

**To:** Gerry Pate, P.E.  
**From:** Carlos L. Miranda  
**CC:** Shahram Bohluli, P.E.  
**Date:** July 13, 2009  
**Re:** Hidalgo County Loop Traffic and Revenue figures for Section A Only.

---

### *Scope*

The scope of this memorandum is limited to provide an intermediate level traffic and revenue projection for Section A of the Hidalgo County Loop. As described in previous reports, this Section is part of the Hidalgo County Loop.

### *Scenarios*

Similarly to the previous report “County Loop Phase One Intermediate Traffic and Revenue Study”, three revenue scenarios were evaluated and are presented in this memorandum, Base, Low and High. For a complete descriptions of these scenarios please refer to the “Hidalgo County Loop Phase One Intermediate Traffic and Revenue Study”.

### *Traffic and Revenue Figures*

C&M’s Traffic and Revenue (T&R) projections take into consideration past and present socioeconomic and traffic data trends to estimate future growth. The assessment and forecast is based on the existing regional traffic model and other existing information including newly collected data. Several sensitivity analyses were considered including sensitivities to changes in user’s Value of Time (VOT), toll rates and system configuration.

Section A traffic and revenue projections are presented in Tables 2 to 7 at the end of this memorandum. All revenue projections are in 2008 dollars.

The construction of only Section A has several shortcomings compared to the entire look. The effects in the system in terms of traffic can be summarized as follows:

- There is no north-south function of the project
- It removes the relief route usage for the US83 corridor
- The lack of connectivity of the new project with other major roads in the study area increases travel time and reduce the road’s attractiveness to potential users.

It is important to note that employment, retail and population that was distributed along the other sections during the socioeconomic review performed previously for the project was not modified for the analysis described in this technical memorandum. A re-allocation of these variables to other areas might modify the congestion in the study area, and therefore the diversion and revenue of Section A.

## Assumptions

The Intermediate “Base Case” traffic and revenue forecast presented herein has been based on the following main assumptions presented in [Table 1](#) below.

**Table 1 – Post Processing Assumptions**

Item	Assumption																																
Project name	Hidalgo County Loop – Section A ONLY																																
Project location	Hidalgo County, TX																																
Opening year of operations	2011																																
Last forecasted year	2050																																
Toll project type	Toll Road																																
Type of toll collection	Electronic Toll Collection (ETC) only																																
Number of lanes	1 per direction on opening year (2011), additional lanes (up to 3 per direction) as needed																																
Max Capacity General Purpose Lane	1600 vehicles per hour																																
Truck percentage on facility	Varies with Section																																
Bus percentage on facility	0%																																
HOV discount	0%																																
Period and toll increases	1 (every year). CPI+1.6%																																
Violation/Leakage annual rate	5%																																
Ramp Up and ETC penetration patterns	Custom (See Below)																																
	<table border="1"> <thead> <tr> <th rowspan="2">Year</th> <th rowspan="2">Traditional Ramp Up</th> <th colspan="2">Average ETC Penetration</th> </tr> <tr> <th>P. C.</th> <th>Trucks</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>50%</td> <td>65%</td> <td>65%</td> </tr> <tr> <td>1</td> <td>60%</td> <td>70%</td> <td>70%</td> </tr> <tr> <td>2</td> <td>70%</td> <td>75%</td> <td>75%</td> </tr> <tr> <td>3</td> <td>80%</td> <td>80%</td> <td>80%</td> </tr> <tr> <td>4</td> <td>90%</td> <td>85%</td> <td>85%</td> </tr> <tr> <td>5 and latter</td> <td>100%</td> <td>90%</td> <td>90%</td> </tr> </tbody> </table>	Year	Traditional Ramp Up	Average ETC Penetration		P. C.	Trucks	0	50%	65%	65%	1	60%	70%	70%	2	70%	75%	75%	3	80%	80%	80%	4	90%	85%	85%	5 and latter	100%	90%	90%		
Year	Traditional Ramp Up			Average ETC Penetration																													
		P. C.	Trucks																														
0	50%	65%	65%																														
1	60%	70%	70%																														
2	70%	75%	75%																														
3	80%	80%	80%																														
4	90%	85%	85%																														
5 and latter	100%	90%	90%																														
Revenue days	Custom (See Below)																																
	<table border="1"> <thead> <tr> <th rowspan="2">Section</th> <th colspan="2">A</th> </tr> <tr> <th>PC</th> <th>Trucks</th> </tr> </thead> <tbody> <tr> <td>RD</td> <td>360</td> <td>288</td> </tr> </tbody> </table>	Section	A		PC	Trucks	RD	360	288																								
Section	A																																
	PC	Trucks																															
RD	360	288																															
Socioeconomic factors	TXP data Scenario A																																

Table 2- Base Case Transactions Estimates

Year	Transactions		
	A		Total
	Cars	Trucks	
2011	1,014,000	67,000	1,081,000
2012	1,473,000	106,000	1,579,000
2013	2,045,000	157,000	2,202,000
2014	2,741,000	222,000	2,963,000
2015	3,573,000	302,000	3,875,000
2016	4,553,000	398,000	4,951,000
2017	4,902,000	440,000	5,342,000
2018	5,251,000	482,000	5,733,000
2019	5,600,000	523,000	6,123,000
2020	5,949,000	565,000	6,514,000
2021	6,298,000	607,000	6,905,000
2022	6,646,000	649,000	7,295,000
2023	6,995,000	690,000	7,685,000
2024	7,344,000	732,000	8,076,000
2025	7,693,000	774,000	8,467,000
2026	8,042,000	816,000	8,858,000
2027	8,391,000	858,000	9,249,000
2028	8,740,000	899,000	9,639,000
2029	9,089,000	941,000	10,030,000
2030	9,438,000	983,000	10,421,000
2031	9,773,000	1,024,000	10,797,000
2032	10,093,000	1,063,000	11,156,000
2033	10,399,000	1,102,000	11,501,000
2034	10,691,000	1,139,000	11,830,000
2035	10,968,000	1,175,000	12,143,000
2036	11,232,000	1,209,000	12,441,000
2037	11,482,000	1,243,000	12,725,000
2038	11,719,000	1,274,000	12,993,000
2039	11,943,000	1,305,000	13,248,000
2040	12,155,000	1,334,000	13,489,000
2041	12,355,000	1,362,000	13,717,000
2042	12,545,000	1,388,000	13,933,000
2043	12,724,000	1,414,000	14,138,000
2044	12,893,000	1,439,000	14,332,000
2045	13,052,000	1,462,000	14,514,000
2046	13,209,000	1,484,000	14,693,000
2047	13,367,000	1,506,000	14,873,000
2048	13,528,000	1,528,000	15,056,000
2049	13,690,000	1,551,000	15,241,000
2050	13,854,000	1,573,000	15,427,000

**Table 3- Base Case Gross Revenue Estimates (In 2008 Dollars)**

Year	Gross Revenue		
	A		Total
	Cars	Trucks	
2011	\$ 871,000	\$ 235,000	\$ 1,106,000
2012	1,320,000	397,000	1,717,000
2013	1,900,000	619,000	2,519,000
2014	2,632,000	910,000	3,542,000
2015	3,533,000	1,279,000	4,812,000
2016	4,625,000	1,738,000	6,363,000
2017	5,107,000	1,972,000	7,079,000
2018	5,601,000	2,212,000	7,813,000
2019	6,108,000	2,460,000	8,568,000
2020	6,629,000	2,714,000	9,343,000
2021	7,162,000	2,974,000	10,136,000
2022	7,708,000	3,241,000	10,949,000
2023	8,267,000	3,514,000	11,781,000
2024	8,839,000	3,794,000	12,633,000
2025	9,424,000	4,081,000	13,505,000
2026	10,022,000	4,374,000	14,396,000
2027	10,633,000	4,674,000	15,307,000
2028	11,256,000	4,980,000	16,236,000
2029	11,893,000	5,293,000	17,186,000
2030	12,543,000	5,612,000	18,155,000
2031	13,176,000	5,925,000	19,101,000
2032	13,789,000	6,231,000	20,020,000
2033	14,382,000	6,529,000	20,911,000
2034	14,953,000	6,818,000	21,771,000
2035	15,502,000	7,098,000	22,600,000
2036	16,027,000	7,368,000	23,395,000
2037	16,529,000	7,628,000	24,157,000
2038	17,008,000	7,878,000	24,886,000
2039	17,464,000	8,119,000	25,583,000
2040	17,898,000	8,349,000	26,247,000
2041	18,309,000	8,570,000	26,879,000
2042	18,699,000	8,781,000	27,480,000
2043	19,068,000	8,982,000	28,050,000
2044	19,418,000	9,174,000	28,592,000
2045	19,748,000	9,357,000	29,105,000
2046	20,082,000	9,535,000	29,617,000
2047	20,421,000	9,716,000	30,137,000
2048	20,767,000	9,900,000	30,667,000
2049	21,118,000	10,088,000	31,206,000
2050	21,474,000	10,279,000	31,753,000

Table 4- Low Case Transactions Estimates

Year	Transactions		Total
	A		
	Cars	Trucks	
2011	1,014,000	67,000	1,081,000
2012	1,437,000	104,000	1,541,000
2013	1,953,000	152,000	2,105,000
2014	2,572,000	212,000	2,784,000
2015	3,300,000	285,000	3,585,000
2016	4,147,000	373,000	4,520,000
2017	4,411,000	409,000	4,820,000
2018	4,674,000	445,000	5,119,000
2019	4,937,000	480,000	5,417,000
2020	5,199,000	516,000	5,715,000
2021	5,461,000	552,000	6,013,000
2022	5,721,000	587,000	6,308,000
2023	5,982,000	622,000	6,604,000
2024	6,242,000	658,000	6,900,000
2025	6,502,000	693,000	7,195,000
2026	6,762,000	728,000	7,490,000
2027	7,021,000	764,000	7,785,000
2028	7,280,000	798,000	8,078,000
2029	7,539,000	833,000	8,372,000
2030	7,798,000	869,000	8,667,000
2031	8,046,000	903,000	8,949,000
2032	8,282,000	935,000	9,217,000
2033	8,507,000	968,000	9,475,000
2034	8,721,000	998,000	9,719,000
2035	8,923,000	1,027,000	9,950,000
2036	9,116,000	1,054,000	10,170,000
2037	9,297,000	1,082,000	10,379,000
2038	9,469,000	1,107,000	10,576,000
2039	9,631,000	1,132,000	10,763,000
2040	9,784,000	1,155,000	10,939,000
2041	9,929,000	1,178,000	11,107,000
2042	10,066,000	1,199,000	11,265,000
2043	10,195,000	1,220,000	11,415,000
2044	10,316,000	1,239,000	11,555,000
2045	10,438,000	1,257,000	11,695,000
2046	10,562,000	1,275,000	11,837,000
2047	10,686,000	1,294,000	11,980,000
2048	10,813,000	1,312,000	12,125,000
2049	10,941,000	1,332,000	12,273,000
2050	11,070,000	1,350,000	12,420,000

**Table 5- Low Case Gross Revenue Estimates (In 2008 Dollars)**

Year	Gross Revenue		
	A		Total
	Cars	Trucks	
2011	\$ 871,000	\$ 235,000	\$ 1,106,000
2012	1,290,000	386,000	1,676,000
2013	1,824,000	589,000	2,413,000
2014	2,489,000	851,000	3,340,000
2015	3,298,000	1,180,000	4,478,000
2016	4,271,000	1,584,000	5,855,000
2017	4,671,000	1,780,000	6,451,000
2018	5,081,000	1,980,000	7,061,000
2019	5,500,000	2,186,000	7,686,000
2020	5,931,000	2,396,000	8,327,000
2021	6,370,000	2,611,000	8,981,000
2022	6,820,000	2,831,000	9,651,000
2023	7,280,000	3,056,000	10,336,000
2024	7,750,000	3,286,000	11,036,000
2025	8,230,000	3,521,000	11,751,000
2026	8,720,000	3,761,000	12,481,000
2027	9,221,000	4,007,000	13,228,000
2028	9,730,000	4,256,000	13,986,000
2029	10,251,000	4,512,000	14,763,000
2030	10,782,000	4,772,000	15,554,000
2031	11,298,000	5,026,000	16,324,000
2032	11,796,000	5,273,000	17,069,000
2033	12,277,000	5,514,000	17,791,000
2034	12,739,000	5,747,000	18,486,000
2035	13,182,000	5,972,000	19,154,000
2036	13,604,000	6,189,000	19,793,000
2037	14,008,000	6,397,000	20,405,000
2038	14,392,000	6,597,000	20,989,000
2039	14,757,000	6,789,000	21,546,000
2040	15,104,000	6,972,000	22,076,000
2041	15,431,000	7,147,000	22,578,000
2042	15,742,000	7,315,000	23,057,000
2043	16,035,000	7,474,000	23,509,000
2044	16,312,000	7,626,000	23,938,000
2045	16,585,000	7,770,000	24,355,000
2046	16,862,000	7,915,000	24,777,000
2047	17,144,000	8,062,000	25,206,000
2048	17,431,000	8,212,000	25,643,000
2049	17,722,000	8,365,000	26,087,000
2050	18,018,000	8,520,000	26,538,000

Table 6- High Case Transactions Estimates

Year	Transactions		Total
	A		
	Cars	Trucks	
2011	1,014,000	67,000	1,081,000
2012	1,486,000	107,000	1,593,000
2013	2,077,000	161,000	2,238,000
2014	2,801,000	230,000	3,031,000
2015	3,670,000	315,000	3,985,000
2016	4,697,000	419,000	5,116,000
2017	5,077,000	465,000	5,542,000
2018	5,457,000	512,000	5,969,000
2019	5,838,000	558,000	6,396,000
2020	6,219,000	605,000	6,824,000
2021	6,601,000	653,000	7,254,000
2022	6,981,000	700,000	7,681,000
2023	7,363,000	746,000	8,109,000
2024	7,745,000	794,000	8,539,000
2025	8,128,000	841,000	8,969,000
2026	8,511,000	889,000	9,400,000
2027	8,894,000	936,000	9,830,000
2028	9,277,000	983,000	10,260,000
2029	9,661,000	1,031,000	10,692,000
2030	10,045,000	1,079,000	11,124,000
2031	10,414,000	1,126,000	11,540,000
2032	10,768,000	1,170,000	11,938,000
2033	11,106,000	1,215,000	12,321,000
2034	11,430,000	1,256,000	12,686,000
2035	11,737,000	1,297,000	13,034,000
2036	12,031,000	1,335,000	13,366,000
2037	12,309,000	1,373,000	13,682,000
2038	12,574,000	1,408,000	13,982,000
2039	12,824,000	1,442,000	14,266,000
2040	13,062,000	1,475,000	14,537,000
2041	13,286,000	1,507,000	14,793,000
2042	13,499,000	1,537,000	15,036,000
2043	13,701,000	1,566,000	15,267,000
2044	13,892,000	1,594,000	15,486,000
2045	14,072,000	1,620,000	15,692,000
2046	14,245,000	1,645,000	15,890,000
2047	14,419,000	1,671,000	16,090,000
2048	14,596,000	1,696,000	16,292,000
2049	14,775,000	1,723,000	16,498,000
2050	14,956,000	1,748,000	16,704,000

**Table 7- High Case Gross Revenue Estimates (In 2008 Dollars)**

Year	Gross Revenue		
	A		Total
	Cars	Trucks	
2011	\$ 871,000	\$ 235,000	\$ 1,106,000
2012	1,342,000	406,000	1,748,000
2013	1,958,000	644,000	2,602,000
2014	2,742,000	960,000	3,702,000
2015	3,714,000	1,364,000	5,078,000
2016	4,899,000	1,868,000	6,767,000
2017	5,444,000	2,135,000	7,579,000
2018	6,004,000	2,410,000	8,414,000
2019	6,580,000	2,694,000	9,274,000
2020	7,172,000	2,986,000	10,158,000
2021	7,778,000	3,285,000	11,063,000
2022	8,400,000	3,593,000	11,993,000
2023	9,037,000	3,909,000	12,946,000
2024	9,690,000	4,233,000	13,923,000
2025	10,358,000	4,566,000	14,924,000
2026	11,042,000	4,906,000	15,948,000
2027	11,741,000	5,255,000	16,996,000
2028	12,454,000	5,611,000	18,065,000
2029	13,184,000	5,976,000	19,160,000
2030	13,930,000	6,348,000	20,278,000
2031	14,657,000	6,714,000	21,371,000
2032	15,363,000	7,073,000	22,436,000
2033	16,047,000	7,424,000	23,471,000
2034	16,707,000	7,765,000	24,472,000
2035	17,343,000	8,096,000	25,439,000
2036	17,952,000	8,417,000	26,369,000
2037	18,536,000	8,726,000	27,262,000
2038	19,094,000	9,024,000	28,118,000
2039	19,625,000	9,312,000	28,937,000
2040	20,132,000	9,587,000	29,719,000
2041	20,613,000	9,853,000	30,466,000
2042	21,070,000	10,107,000	31,177,000
2043	21,503,000	10,350,000	31,853,000
2044	21,914,000	10,582,000	32,496,000
2045	22,302,000	10,804,000	33,106,000
2046	22,686,000	11,017,000	33,703,000
2047	23,075,000	11,232,000	34,307,000
2048	23,472,000	11,451,000	34,923,000
2049	23,876,000	11,675,000	35,551,000
2050	24,284,000	11,902,000	36,186,000