

2040 MTP and CTP Alternatives – Performance Measures

Purpose of Performance Measures

Performance Measures provide a general indicator from a variety of perspectives such as mobility, travel time, congestion, mode choice, and air quality. The measures are not specific to a particular roadway or travel corridor but instead cover the entire transportation system, and therefore are useful for comparing the overall efficiency and effectiveness of the different transportation Alternatives. Most of the data used for calculating the Performance Measures comes from the Triangle Regional Model (TRM), which is a travel demand model that forecasts future travel statistics based on a set of assumptions concerning the highway network, transit service and other transportation facilities.

Presentation of Performance Measures

The first section is a table that presents all the Performance Measures for all of the Alternatives. Next a series of graphs compare key Performance Measures.

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	SE Data Scenario	2010	2040	CommPlan	CommPlan	AIT	CommPlan	AIT
	Transportation Network	2010	E+C	Highway	Moderate	Moderate	Transit	Transit
1	Performance Measures							
1.1	Total Vehicle Miles Traveled (VMT-daily)							
1.1.1	All Facility+C Connectors	13,217,550	21,281,636	21,962,571	21,502,963	21,585,306	21,376,086	21,459,588
1.1.2	All Facility (no C Connectors)	12,430,435	19,842,072	20,556,024	20,094,102	20,181,272	19,954,358	20,045,255
1.2	Total Vehicle Hours Traveled (VHT-daily)							
1.2.1	All Facility+C Connectors	312,669	614,488	560,421	586,003	592,529	583,390	589,070
1.2.2	All Facility (no C Connectors)	260,012	517,982	466,092	491,532	498,375	488,056	494,221
1.3	Average Speed by Facility (miles/hour)							
1.3.1	- Freeway	63	55	61	58	58	58	58
1.3.2	- Arterial	42	37	39	38	38	37	37
1.3.3	- All Facility	53	46	50	48	48	48	48
1.4	Peak Average Speed by Facility (miles/hour)							
1.4.1	- Freeway	62	52	59	56	55	56	56
1.4.2	- Arterial	41	35	38	36	36	35	35
1.4.3	- All Facility	51	43	48	45	45	45	45
1.5	Daily Average Travel Length - All Person Trips							
1.5.1	- Travel Time	14.0	15.4	14.5	15	15	15	15
1.5.2	- Travel Distance	6.3	5.9	6.2	6	6	6	6
1.6	Daily Average Travel Length - Work Trips							
1.6.1	- Travel Time	17.7	19.4	18.0	19	19	19	19
1.6.2	- Travel Distance - Work Trips	9.1	8.0	8.5	8	8	8	8
1.7	Peak Average Travel Length - All Person Trips							
1.7.1	- Peak Travel Time	14.8	16.7	15.5	16	16	16	16
1.7.2	- Peak Travel Distance	6.7	6.1	6.5	6	6	6	6
1.8	Daily Average Travel Length - All CV Trips							
1.8.1	- Travel Time	15.0	17.2	15.7	16	16	16	16
1.8.2	- Travel Distance	8.3	8.5	8.5	9	8	8	8
1.9	Daily Average Travel Length - Truck Trips							
1.9.1	- Travel Time	15.3	17.4	16.0	17	17	17	17
1.9.2	- Travel Distance	8.5	8.8	8.7	9	9	9	9
1.1	Hours of Delay (daily)	27,446	139,455	77,308	107,973	112,912	107,165	111,428
1.10.1	Truck Hours of Delay (daily)	1,086	4,742	2,604	3,728	3,871	3,701	3,813

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	SE Data Scenario	2010	2040	CommPlan	CommPlan	AIT	CommPlan	AIT
	Transportation Network	2010	E+C	Highway	Moderate	Moderate	Transit	Transit
1.11	Percent of VMT experiencing congestion - All Day							
1.11.1	- Freeway	1.7%	17.1%	5.6%	9.7%	10.2%	9.1%	10%
1.11.2	- Arterial	3.3%	14.5%	7.0%	11.3%	11.1%	11.6%	11.6%
1.11.3	- All Facility	2.0%	13.7%	5.2%	9.0%	9.1%	8.9%	9.4%
1.12	Percent of VMT experiencing congestion - Peak							
1.12.1	- Freeway	3.0%	30.7%	9.8%	17.0%	17.9%	16.2%	17.6%
1.12.2	- Arterial	5.0%	22.7%	11.4%	18.0%	17.4%	18.3%	18.2%
1.12.3	- All Facility	3.1%	22.7%	8.7%	14.7%	14.9%	14.8%	15.5%
1.12.4	- Designated truck routes	5.0%	16.6%	6.7%	10.5%	11.2%	13.9%	15.3%
1.12.5	- Facilities w/bus routes	3.8%	20.0%	9.7%	14.6%	14.9%	15.0%	16%
2	<u>Mode Share Measures</u>							
2.1	All Trips - Daily							
2.1.1	- Drive alone (single occupant vehicle -SOV)	864,965	1,535,469	1,556,192	1,538,172	1,544,826	1,530,494	1,537,381
2.1.2	- Carpool (Share ride)	683,083	1,184,575	1,210,390	1,197,669	1,223,593	1,185,830	1,211,167
2.1.3	- Bus	50,579	71,588	74,672	63,559	63,772	68,596	68,440
2.1.4	- Rail	-	-	-	17,715	22,568	26,497	33,216
2.1.5	- Non-Motorized (Bike and Walk)	176,554	281,839	275,473	285,301	326,580	284,707	325,359
2.2	Work Trips - Daily							
2.2.1	- Drive alone (single occupant vehicle -SOV)	270,716	473,750	480,908	472,835	473,267	468,136	468,337
2.2.2	- Carpool (Share ride)	35,360	61,545	63,278	62,217	62,986	60,916	61,530
2.2.3	- Bus	12,852	19,080	20,448	17,800	17,968	20,967	20,963
2.2.4	- Rail	-	-	-	6,018	7,558	8,822	11,229
2.2.5	- Non-Motorized (Bike and Walk)	16,343	25,102	24,155	25,289	29,784	24,746	29,109
2.3	All Trips - Peak Hours							
2.3.1	- Drive alone (single occupant vehicle -SOV)	483,159	845,886	865,655	851,055	853,630	846,684	849,392
2.3.2	- Carpool (Share ride)	411,958	704,589	727,434	717,874	735,120	710,983	727,970
2.3.3	- Bus	25,416	34,741	37,027	31,306	31,408	34,465	34,348
2.3.4	- Rail	-	-	-	9,915	12,420	14,940	18,718
2.3.5	- Non-Motorized (Bike and Walk)	101,821	165,869	158,458	164,869	188,870	164,940	188,556
3	<u>Transit Measures</u>							
3.1	Transit Ridership by Prod. Ends	Total	Total	Total	Total	Total	Total	Total

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Performance Measures

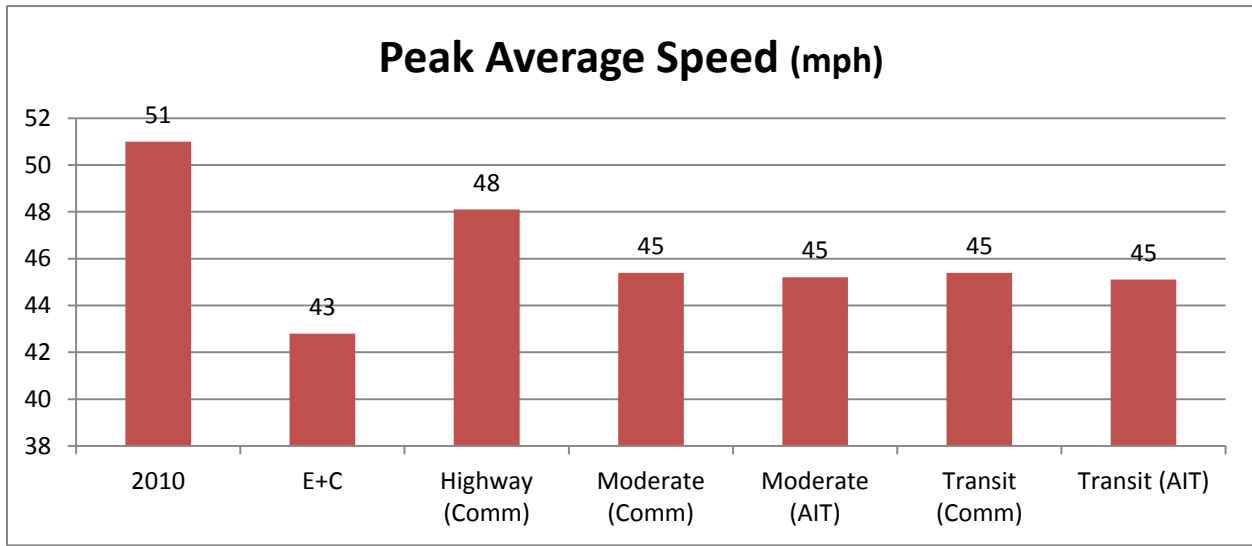
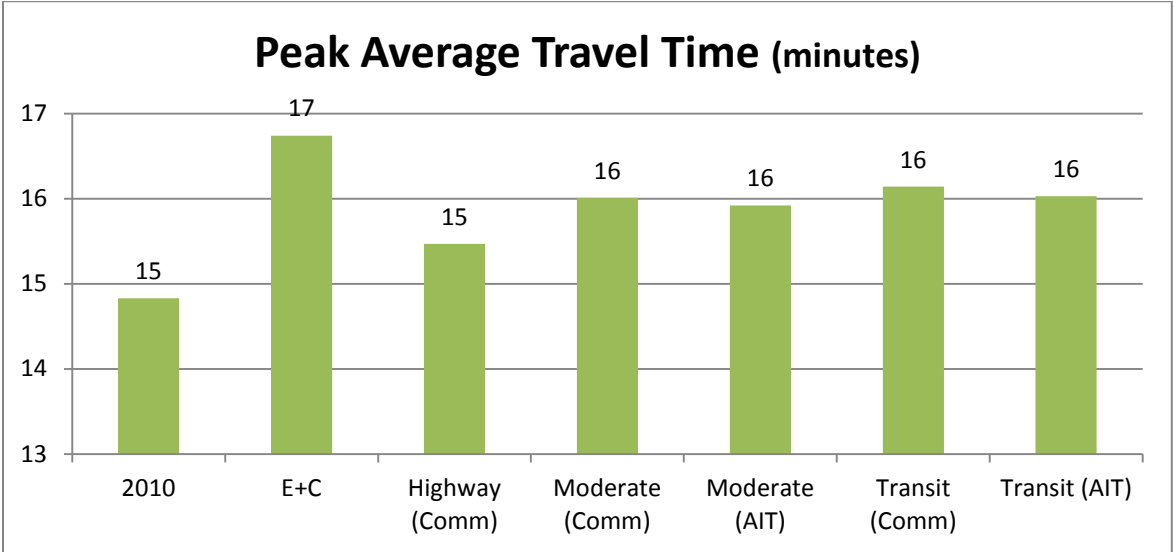
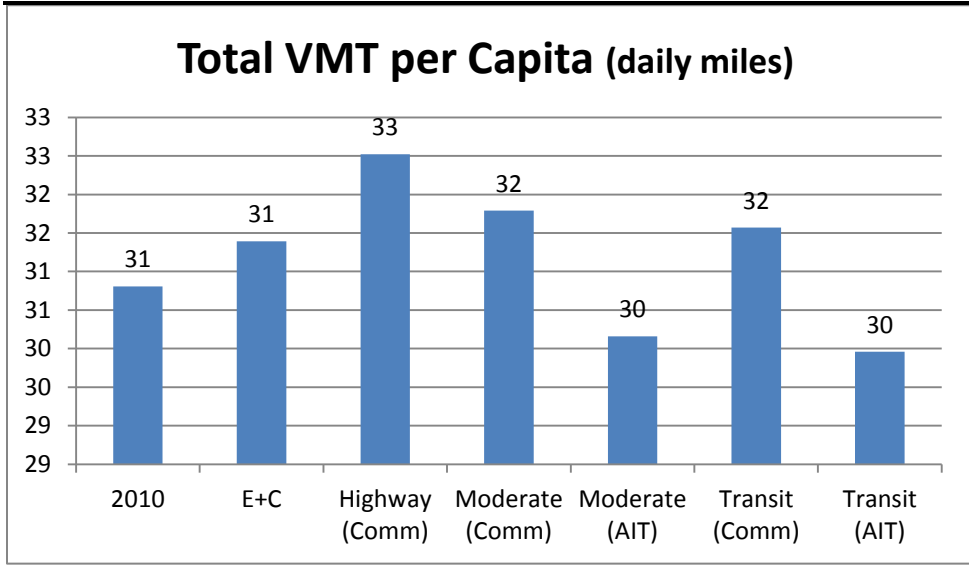
	SE Data Scenario	2010	2040	CommPlan	CommPlan	AIT	CommPlan	AIT
	Transportation Network	2010	E+C	Highway	Moderate	Moderate	Transit	Transit
3.1.1	- TTA (Including Rail)	5,362	8,853	9,858	42,511	51,742	67,978	85,859
3.1.2	- CAT	16,639	22,957	24,986	42,727	45,323	44,383	47,624
3.1.3	- CHT	26,788	38,460	39,061	41,292	41,580	46,595	46,413
3.1.4	- DATA	17,637	25,924	26,614	22,714	22,490	24,277	24,079
3.1.5	- NCSU	12,147	21,332	21,403	16,725	18,116	16,784	18,243
3.1.6	- DUKE	14,007	17,358	17,631	16,282	16,533	16,200	16,458
3.1.7	- OPT	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3.1.8	- CARY	1,412	2,136	2,266	12,477	14,921	13,780	16,226
3.1.9	Total	93,988	137,015	141,816	194,724	210,702	229,994	254,899
3.2	Ridership By Prod. Ends by Routes							
3.2.1	Rail CR CP EB (ID: 237)		N/A	N/A	2,093	2,702	599	990
3.2.2	Rail CR CP WB (ID: 238)		N/A	N/A	8,241	11,021	1,813	2,193
3.2.3	Rail LRT D-O 1 EB (ID: 239)		N/A	N/A	4,531	5,534	163	328
3.2.4	Rail LRT D-O 1 WB (ID: 240)		N/A	N/A	8,372	9,682	245	474
3.2.5	Rail LRT Wake 1 EB (ID: 241)		N/A	N/A	5,318	6,807	661	860
3.2.6	Rail LRT Wake 1 WB (ID: 242)		N/A	N/A	8,603	10,232	1,344	1,771
3.2.7	Rail CR Long EB (ID: 243)		N/A	N/A	N/A	N/A	2,171	2,913
3.2.8	Rail CR Long WB (ID: 244)		N/A	N/A	N/A	N/A	7,981	10,040
3.2.9	Rail CR West Cary NB (ID: 245)		N/A	N/A	N/A	N/A	672	793
3.2.10	Rail CR West Cary SB (ID: 246)		N/A	N/A	N/A	N/A	441	485
3.2.11	Rail LRT Apex-Cary NB (ID: 247)		N/A	N/A	N/A	N/A	3,389	4,628
3.2.12	Rail LRT Apex-Cary SB (ID: 248)		N/A	N/A	N/A	N/A	1,669	2,414
3.2.13	Rail LRT D-O 2 Long EB (ID: 249)		N/A	N/A	N/A	N/A	7,517	9,667
3.2.14	Rail LRT D-O 2 Long WB (ID: 250)		N/A	N/A	N/A	N/A	14,909	18,725
3.2.15	Rail LRT RDU Connection EB (ID: 251)		N/A	N/A	N/A	N/A	1,671	2,223
3.2.16	Rail LRT RDU Connection WB (ID: 252)		N/A	N/A	N/A	N/A	517	880
3.2.17	Rail LRT Wake 2 Long EB (ID: 253)		N/A	N/A	N/A	N/A	6,031	7,488
3.2.18	Rail LRT Wake 2 Long WB (ID: 254)		N/A	N/A	N/A	N/A	10,890	13,278
3.2.19	Rail LRT CHT Cnctr (ID: 301)		N/A	N/A	N/A	N/A	87	87
3.3	Total Rail Ridership		N/A	N/A	37,163	45,984	62,784	80,250
4	Demographics Measures							

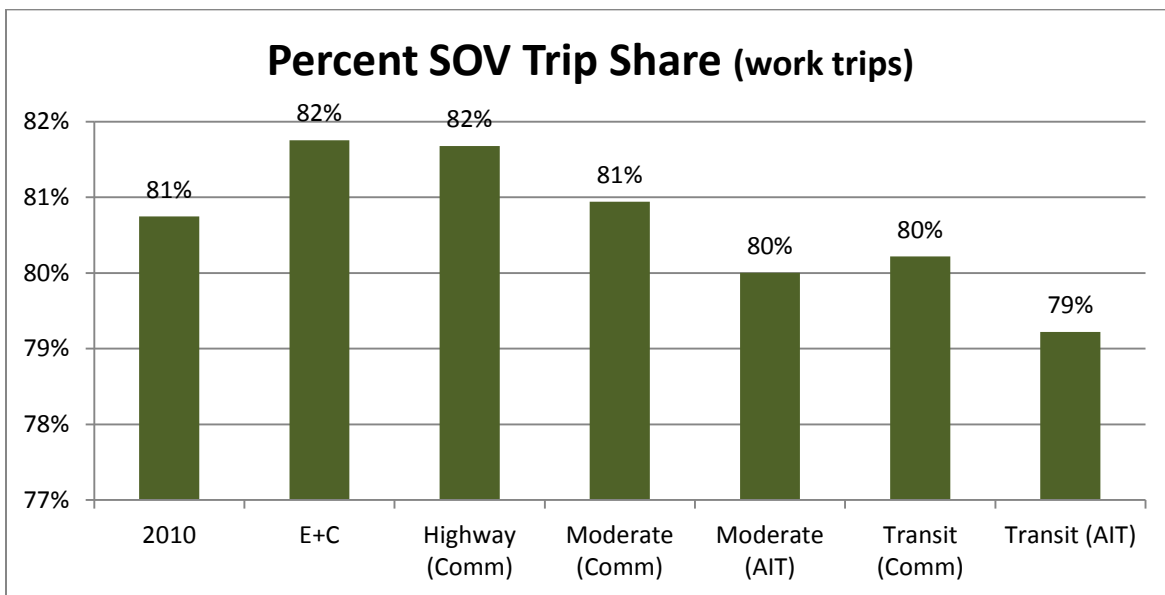
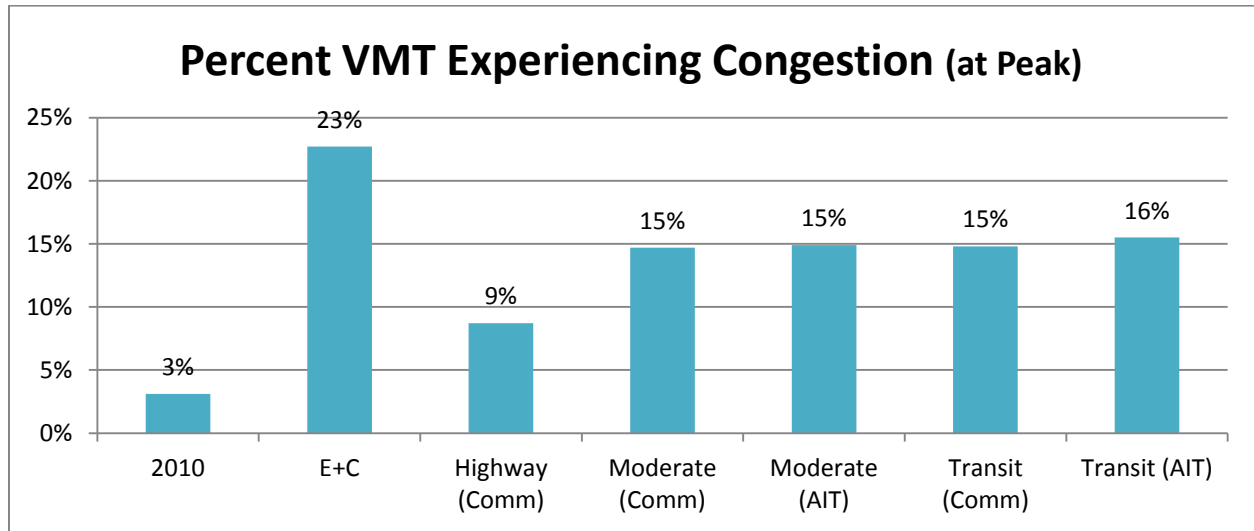
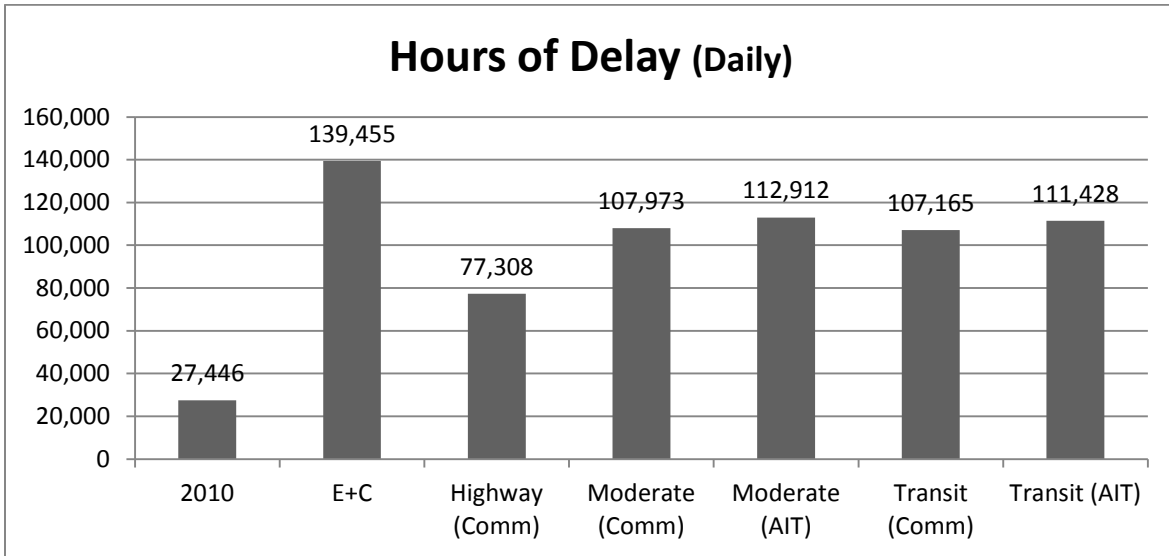
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	SE Data Scenario	2010	2040	CommPlan	CommPlan	AIT	CommPlan	AIT
	Transportation Network	2010	E+C	Highway	Moderate	Moderate	Transit	Transit
4.1	Population	403,494	632,102	632,102	632,102	669,124	632,102	669,124
4.2	Employment	261,566	427,876	427,876	427,876	428,337	427,876	428,337
4.3	Total Daily Person Trips	1,775,182	3,073,472	3,116,728	3,102,417	3,181,340	3,096,125	3,175,565
4.3.1	Work Person Trips	335,271	579,478	588,790	584,162	591,565	583,589	591,170
4.4	Total Daily CV Trips	137,279	211,324	211,324	211,324	211,592	211,324	211,592
4.4.1	Daily Truck Trips	57,715	85,991	85,991	85,991	85,992	85,991	85,992
5	Other Measures							
5.1	Lane Miles	2,472	2,548	2,979	2,737	2,737	2,664	2,664
CV = Commercial vehicles (which includes large and small trucks and vans).								
Trucks = Subset of CV that includes only large trucks.								
Transit <u>ridership</u> is higher than transit <u>trips</u> because transfers are counted multiple times in ridership numbers.								
Average Speed (1.3 and 1.4), Percent of Congested VMT (1.11 and 1.12) and Hours of Delay (1.10) calculations do not include								
local streets or centroid connectors (which often represent local streets in modeling networks)								

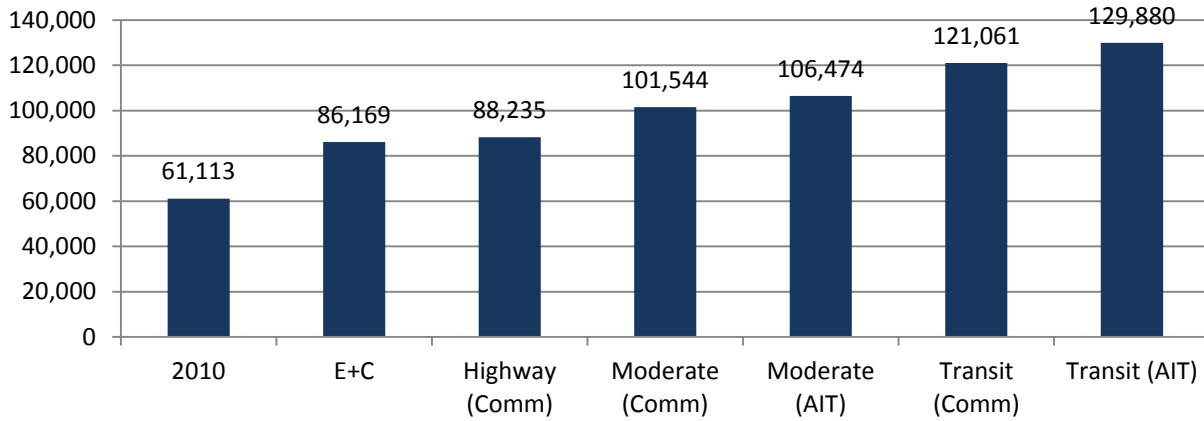
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Performance Measures – Graphs

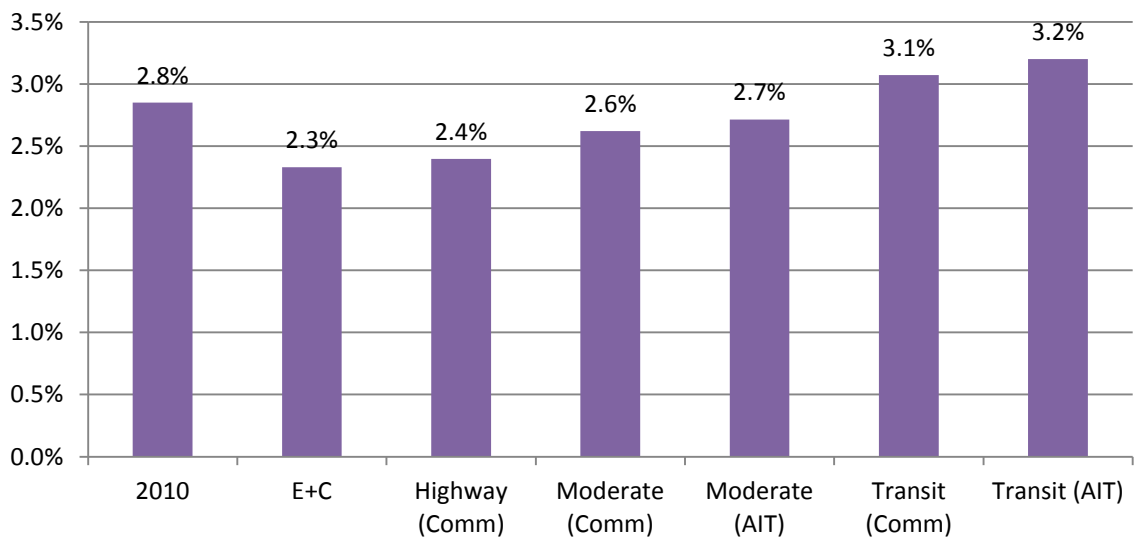




Transit Ridership



Transit Mode Share (daily)



Non-Motorized Trip Share (daily)

