APPENDIX A: UNIT COST COMPARISON FOR HOT LANE NETWORK - Low, Medium, and High Range Costs Per Lane Mile

	Low Range		Medium Range		High Range	
Item	Lane Mile Cost	Comments/Assumptions	Lane Mile Cost	Comments/Assumptions	Lane Mile Cost	Comments/Assumptions
Pavement Demolition	$ 50,000		$ 50,000		$ 50,000	
Haul Debris	$ 25,000		$ 25,000		$ 25,000	
Aggregate Base	$ 20,000		$ 20,000		$ 20,000	
Subgrade	$ 4,000		$ 4,000		$ 4,000	
Asphalt Concrete	$ 41,000		$ 41,000		$ 41,000	
Drainage Modifications	$ 65,000	Inlet modifications etc. along shoulder	$ 65,000	Inlet modifications etc. along shoulder	$ 65,000	Inlet modifications etc. along shoulder
Metal Beam Guardrailing	$ 42,000	Replace 25% per lane mile	$ 42,000	Replace 25% per lane mile	$ 42,000	Replace 25% per lane mile
Concrete Barrier	$ 50,000	Replace 20% per lane mile	$ 50,000	Replace 20% per lane mile	$ 50,000	Replace 20% per lane mile
Shoulder reconstruction	$ 78,000		$ 78,000		$ 78,000	
Asphalt Concrete- Shoulder	$ 20,000		$ 20,000		$ 20,000	
Temporary K-rail	$ 22,500	0.25 mile of placement per mile	$ 45,000	0.5 mile of placement per mile	$ 45,000	0.5 mile of placement per mile
Temporary Striping	$ 3,000		$ 3,000		$ 3,000	
Permanent Striping	$ 7,000		$ 7,000		$ 7,000	
Traffic Markings for HOT lanes	$ 3,000		$ 3,000		$ 3,000	
HOT Lane Striping	$ 15,000		$ 15,000		$ 15,000	
Enforcement Area	$ -	None Assumed	$ 40,000	Use of median shoulder every 4 miles	$ 86,250	Standard enforcement & Weaving Lanes
Misc.Sign Allowance	$ 10,000	Small signs posted on median barrier	$ 10,000	Small signs posted on median barrier	$ 10,000	Small signs posted on median barrier
Guide Sign Allowance	$ 22,500	3 prior to start of each HOT every 10 miles	$ 22,500	3 prior to start of each HOT every 10 Miles	$ 22,500	3 prior to start of each HOT every 10 miles
CMS/VMS	$ 37,500	1 per 4 lane mile @ 150,000 ea.	$ 75,000	2 per 4 lane miles @ 150,000 ea.	$ 75,000	2 per 4 lane miles @ 150,000 ea.
Utility Relocation Allowance	$ 25,000		$ 50,000		$ 50,000	
Structure Modification	$ -	None Assumed	$ 300,000	1.5 bridge per lane mile, $500/sq.ft due to addition of substructure, assume 100 foot long bridge	$ 500,000	2.5 bridges per lane mile, $500/sq.ft due to addition of substructure, assume 100 foot long bridge
Sound wall Modification	$ -	None Assumed	$ -	None Assumed	$ 396,000	10% replacement per lane mile
ITS Elements	$ 300,000		$ 300,000.00		$ 300,000	
Sub-total	**$ 840,500**		**$ 1,265,500**		**$ 1,907,750**	
Mobilization 10%	84,050		126,550		190,775	
Contingency	$ 184,910	Assume 20%	$ 417,615.00	Assume 30%	$ 839,410	40% Contingency; greater uncertainty with ROW acquisition and structure replacement
Total	**$ 1,109,460**		**$ 1,809,665.00**		**$ 2,937,935**	
Traffic Management	33,284	Assume 3% of total	72,387	Assume 4% of total	146,897	Assume 5% of total
Design and Construction Management	221,892	Assume 20% of total	361,933	Assume 20% of total	587,587	Assume 20% of total
Grand Total	**$ 1,364,636**		**$ 2,243,985**		**$ 3,672,419**	

Note: Shaded rows indicate cost items where assumptions differ for the low, medium and high range cost estimates.

Note: All Costs are in 2006 Dollars (2006 $)