



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

Scope

The scope of this memorandum is limited to provide a sketch level traffic and revenue projection for the new Section A and Section B of the Hidalgo County Loop. In this memorandum, Section A is reconfigured to start at its original location in the east side, but to end at the full access bridge/interchange with the proposed Anzaludas access road on the west side..

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 description 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. 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 reconfiguration of Section A has several implications compared to previous projections. The effects in the system can be summarized as follows:

- This analysis becomes Sketch level
- Gantry locations were not modified from previous analysis, and therefore there is an opportunity to optimize their locations.
- Assumed no operational issues which might affect traffic and revenue (full connectivity at the new west terminus)

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.

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 –New Section A and B, Sketch level.				
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)				
	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)				
	Section	A		B	
		PC	Trucks	PC	Trucks
	RD	360	288	360	288
Socioeconomic factors	TXP data Scenario A				

Table 2- Base Case Transactions Estimates

Year	Transactions				Total
	A		B		
	Cars	Trucks	Cars	Trucks	
2011	2,527,000	212,000	563,000	43,000	3,345,000
2012	3,646,000	318,000	833,000	67,000	4,864,000
2013	5,033,000	453,000	1,174,000	98,000	6,758,000
2014	6,715,000	621,000	1,592,000	137,000	9,065,000
2015	8,720,000	824,000	2,097,000	184,000	11,825,000
2016	11,074,000	1,066,000	2,696,000	241,000	15,077,000
2017	11,890,000	1,159,000	2,916,000	265,000	16,230,000
2018	12,705,000	1,252,000	3,135,000	288,000	17,380,000
2019	13,520,000	1,346,000	3,355,000	312,000	18,533,000
2020	14,336,000	1,439,000	3,575,000	336,000	19,686,000
2021	15,151,000	1,532,000	3,795,000	360,000	20,838,000
2022	15,967,000	1,626,000	4,015,000	383,000	21,991,000
2023	16,782,000	1,719,000	4,235,000	407,000	23,143,000
2024	17,598,000	1,812,000	4,455,000	431,000	24,296,000
2025	18,413,000	1,905,000	4,675,000	454,000	25,447,000
2026	19,228,000	1,999,000	4,895,000	478,000	26,600,000
2027	20,044,000	2,092,000	5,115,000	502,000	27,753,000
2028	20,859,000	2,185,000	5,335,000	526,000	28,905,000
2029	21,675,000	2,278,000	5,554,000	549,000	30,056,000
2030	22,490,000	2,372,000	5,774,000	573,000	31,209,000
2031	23,270,000	2,463,000	5,985,000	596,000	32,314,000
2032	24,015,000	2,550,000	6,188,000	619,000	33,372,000
2033	24,724,000	2,633,000	6,380,000	641,000	34,378,000
2034	25,398,000	2,714,000	6,564,000	662,000	35,338,000
2035	26,038,000	2,790,000	6,739,000	682,000	36,249,000
2036	26,644,000	2,864,000	6,905,000	702,000	37,115,000
2037	27,216,000	2,933,000	7,064,000	721,000	37,934,000
2038	27,757,000	2,999,000	7,214,000	739,000	38,709,000
2039	28,268,000	3,061,000	7,356,000	756,000	39,441,000
2040	28,748,000	3,121,000	7,490,000	772,000	40,131,000
2041	29,201,000	3,176,000	7,616,000	787,000	40,780,000
2042	29,627,000	3,228,000	7,737,000	801,000	41,393,000
2043	30,027,000	3,278,000	7,851,000	815,000	41,971,000
2044	30,403,000	3,326,000	7,957,000	828,000	42,514,000
2045	30,757,000	3,370,000	8,059,000	840,000	43,026,000
2046	31,105,000	3,412,000	8,156,000	852,000	43,525,000
2047	31,456,000	3,452,000	8,253,000	865,000	44,026,000
2048	31,810,000	3,492,000	8,352,000	878,000	44,532,000
2049	32,169,000	3,534,000	8,453,000	892,000	45,048,000
2050	32,532,000	3,575,000	8,554,000	905,000	45,566,000

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

Year	Gross Revenue				Total
	A		B		
	Cars	Trucks	Cars	Trucks	
2011	1,711,000	489,000	334,000	77,000	\$ 2,611,000.00
2012	2,547,000	767,000	504,000	121,000	3,939,000
2013	3,615,000	1,134,000	724,000	180,000	5,653,000
2014	4,949,000	1,603,000	1,000,000	255,000	7,807,000
2015	6,581,000	2,189,000	1,340,000	350,000	10,460,000
2016	8,548,000	2,907,000	1,752,000	466,000	13,673,000
2017	9,376,000	3,239,000	1,927,000	520,000	15,062,000
2018	10,225,000	3,580,000	2,107,000	576,000	16,488,000
2019	11,096,000	3,930,000	2,291,000	633,000	17,950,000
2020	11,989,000	4,289,000	2,480,000	692,000	19,450,000
2021	12,904,000	4,657,000	2,674,000	752,000	20,987,000
2022	13,841,000	5,034,000	2,872,000	814,000	22,561,000
2023	14,800,000	5,420,000	3,075,000	877,000	24,172,000
2024	15,781,000	5,815,000	3,283,000	941,000	25,820,000
2025	16,783,000	6,219,000	3,495,000	1,008,000	27,505,000
2026	17,808,000	6,632,000	3,712,000	1,075,000	29,227,000
2027	18,854,000	7,055,000	3,933,000	1,144,000	30,986,000
2028	19,922,000	7,486,000	4,159,000	1,215,000	32,782,000
2029	21,012,000	7,926,000	4,390,000	1,287,000	34,615,000
2030	22,124,000	8,376,000	4,626,000	1,360,000	36,486,000
2031	23,202,000	8,814,000	4,855,000	1,432,000	38,303,000
2032	24,243,000	9,239,000	5,078,000	1,501,000	40,061,000
2033	25,244,000	9,649,000	5,292,000	1,568,000	41,753,000
2034	26,204,000	10,044,000	5,499,000	1,633,000	43,380,000
2035	27,120,000	10,423,000	5,697,000	1,696,000	44,936,000
2036	27,994,000	10,785,000	5,887,000	1,756,000	46,422,000
2037	28,825,000	11,130,000	6,070,000	1,814,000	47,839,000
2038	29,612,000	11,459,000	6,244,000	1,869,000	49,184,000
2039	30,357,000	11,772,000	6,410,000	1,922,000	50,461,000
2040	31,061,000	12,068,000	6,567,000	1,972,000	51,668,000
2041	31,724,000	12,348,000	6,717,000	2,020,000	52,809,000
2042	32,348,000	12,613,000	6,859,000	2,065,000	53,885,000
2043	32,934,000	12,862,000	6,992,000	2,109,000	54,897,000
2044	33,484,000	13,096,000	7,120,000	2,151,000	55,851,000
2045	33,999,000	13,317,000	7,242,000	2,192,000	56,750,000
2046	34,519,000	13,529,000	7,367,000	2,233,000	57,648,000
2047	35,047,000	13,744,000	7,493,000	2,276,000	58,560,000
2048	35,584,000	13,962,000	7,622,000	2,319,000	59,487,000
2049	36,127,000	14,185,000	7,753,000	2,364,000	60,429,000
2050	36,680,000	14,410,000	7,886,000	2,408,000	61,384,000

Table 4- Low Case Transactions Estimates

Year	Transactions				Total
	A		B		
	Cars	Trucks	Cars	Trucks	
2011	2,527,000	212,000	563,000	43,000	3,684,000
2012	3,557,000	312,000	815,000	65,000	5,163,000
2013	4,806,000	438,000	1,125,000	91,000	6,955,000
2014	6,297,000	592,000	1,502,000	124,000	9,089,000
2015	8,048,000	778,000	1,951,000	163,000	11,595,000
2016	10,080,000	996,000	2,477,000	210,000	14,501,000
2017	10,690,000	1,076,000	2,651,000	226,000	15,344,000
2018	11,298,000	1,152,000	2,824,000	242,000	16,191,000
2019	11,905,000	1,232,000	2,997,000	259,000	17,036,000
2020	12,513,000	1,309,000	3,169,000	275,000	17,880,000
2021	13,117,000	1,388,000	3,343,000	292,000	18,727,000
2022	13,722,000	1,465,000	3,514,000	307,000	19,569,000
2023	14,325,000	1,544,000	3,686,000	324,000	20,413,000
2024	14,927,000	1,621,000	3,858,000	340,000	21,257,000
2025	15,530,000	1,697,000	4,029,000	355,000	22,101,000
2026	16,131,000	1,776,000	4,200,000	371,000	22,944,000
2027	16,731,000	1,853,000	4,371,000	387,000	23,786,000
2028	17,331,000	1,930,000	4,542,000	403,000	24,628,000
2029	17,930,000	2,006,000	4,711,000	419,000	25,469,000
2030	18,529,000	2,084,000	4,882,000	434,000	26,311,000
2031	19,100,000	2,159,000	5,046,000	448,000	27,112,000
2032	19,643,000	2,230,000	5,203,000	463,000	27,868,000
2033	20,158,000	2,297,000	5,351,000	475,000	28,584,000
2034	20,646,000	2,361,000	5,492,000	488,000	29,259,000
2035	21,108,000	2,421,000	5,628,000	499,000	29,891,000
2036	21,543,000	2,479,000	5,754,000	510,000	30,485,000
2037	21,952,000	2,533,000	5,875,000	520,000	31,041,000
2038	22,337,000	2,584,000	5,989,000	529,000	31,562,000
2039	22,700,000	2,632,000	6,097,000	538,000	32,047,000
2040	23,041,000	2,679,000	6,198,000	546,000	32,502,000
2041	23,361,000	2,723,000	6,294,000	555,000	32,928,000
2042	23,661,000	2,763,000	6,386,000	563,000	33,324,000
2043	23,943,000	2,801,000	6,471,000	573,000	33,692,000
2044	24,207,000	2,837,000	6,551,000	582,000	34,034,000
2045	24,472,000	2,869,000	6,627,000	592,000	34,371,000
2046	24,740,000	2,902,000	6,706,000	600,000	34,709,000
2047	25,011,000	2,934,000	6,783,000	610,000	35,050,000
2048	25,285,000	2,966,000	6,861,000	619,000	35,395,000
2049	25,561,000	2,999,000	6,942,000	629,000	35,743,000
2050	25,842,000	3,033,000	7,023,000	638,000	36,093,000

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

Year	Gross Revenue				Total
	A		B		
	Cars	Trucks	Cars	Trucks	
2011	1,711,000	489,000	334,000	77,000	\$ 2,611,000.00
2012	2,489,000	746,000	493,000	116,000	3,844,000
2013	3,469,000	1,079,000	692,000	168,000	5,408,000
2014	4,678,000	1,497,000	941,000	231,000	7,347,000
2015	6,140,000	2,017,000	1,243,000	311,000	9,711,000
2016	7,887,000	2,646,000	1,606,000	405,000	12,544,000
2017	8,568,000	2,918,000	1,747,000	443,000	13,676,000
2018	9,266,000	3,197,000	1,893,000	483,000	14,839,000
2019	9,980,000	3,484,000	2,040,000	524,000	16,028,000
2020	10,712,000	3,777,000	2,192,000	566,000	17,247,000
2021	11,460,000	4,077,000	2,347,000	608,000	18,492,000
2022	12,226,000	4,383,000	2,505,000	652,000	19,766,000
2023	13,009,000	4,696,000	2,667,000	695,000	21,067,000
2024	13,809,000	5,017,000	2,831,000	740,000	22,397,000
2025	14,625,000	5,343,000	3,001,000	786,000	23,755,000
2026	15,460,000	5,677,000	3,173,000	833,000	25,143,000
2027	16,310,000	6,019,000	3,347,000	880,000	26,556,000
2028	17,178,000	6,365,000	3,525,000	929,000	27,997,000
2029	18,063,000	6,720,000	3,709,000	977,000	29,469,000
2030	18,965,000	7,081,000	3,895,000	1,027,000	30,968,000
2031	19,836,000	7,431,000	4,075,000	1,076,000	32,418,000
2032	20,674,000	7,769,000	4,249,000	1,122,000	33,814,000
2033	21,478,000	8,095,000	4,417,000	1,168,000	35,158,000
2034	22,247,000	8,408,000	4,579,000	1,212,000	36,446,000
2035	22,978,000	8,707,000	4,733,000	1,255,000	37,673,000
2036	23,673,000	8,991,000	4,880,000	1,295,000	38,839,000
2037	24,333,000	9,261,000	5,021,000	1,334,000	39,949,000
2038	24,956,000	9,518,000	5,155,000	1,372,000	41,001,000
2039	25,544,000	9,761,000	5,283,000	1,408,000	41,996,000
2040	26,097,000	9,990,000	5,404,000	1,442,000	42,933,000
2041	26,618,000	10,205,000	5,519,000	1,474,000	43,816,000
2042	27,105,000	10,409,000	5,628,000	1,506,000	44,648,000
2043	27,562,000	10,599,000	5,730,000	1,534,000	45,425,000
2044	27,989,000	10,778,000	5,828,000	1,563,000	46,158,000
2045	28,407,000	10,946,000	5,926,000	1,591,000	46,870,000
2046	28,832,000	11,113,000	6,026,000	1,620,000	47,591,000
2047	29,264,000	11,282,000	6,128,000	1,650,000	48,324,000
2048	29,702,000	11,453,000	6,232,000	1,681,000	49,068,000
2049	30,145,000	11,628,000	6,336,000	1,712,000	49,821,000
2050	30,597,000	11,805,000	6,444,000	1,744,000	50,590,000

Table 6- High Case Transactions Estimates

Year	Transactions				Total
	A		B		
	Cars	Trucks	Cars	Trucks	
2011	2,527,000	212,000	563,000	43,000	3,345,000
2012	3,679,000	322,000	838,000	68,000	4,907,000
2013	5,115,000	465,000	1,187,000	99,000	6,866,000
2014	6,867,000	644,000	1,615,000	139,000	9,265,000
2015	8,965,000	862,000	2,135,000	187,000	12,149,000
2016	11,437,000	1,123,000	2,752,000	246,000	15,558,000
2017	12,330,000	1,228,000	2,985,000	271,000	16,814,000
2018	13,223,000	1,333,000	3,218,000	296,000	18,070,000
2019	14,117,000	1,441,000	3,451,000	322,000	19,331,000
2020	15,013,000	1,547,000	3,684,000	347,000	20,591,000
2021	15,912,000	1,654,000	3,918,000	373,000	21,857,000
2022	16,809,000	1,760,000	4,152,000	398,000	23,119,000
2023	17,708,000	1,868,000	4,386,000	423,000	24,385,000
2024	18,609,000	1,975,000	4,621,000	449,000	25,654,000
2025	19,510,000	2,081,000	4,855,000	474,000	26,920,000
2026	20,410,000	2,191,000	5,091,000	501,000	28,193,000
2027	21,313,000	2,298,000	5,325,000	526,000	29,462,000
2028	22,216,000	2,405,000	5,561,000	552,000	30,734,000
2029	23,121,000	2,514,000	5,795,000	576,000	32,006,000
2030	24,027,000	2,624,000	6,031,000	602,000	33,284,000
2031	24,896,000	2,730,000	6,258,000	627,000	34,511,000
2032	25,728,000	2,832,000	6,477,000	652,000	35,689,000
2033	26,521,000	2,928,000	6,685,000	677,000	36,811,000
2034	27,278,000	3,021,000	6,887,000	699,000	37,885,000
2035	27,999,000	3,109,000	7,078,000	722,000	38,908,000
2036	28,682,000	3,194,000	7,260,000	744,000	39,880,000
2037	29,329,000	3,273,000	7,434,000	765,000	40,801,000
2038	29,942,000	3,349,000	7,599,000	786,000	41,676,000
2039	30,523,000	3,421,000	7,756,000	805,000	42,505,000
2040	31,072,000	3,492,000	7,905,000	823,000	43,292,000
2041	31,590,000	3,557,000	8,045,000	841,000	44,033,000
2042	32,079,000	3,618,000	8,179,000	857,000	44,733,000
2043	32,540,000	3,676,000	8,305,000	873,000	45,394,000
2044	32,975,000	3,734,000	8,424,000	889,000	46,022,000
2045	33,386,000	3,786,000	8,537,000	903,000	46,612,000
2046	33,779,000	3,836,000	8,644,000	918,000	47,177,000
2047	34,176,000	3,886,000	8,751,000	932,000	47,745,000
2048	34,576,000	3,934,000	8,860,000	947,000	48,317,000
2049	34,983,000	3,985,000	8,970,000	963,000	48,901,000
2050	35,394,000	4,035,000	9,082,000	977,000	49,488,000

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

Year	Gross Revenue				Total
	A		B		
	Cars	Trucks	Cars	Trucks	
2011	1,711,000	489,000	334,000	77,000	\$ 2,611,000.00
2012	2,591,000	785,000	507,000	122,000	4,005,000
2013	3,728,000	1,181,000	731,000	182,000	5,822,000
2014	5,159,000	1,693,000	1,013,000	259,000	8,124,000
2015	6,924,000	2,338,000	1,362,000	357,000	10,981,000
2016	9,063,000	3,132,000	1,786,000	477,000	14,458,000
2017	10,007,000	3,515,000	1,968,000	533,000	16,023,000
2018	10,976,000	3,911,000	2,156,000	592,000	17,635,000
2019	11,972,000	4,317,000	2,349,000	653,000	19,291,000
2020	12,994,000	4,736,000	2,549,000	714,000	20,993,000
2021	14,042,000	5,165,000	2,751,000	778,000	22,736,000
2022	15,117,000	5,606,000	2,960,000	844,000	24,527,000
2023	16,218,000	6,058,000	3,174,000	910,000	26,360,000
2024	17,346,000	6,522,000	3,392,000	978,000	28,238,000
2025	18,498,000	6,997,000	3,617,000	1,050,000	30,162,000
2026	19,680,000	7,483,000	3,845,000	1,121,000	32,129,000
2027	20,885,000	7,983,000	4,080,000	1,196,000	34,144,000
2028	22,117,000	8,491,000	4,319,000	1,272,000	36,199,000
2029	23,377,000	9,013,000	4,564,000	1,349,000	38,303,000
2030	24,664,000	9,547,000	4,813,000	1,428,000	40,452,000
2031	25,913,000	10,068,000	5,057,000	1,507,000	42,545,000
2032	27,124,000	10,576,000	5,295,000	1,583,000	44,578,000
2033	28,290,000	11,068,000	5,524,000	1,656,000	46,538,000
2034	29,413,000	11,544,000	5,746,000	1,728,000	48,431,000
2035	30,486,000	12,003,000	5,959,000	1,799,000	50,247,000
2036	31,513,000	12,443,000	6,164,000	1,866,000	51,986,000
2037	32,493,000	12,864,000	6,361,000	1,931,000	53,649,000
2038	33,423,000	13,268,000	6,548,000	1,994,000	55,233,000
2039	34,305,000	13,653,000	6,726,000	2,054,000	56,738,000
2040	35,141,000	14,019,000	6,896,000	2,112,000	58,168,000
2041	35,930,000	14,367,000	7,059,000	2,168,000	59,524,000
2042	36,676,000	14,697,000	7,214,000	2,220,000	60,807,000
2043	37,378,000	15,010,000	7,359,000	2,271,000	62,018,000
2044	38,038,000	15,305,000	7,498,000	2,320,000	63,161,000
2045	38,657,000	15,586,000	7,630,000	2,367,000	64,240,000
2046	39,267,000	15,851,000	7,767,000	2,414,000	65,299,000
2047	39,887,000	16,118,000	7,903,000	2,462,000	66,370,000
2048	40,518,000	16,389,000	8,042,000	2,511,000	67,460,000
2049	41,155,000	16,666,000	8,185,000	2,563,000	68,569,000
2050	41,804,000	16,946,000	8,329,000	2,614,000	69,693,000