Transportation Demand Management and Parking

Report to Planning Commission
Tysons Corner Committee

July 22, 2009

Presentation Outline

- TDM Study Survey Results
- TDM Recommendations
- Parking Recommendations

Commercial Survey Responses

- **Transit level of service:**
  - High <= ½ mile of Metrorail
  - Moderate = Peak hour bus headways <=20 min and all-day service
  - Low = other
- **Urban accessibility:**
  - Yes = 8+ retail/service opportunities within ¼ mile walk
  - No = Other

# of properties (# of employer and employee surveys)

	Urban Accessibility	
Transit	Yes	No
High	**0**	**3**
Mod	**2**	**3**
Low	**2**	**2**

Survey Findings: Employee Mode Share

	Drive Alone	Transit	Car/Vanpool	Bike/Walk	Telework
Overall (n=651)	87%	4%	4%	2%	3%

- 87% of commute trips were drive alone
- 10% were made by non-SOV mode.
- 3% were eliminated by use of telework.
  - 20% tried another mode in the past year

Survey Findings: Employee Survey Mode Share by Transit / Urban

Transit Availability and Urban Combinations

	Drive Alone	Transit	Car/Vanpool	Bike/Walk	Telework
• High Transit	56%	16%	29%	0%	0%
• Mod Transit– Urban	85%	6%	4%	1%	4%
• Mod Transit – N-Urban	92%	2%	4%	1%	1%
• Low Transit	92%	3%	2%	2%	1%

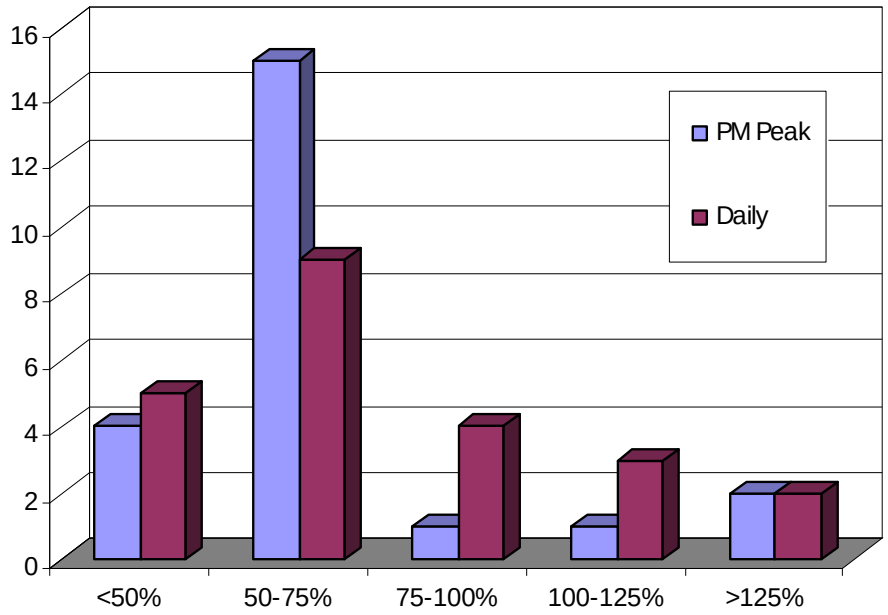
Traffic Counts: Commercial Buildings

- 23 commercial properties (Fairfax)
- 7 properties in Arlington (High/Yes category)

	Urban Accessibility	
Transit	Yes	No
High	**7**	**2**
Mod	**5**	**4**
Low	**5**	**7**

Traffic Counts: Commercial Buildings

- Most buildings lower than ITE rates
- Peak hour: 20 under, 3 over
- Daily traffic: 18 under, 5 over
- Clustered in 50-75% range
- Greater peak-spreading



Number of Buildings by % of ITE Rate (Fairfax Only)

Commercial Buildings – Peak Period Mode Shares from Traffic Counts

		SOV		HOV		Transit/Bike/Ped	
	Accessibility	Urban	N-Urban	Urban	N-Urban	Urban	N-Urban
Transit	**High**	**n/a**	**75%**	**n/a**	**9%**	**n/a**	**16%**
	Mod	**83%**	**68%**	**14%**	**28%**	**3%**	**4%**
	Low	**76%**	**90%**	**16%**	**8%**	**8%**	**2%**
	All Fairfax	76%		16%		8%	

- SOV increases as transit accessibility decreases
- Transit/Pedestrian/Bike share increases as transit accessibility increases

Survey Findings: Resident Commute Modes

Property	Drive Alone	Transit	Car/Vanpool	Bike/Walk	Telework
Market/ High Transit*	63%	35%	1%	0%	1%
Afford/Mod Transit	74%	16%	6%	0%	4%
Market/Low Transit**	67%	26%	1%	0%	6%

- At each property, non-DA modes had a notable share of weekly commute trips. DA share was less than 75% at all properties. But the sample size for Market / Low transit property was very small, so these results in particular should be viewed cautiously.

*Transit share = 32% Metrorail and 3% bus

**Transit share = 13% commuter rail and 13% Metrorail

Residential Traffic Counts

			% of ITE Trip Rate		Peak Mode Share		
Location	Transit	Urban	AM Peak	PM Peak	SOV	HOV	Trans/ Bike/Ped
(1) Springfield	High	Yes	42%	76%	86%	2%	12%
(2) Lee Hwy	Mod	Yes	80%	85%	65%	30%	5%
(3) Fair Oaks	Low	Yes	31%	33%	88%	6%	6%

- Wide variation in trip rates
- Metro station (#1) shows higher transit/ped mode share
- Higher HOV (#2) due to income/demographics?
- Low trip rate (#3) due to demographics?

Residential Data from Other Sources

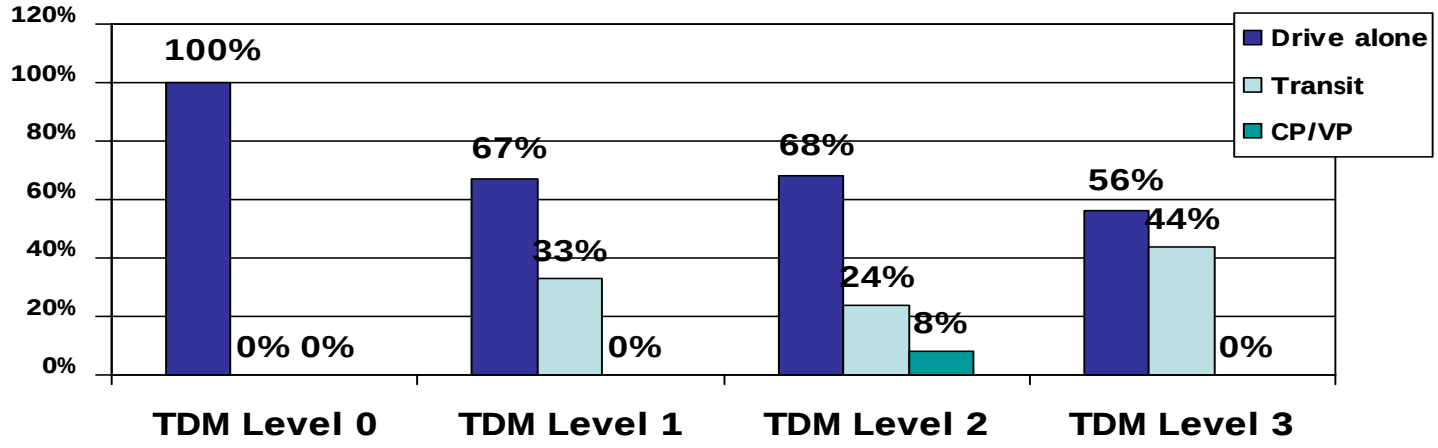
Location	Urban	Non-Urban
Auto mode share		
Washington, DC Metro	39% (inside beltway)	62% (outside beltway)
San Francisco BART	70-75%	
% of ITE trip rate		
Washington, DC Metro	38%	
San Francisco BART	55%	58%

Sources: *WMATA 2005 Development-Related Ridership Survey;*
Lund and Cervero (2004), *Travel Characteristics of TOD in California; Transit Cooperative Research Program Report 128, Effects of TOD on Housing Parking and Travel.*

Survey Findings: Resident Survey
Commute Mode by TDM / Parking Motivations

The drive alone rate decreased and the non-DA share increased when TDM was offered at work and home and when residents paid to park at work:

- TDM Level 0 = No TDM at work or home, Free parking
- TDM Level 1 = TDM at work, Parking free or LT $100 / month
- TDM Level 2 = TDM at work AND either TDM at home or $100+/month to park
- TDM Level 3 = TDM at work AND TDM at home AND $100+/month to park



National Evidence on TDM Program Impacts

TDM Program or Strategy	High Transit	Moderate Transit
Support, Promotion, Information	3-5%	1-3%
Alternative Commute Services	5-10%	5-10%
Financial Incentives	10-20%	5-15%
Combined Strategies		
With Free Parking	15-20%	10-15%
With Paid Parking	25-30%	15-20%

Source: professional judgment of project team based on review of TDM literature

Recommended Vehicle Trip Reduction Goals: Office Developments

First Phase

Level of Transit Service		High	Moderate
% reduction from ITE Rates (PM Peak Hr)	*Baseline*	*25%*	*20%*
	TDM reduction	*10 to 20%*	*5 to 15%*
% Reduction from ITE		**35 to 45%**	**25 to 35%**

TDM reduction value to be selected from range considering factors such as local environment, specific quality of transit services, urban accessibility, expected tenant characteristics, etc.

Recommended Initial Vehicle Trip Reduction Goals: Residential Developments

First Phase

Level of Transit Service		High	Moderate
% reduction from ITE Rates (Peak Hr)	*Baseline*	*25%*	*20%*
	With TDM	*5 to 15%*	*5 to 15%*
% Reduction from ITE		**30-40%**	**25-35%**

TDM reduction value to be selected from range considering factors such as local environment, specific quality of transit services, urban accessibility, expected tenant characteristics, etc.

Parking Counts – Commercial Buildings

- Parking utilization varies
- Affected by many factors
  - Office space utilization
  - Characteristics of workplace
  - Demographics
- None of the buildings were under-parked

Area	Spaces/ 1000 Occupied sq. ft.	Max. Parking Occupancy
Tysons	2.39	33%
Merrifield	2.50	70%
Tysons	2.78	87%
Reston	3.20	53%
Merrifield	3.56	38%
Herndon	3.73	54%
Herndon	3.74	40%
Fair Oaks	3.93	58%
Tysons	3.97	41%

Notes: based on 12-hour tube counts collected 6/08, 9/08 – 6/09

Parking Comparison with Neighboring Jurisdictions

Minimum Requirements, Spaces/Unit or Spaces/1,000 sq. ft.

Use	**Fairfax County**	Arlington County	Alexandria City	Montgomery County	Prince George's County
Townhouse	**2.7**	2.2	2.0	1.8-2.0	2.0
Multifamily	**1.6**	1.0-1.3	1.0-2.2	1.1-2.0	1.3-2.0
Office	**2.6-3.6**	0.8-3.2	1.7-2.2	1.9-2.7	2.5
Retail	**5.0-6.0**	< 4.0	2.0-6.0	4.3-5.0	5.0-5.5

Note: These figures include reductions and exemptions for proximity to Metro entrances. Numerous simplifying assumptions were made in developing this summary table.

Parking Recommendations
TODs/Transit Station Areas - Minimums

Phase 1 *-- Minimum Requirements, Spaces/Unit or Spaces/1,000 sq. ft. (% reduction)*

Use	Current	Zone A – < ¼ mile from Metro	Zone B – ¼ - ½ mile from Metro
Townhouses	2.7	1.75 (36%)	2.0 (27%)
Multifamily*	1.6	1.0-1.5 (6-38%)	1.1-1.6 (0-31%)
Office	2.6	2.0 (23%)	2.3 (12%)
Retail	5.0-6.0	< 4.0 (20-33%)	4.5 (10-25%)

Parking Recommendations
TODs/Transit Station Areas - Maximums

Phase 1 *-- Maximum Requirements, Spaces/Unit or Spaces/1,000 sq. ft. (125% of min.)*

Use	Current Minimum	Zone A – < ¼ mile from Metro	Zone B – ¼ - ½ mile from Metro
Townhouses	2.7	2.2	2.5
Multifamily	1.6	1.3 – 1.9	1.4 – 2.0
Office	2.6	2.5	2.9
Retail	5.0-6.0	5.0	5.6

Parking Recommendations TODs/Transit Station Areas

- Reduce base parking minimums
- Establish parking maximums – 125% of minimum
- Establish methods to calculate parking reductions
  - TDM reductions
  - mixed-use parking requirements
  - On-street parking off-site parking
- Negotiate developer agreements to support parking pricing, management, and “un-bundling” from leases and sales
- Encourage carpool, vanpool, and car-sharing preferential parking
- Establish parking management districts
  - Potential mechanism for TDM implementation
- Discourage surface parking