East	Grade Separation - Bridge Over Rail	2	2	0	2	0	0.36	0.64
Briggs Avenue	14	Downtown	Grade Separation - Bridge Over Rail	2	4	3	3	0	0.28	0.72
Ellis Road East	17	East	Grade Separation - Bridge Over Rail	0	2	0	3	0	0.70	0.30
Plum Street	13	Downtown	Close Crossing (Construct Pedestrian Underpass)	3	2	2	2	5	0.84	0.16
N. LaSalle Street	3	West	Grade Separation - Bridge Over Road	0	3	4	2	2	0.66	0.34
Fayetteville Street	11	Downtown	Grade Separation - Bridge Over Rail and Ramseur	0	5	5	3	3	0.96	0.04
Glover and Wrenn Roads	16	East	Grade Separation - Bridge Over Rail at Glover Road/ Close Wrenn Road	2	3	1	3	4	0.78	0.22
Neal Road	1	West	Grade Separation - Bridge Over Rail	1	2	0	3	0	0.36	0.64

Durham TSS Environmental Factor Ranking of Long Term Crossing Improvements with Opinion of Probable Construction Cost



City of Durham Traffic Separation Study
Project Ranking



Crossing Name	Index No.	Section	Alternatives	Performance Measure							Total Stakeholder Weighted Ranking Factor Score
				Stakeholder Ranking Factors							
				Located Correctly	Move up 1 Tier	Move up 2 Tiers	Move Down 1 Tier	Move Down 2 Tiers	No Opinion	Do Not Support	
				Ranking Weight = 8.33%	Ranking Weight = 8.33%	Ranking Weight = 8.33%	Ranking Weight = 8.33%	Ranking Weight = 8.33%	Not Included	Ranking Weight = 8.33%	
Value	Value	Value	Value	Value	Value	Value	Value				
Blackwell, Mangum, and Roxboro Streets	8	Downtown	Grade Separation - Bridge Over Road	13	0	0	0	0	0	(2)	2.75
Ellis Road West	15	East	Grade Separation - Bridge Over Rail	2	1	10	0	0	3	0	2.00
S. Dillard Street	9	Downtown	Close Crossing (Construct Pedestrian Underpass)	7	5	0	(2)	0	0	(1)	2.67
Ramseur Street	12	Downtown	Close Crossing (Construct Pedestrian Underpass)	12	2	2	0	0	0	0	1.67
Cornwallis Road	18	East	Grade Separation - Bridge Over Rail	10	0	0	(2)	(1)	1	(1)	1.83
Briggs Avenue	14	Downtown	Grade Separation - Bridge Over Rail	8	1	0	(2)	0	1	(3)	1.17
Ellis Road East	17	East	Grade Separation - Bridge Over Rail	9	0	0	(1)	(4)	0	(1)	1.50
Plum Street	13	Downtown	Close Crossing (Construct Pedestrian Underpass)	6	3	3	0	0	2	(2)	1.33
N. LaSalle Street	3	West	Grade Separation - Bridge Over Road	10	0	0	(4)	(1)	0	0	1.75
Fayetteville Street	11	Downtown	Grade Separation - Bridge Over Rail and Ramseur	5	3	0	(2)	0	1	(5)	1.00
Glover and Wrenn Roads	16	East	Grade Separation - Bridge Over Rail at Glover Road/ Close Wrenn Road	10	5	0	0	0	1	0	1.67
Neal Road	1	West	Grade Separation - Bridge Over Rail	4	0	0	(5)	(4)	1	(1)	(0.42)

Durham TSS Stakeholder Ranking of Long Term Crossing Improvements with Opinion of Probable Construction Cost

