

Non –Auto Mode Share

The available research indicates that the percent of work trips by residents in a Transit Oriented Development made by either taking transit, walking, or by bike varies but in general, is much higher than for the region overall. This is especially the case in maturing regions with heavy rail systems as noted in the tables below from the Transit Cooperative Research Program (TCRP) Report 128: “Effects of TOD on Housing, Parking, and Travel.”

Figure 11: Transit Trends for Journey to work trips for selected TODs

Region	Transit Share 1970 (%)	Transit Share 1980 (%)	Transit Share 1990 (%)	Transit Share 2000 (%)	% Change 1970-2000 (%)
Older and Redeveloping Regions					
Chicago TOD Average (n=8)	24.0	21.7	18.7	16.7	-30.0
Chicago MSA Average	22.1	16.6	13.7	11.5	-48.0
NY/NJ TOD Average (n=26)	15.7	13.1	13.6	16.4	4.0
NY/NJ MSA Average	35.5	26.7	25.4	24.9	-30.0
TOD Average	19.8	17.4	16.1	16.5	-17.0
MSA Average	28.8	21.6	19.5	18.2	-37.0
Maturing - Heavy Rail Regions					
Atlanta TOD Average (n=4)	20.9	22.5	24.9	19.3	-8.0
Atlanta MSA Average	9.2	7.7	4.6	3.7	-60.0
Miami TOD Average (n=2)	0.5	2.7	5.4	6.5	1094.0
Miami MSA Average	7.1	5.0	4.4	3.9	-45.0
San Francisco TOD Average (n=18)	17.8	22.3	20.1	21.0	18.0
San Francisco MSA Average	11.6	11.4	9.6	9.5	-18.0
Washington DC TOD Average (n=16)	19.0	27.4	32.5	30.0	58.0
Washington DC MSA Average	15.4	13.1	11.3	9.4	-39.0
TOD Average	14.6	18.8	20.7	19.2	32.0
MSA Average	10.8	9.3	7.5	6.6	-39.0
New Start - Light Rail Regions					
Portland TOD Average (n=5)	9.2	13.4	11.8	14.6	58.0
Portland MSA Average	5.5	7.6	5.0	5.7	3.0
San Diego TOD Average (n=6)	8.3	11.2	6.5	6.7	-19.0
San Diego MSA Average	3.7	3.4	3.5	3.4	-7.0
Los Angeles TOD Average (n=6)	6.2	11.5	10.2	8.4	37.0
Los Angeles MSA Average	4.2	5.2	4.7	4.7	11.0
Dallas TOD Average (n=6)	14.5	9.1	9.2	3.2	-78.0
Dallas MSA Average	5.2	3.5	2.3	1.8	-66.0
Denver TOD Average (n=2)	9.4	8.6	8.4	7.5	-20.0
Denver MSA Average	4.3	6.0	4.2	4.3	0.0
Salt Lake City TOD Average (n=4)	2.4	5.8	3.2	5.0	108.0
Salt Lake City MSA Average	2.2	5.0	3.1	3.0	36.0
TOD Average	8.3	9.9	8.2	7.6	-9.0
MSA Average	4.2	5.1	3.8	3.8	-9.0
Total TOD Average (n=103)	15.1	17.0	16.9	16.7	11.0
Total MSA Average (n=12)	19.0	14.1	12.0	7.1	-63.0

Source: Transit Cooperative Research Program Report 128, Transportation Research Board, 2008, page 9.

Figure 12: Walk/bike trends for Journey to work trips for selected TODs

Region	Walk Share 1970 (%)	Walk/Bike Share 1980 (%)	Walk/Bike Share 1990 (%)	Walk/Bike Share 2000 (%)	% Change 1970-2000 (%)
Older and Redeveloping Regions					
Chicago TOD Average (n=8)	13.6	14.1	9.8	8.9	-34.0
Chicago MSA Average	9.6	7.9	5.7	3.4	-64.0
NY/NJ TOD Average (n=26)	16.9	14.3	8.6	8.2	-51.0
NY/NJ MSA Average	10.0	10.2	7.3	5.8	-42.0
TOD Average	15.2	14.2	9.2	8.6	-44.0
MSA Average	9.8	9.0	6.5	4.6	-53.0
Maturing - Heavy Rail Regions					
Atlanta TOD Average (n=4)	13.1	16.1	7.9	7.4	-43.0
Atlanta MSA Average	4.4	3.2	3.1	1.4	-68.0
Miami TOD Average (n=2)	3.3	3.6	3.0	2.8	-15.0
Miami MSA Average	7.3	5.5	4.1	2.2	-70.0
San Francisco TOD Average (n=18)	19.8	19.1	14.9	16.1	-19.0
San Francisco MSA Average	8.6	9.1	6.4	4.4	-49.0
Washington DC TOD Average (n=16)	17.3	18.3	14.9	14.2	-18.0
Washington DC MSA Average	8.4	7.0	5.4	3.2	-62.0
TOD Average	13.4	14.3	10.2	10.1	-24.0
MSA Average	7.2	6.2	4.8	2.8	-61.0
New Start - Light Rail Regions					
Portland TOD Average (n=5)	23.2	23.4	19.5	20.4	-12.0
Portland MSA Average	7.8	7.4	5.4	3.7	-52.0
San Diego TOD Average (n=6)	13.2	22.6	9.4	7.7	-42.0
San Diego MSA Average	9.5	9.1	6.1	4.0	-58.0
Los Angeles TOD Average (n=6)	15.2	13.5	10.7	9.5	-37.0
Los Angeles MSA Average	7.7	7.6	5.1	3.2	-58.0
Dallas TOD Average (n=6)	31.9	9.4	26.1	11.2	-65.0
Dallas MSA Average	5.8	3.4	3.2	1.6	-72.0
Denver TOD Average (n=2)	13.4	6.3	7.9	5.5	-59.0
Denver MSA Average	7.8	6.4	4.9	3.1	-60.0
Salt Lake City TOD Average (n=4)	12.9	8.0	6.9	7.1	-45.0
Salt Lake City MSA Average	6.5	5.7	4.5	2.3	-65.0
TOD Average	18.3	13.9	13.4	10.2	-44.0
MSA Average	7.5	6.6	4.8	3.0	-60.0
Total TOD Average (n=103)	17.4	15.8	12.3	11.2	-36.0
Total MSA Average (n=12)	7.8	6.9	5.1	3.2	-59.0

Source: Transit Cooperative Research Program Report 128, Transportation Research Board, 2008, page 10.

TOD Density Thresholds and the CCT

In general, minimum job densities that are “transit-supportive” for fixed-guideway line-haul services – i.e., establish a ridership base for peak period service that is frequent and reasonably competitive with the auto trip is thought to be in the 25-50 jobs/acre range. The corresponding minimum number for residential development is in the 10-35 dwelling units/acre range. The ranges and mix can vary by station but these are the minimum densities to support transit. The area over which the density threshold is typically applied is the area within one-half mile of the station with the higher densities nearer the station (within ¼ mile of the station).

The staff has examined the station area densities along the CCT alignment using the COG Round 6.4 land use forecasts, for all stations except the LSC area. The Round 6.4 forecasts were developed in 2003 as the Department began analyzing I-270 corridor master plans. In the LSC area, jobs and housing were estimated for year 2030 and were provided to the MTA for their evaluation of the proposed alignment in August 2008.

A summary of the estimate of jobs and housing in the August 2008 forecasts used by MTA is presented below:

Figure 13: Staff’s August 2008 Forecast for 2030 Development

PROGRAM /TAZ/VARIABLE	SGLSC CLUSTER	PSTA CLUSTER	BELWARD CLUSTER	TOTAL/AVERAGE
	TAZ 218	TAZ 219	TAZ 220	
Research/Office/Lab SF	2,105,750	89,750	1,250,500	3,446,000
Residential SF & DU's	1,980,000	1,607,000	352,000	3,939,000
Retail SF	37,600	156,000	23,600	217,200
Industrial	760,950	56,700	1,678,950	2,496,600
Other (Cultural/Rec) SF	2,218,500	11,500	750,000	2,980,000
Subtotal	7,102,800	1,920,950	4,055,050	13,078,800
Land Area	9,458,223	2,223,447	6,941,704	18,623,374
FAR	0.75	0.86	0.58	0.70
HH/Acre	9.12	31.48	2.21	9.21
Jobs /Acre	67.45	17.59	64.58	60.43
Jobs Per DU	7.40	0.56	29.24	6.56
Total Jobs	14,645	898	10,292	25,835
Total Residents	3,445	3,551	778	7,775
Total DU's	1,980	1,607	352	3,939
Non Residential SF				9,139,800
Residential SF				3,939,000
Total				13,078,800

Figure 14 shows how these densities compare with other station area densities – both along the CCT and along Metrorail – where we are reasonably comfortable making those estimates.⁵

Figure 14: Round 6.4 Forecast for 2030 Development Comparisons

<u>CCT Stations - Sub Zones Are Round 6.4</u>	2030 HH/Acre	
	Within First Half Mile	2030 Jobs/Acre Within First Half Mile
Clarksburg Town Center	3	6
Shawnee Lane	2	13
COMSAT	4	15
Dorsey Mill	3	14
Manekin	4	21
Cloverleaf	3	14
Germantown Transit Center	6	13
Middlebrook Road	2	10
Metropolitan Grove	5	10
First Field	4	19
NIST	3	9
Quince Orchard	4	5
Decoverly	6	7
DANAC	4	15
Crown Farm	4	33
West Gaither	2	35
East Gaither	11	2
Shady Grove	10	22
<u>Metrorail Stations - Round 7.0</u>		
Shady Grove	13	15
Rockville	7	33
Twinbrook	8	31
White Flint	16	63
Grosvenor	14	11
Medical Center	1	41
Bethesda Metro	34	110
Freindship Heights	27	73

⁵ The estimates of station area densities are based upon traffic zones and in some cases, the traffic zones may extend slightly beyond one-half mile from the station in question. Nevertheless, the staff believes this approach or methodology provides a good relative comparison of the densities currently planned for the various station areas. It should be noted that Round 6.4 does not include the land use assumptions in the Germantown Draft Plan now before County Council and that Round 7.0 does not include land use assumptions in the White Flint Draft Plan.

Figure 15: Forecast for 2030 LSC Development Comparisons for TOD

<u>Other Activity Centers - Round 7.0</u>					
Milestone Center	2	2			
Lakeforest Mall	7	6			
Rock Spring Park	2	21			
Washingtonian Center	6	11			
<u>Life Science 2030 Using CCT August 2008 Forecast</u>					
SGLSC Cluster	9	67			
PSTA Cluster	31	18			
Belward Cluster	2	65			
Life Science 2030 Average	9	60			
<u>Density Threshold Minimums From Literature</u>					
Heavy Rail	12	50			
Light Rail	9	25-50			
BRT	5-15	25-50			
Express Bus	3-15	10			
Local Bus	3-8	5-10			
<u>TOD Guidelines - Station Area Planning</u>					
	<u>Urban Center</u>	<u>Suburban Center</u>	<u>SGLSC CLUSTER</u>	<u>PSTA CLUSTER</u>	<u>BELWARD CLUSTER</u>
Peak Transit Frequency	5-15	5-15	6	6	6
Station Area Total Housing Units Target	5,000 - 15,000	2,000 - 10,000	1,980	1,607	352
New Housing Density	50-150 du/acre	35-100 du/acre	9	31	2
Station Area Total Jobs Target	5,000-30,000	7,500 - 50,000	14,645	898	10,292
Minimum FAR - New Employment Development	2.5	4.0	N/A	N/A	N/A

The examination of the station area densities indicates that the initial 2030 land use forwarded to the MTA exceeds the generally accepted minimum densities for TOD station areas and is approximately double the station area job density planned for Crown Farm and the west side of King Farm. In general, the station area densities along the CCT at some other stations (excluding Germantown, Shady Grove, Crown Farm, King Farm – the more recently planned station areas) are below the minimum densities.⁶

In summary, the staff analysis of station area densities in Round 6.4 led to the conclusion that additional density should be concentrated at selected CCT stations where redevelopment potential is highest to improve CCT competitiveness for federal funding.

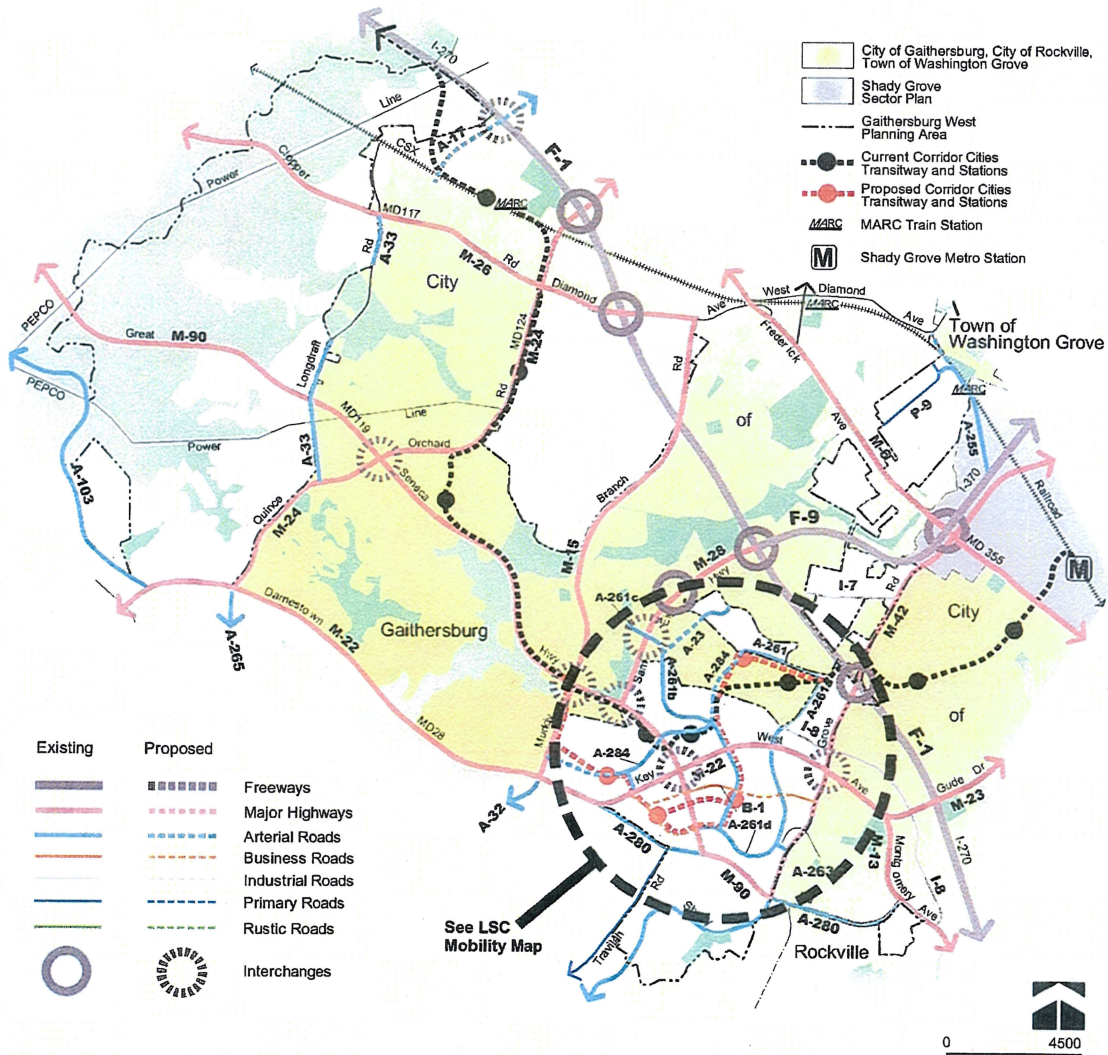
⁶ Again, it important to note that not all stations should necessarily meet the generally accepted density thresholds. The guidelines are intended to be applied along the entire corridor so that there is an indication of whether the land use in the corridor overall is dense enough to be “transit supportive”.

C. Street Network

Figures 16 and 18 replicate figures on pages 37 and 65 of the Gaithersburg West Master Plan, which present the proposed overall street network for the plan area and a closer view of the LSC district. The proposed road network has the following elements:

- A network of traffic-carrying, master-planned, business district streets (shown as fuschia lines for major highways and blue lines for arterials in both figures) designed to reflect the County’s new Road Code emphasis on multimodal access and stormwater management.
- A secondary network of business district streets (shown as orange lines in the figure on page 37) will provide internal site accessibility to the LSC with a focus on enhancing pedestrian connectivity by reducing block size.

Figure 16: Gaithersburg West Street Network



Specific streets described in the Plan and this Appendix include:

Sam Eig Highway

To support proposed development levels while maintaining a suburban level of mobility for automobile users, this Plan sees the need to reconstruct Sam Eig Highway as a grade-separated boulevard within a 250' wide right-of-way with three through lanes in each direction, shoulders suitable for peak-period, peak-direction use by BRT, and two-lane, one-way, frontage roads providing connections to Fields Road and Diamondback Drive and a flyover ramp connection from eastbound Great Seneca Highway to northbound Sam Eig Highway. A concept plan was developed to illustrate how this would function, and the minimum right-of-way expansion needed to accommodate improvements, shown in Figure 17.