



Summary of M-NCPPC Parking Study
Presented to Montgomery County ZAP
June 21, 2010

Purpose of study

Concern about impact of excess parking in urban districts:

- Reducing Infill Development Viability – especially in urban centers, historic neighborhoods, older commercial centers
 - Encouraging “green field” development instead
- Encouraging auto travel options – free parking puts pay-as-you-go modal alternatives like transit at a disadvantage
- Eroding pedestrian environments – parking for each and every site increases pedestrian conflict points
- Adding to the cost of living – with “free” parking, parking costs are externalized in higher prices for goods, services, and housing

Study process

- Review of Parking Lot Districts
- Case studies of parking management districts
- Identify County goals
- Gather stakeholder input
- Identify approach options
- Assessment
- Recommendations

County goals

- Bring requirements in line with current practices
- Support sustainable transportation and development
- Promote access to support vibrant economies
- Protect communities and resources
- Promote multi-modal development environments
- Maximize supply efficiencies
- Reduce development costs
- Reduce paved surface impacts

Stakeholder input

What we heard from you:

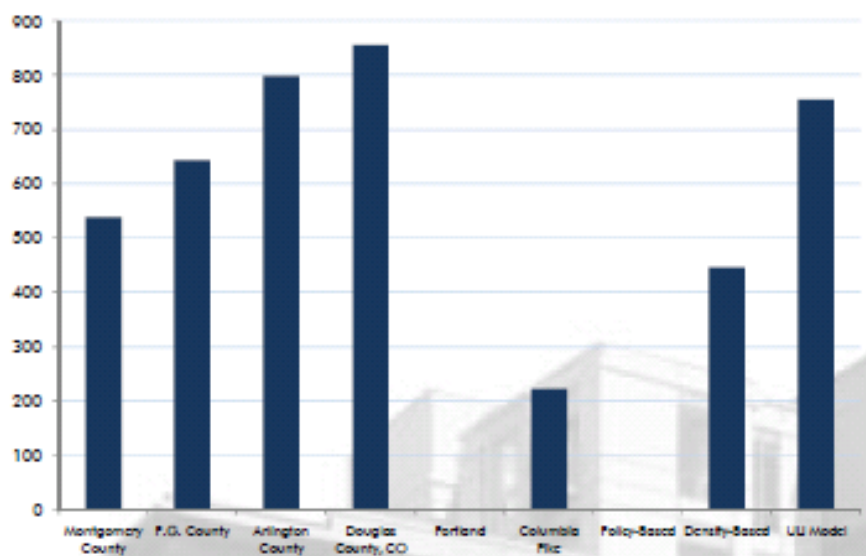
- Make walking safer & comfortable
- Park once
- Pricing/cost related to convenience
- Fear of merchant backlash
- Still want a space at home and at work
 - But many home garages become something else
- Need guest parking
- Many only need cars on the weekends
- Still like exclusive parking

Approach options

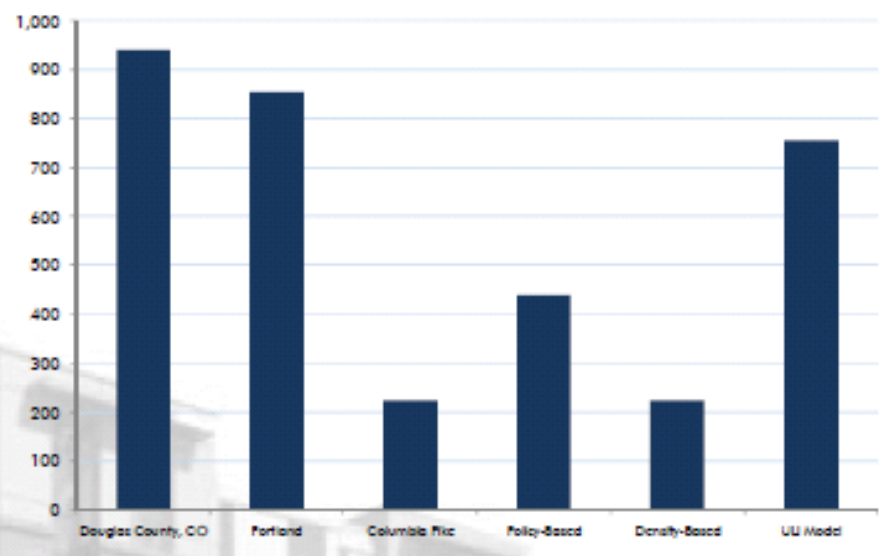
- Peer benchmarking
 - Arlington
 - Prince George's
 - Douglas Co. Colorado
- Best practices – Portland and Columbia Pike (Arlington)
- Policy-based approach
- Density formula

Scenario 1

MINIMUM REQUIREMENTS



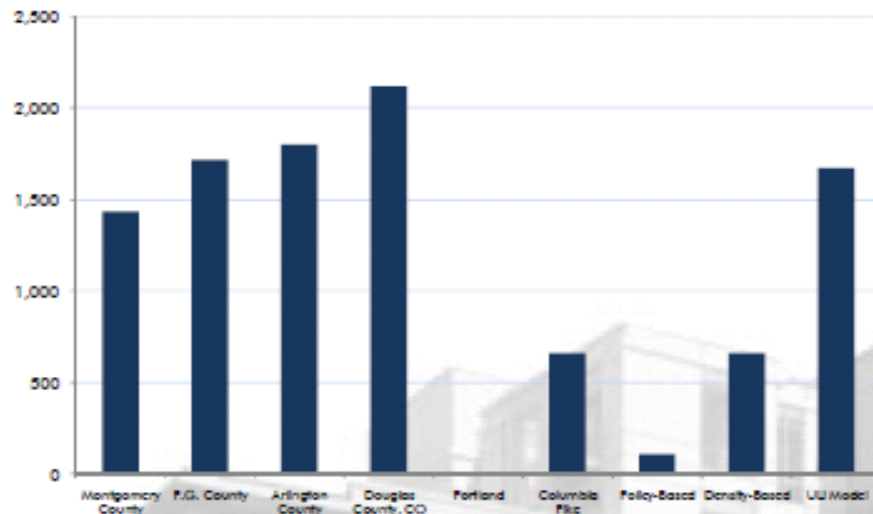
MAXIMUM ALLOWED



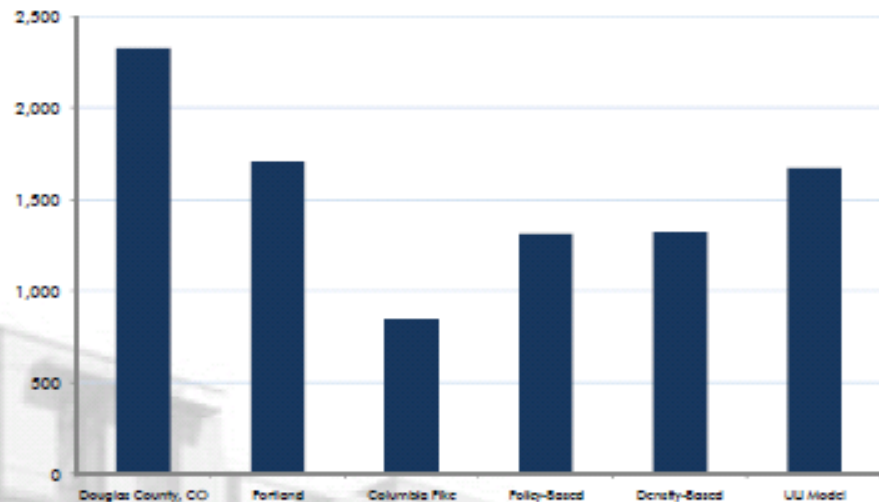
Uses	Montgomery County	Peer Average		Portland		Columbia Pike		Policy-Based		Density-Based		ULI Model
	Minimum	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Restaurant - 6,650 SF of GFA	100	74	98	0	106	7	7	0	67	7	13	755
Office - 210,000 SF of GFA	399	643	770	0	714	210	210	0	350	210	420	
Retail - 6,650 SF of GFA	33	49	73	0	34	7	7	0	22	7	13	
All	532	765	941	0	854	223	223	0	439	223	447	

Scenario 2

MINIMUM REQUIREMENT



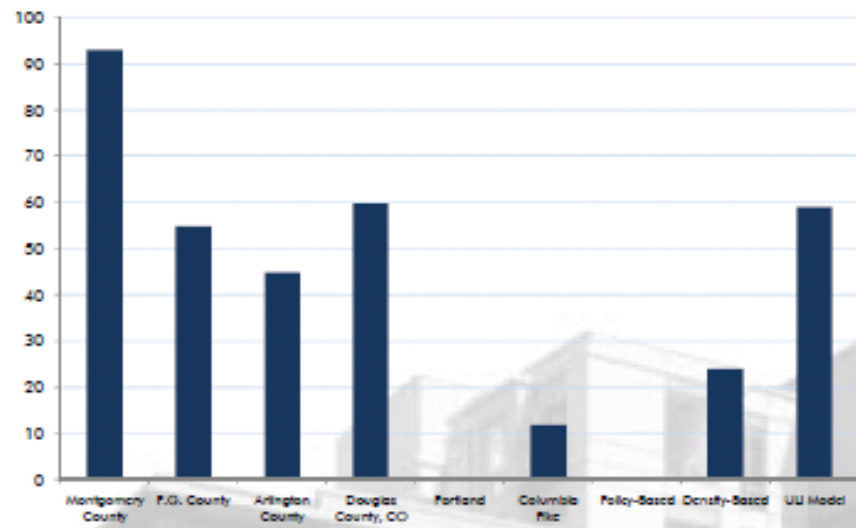
MAXIMUM ALLOWED



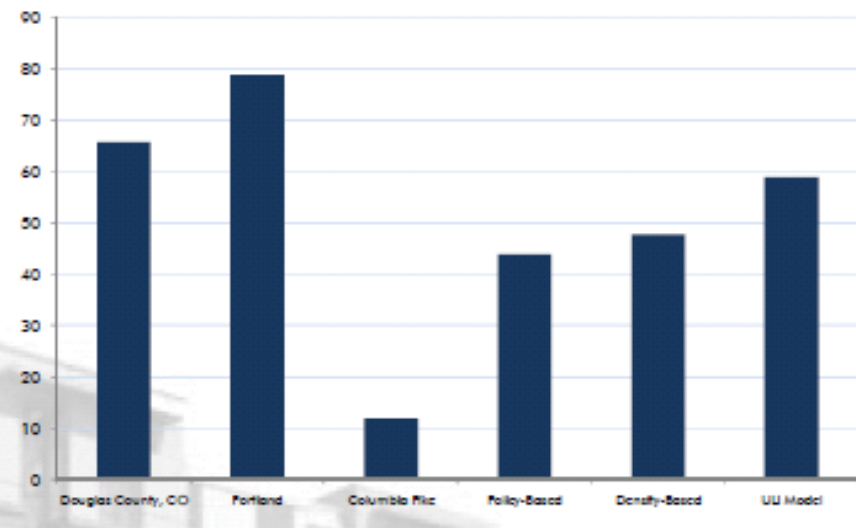
Uses	Montgomery County	Peer Average		Portland		Columbia Pike		Policy-Based		Density-Based		UU Model
	Minimum	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Residential - 210 Multi-Family Units	328	326	433	0	Unlimited	236	420	105	420	236	473	1,672
Restaurant - 18,568 SF of GFA	279	206	272	0	295	19	19	0	186	19	37	
Office - 386,879 SF of GFA	735	1,183	1,419	0	1,316	387	387	0	645	387	774	
Retail - 18,568 SF of GFA	93	161	204	0	95	19	19	0	62	19	37	
All	1,435	1,876	2,328	0	Unlimited	660	844	105	1,312	660	1,321	

Scenario 3

MINIMUM REQUIREMENTS



MAXIMUM ALLOWED



Uses	Montgomery County	Peer Average		Portland		Columbia Pike		Policy-Based		Density-Based		ULI Model
	Minimum	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Restaurant - 2,800 SF of GFA	42	22	29	0	44	3	3	0	28	6	11	59
Office - 7,144 SF of GFA	21	23	26	0	24	7	7	0	12	14	29	
Retail - 1,964 SF of GFA	10	9	11	0	10	2	2	0	4	4	8	
All	73	53	66	0	79	12	12	0	44	24	48	

Recommended approach

Hybrid:

- Columbia Pike (Arlington)
- CR Districts
- Density formula

Finalizing parking standards

- Identifying Land Uses
- Setting Baseline Standards
- Weighting Contextual Reduction Factors
- Parking Requirements Calculator

Land use consolidation

Proposed Parking Requirement Use Categories	CR-District Permitted Uses
Market Housing	Dwellings
	Live/ Work Units
Non-Market Housing	Personal Living Quarters
	Housing for Seniors, Disabled
	Group Homes
Office and General Work Space	Offices, General
	Advanced Technology and Biotechnology
	Laboratories
	Research, development, and related
	All permitted Industrial Uses
	Charitable and philanthropic institutions
	Radio and television broadcast studios

Land use consolidation

Proposed Parking Requirement Use Categories	CR-District Permitted Uses
Commercial	Farm and country markets
	Nursery, horticultural - retail or wholesale
	Seasonal outdoor sales
	Animal boarding
	All permitted Automobile-related uses
	Clinic
	Conference Centers
	Health clubs and gyms
	Dry Cleaning and laundry
	Retail trades
	Veterinary hospitals and offices
	Self-Storage
	Warehousing
Private clubs and service organizations	
Daycare facilities	

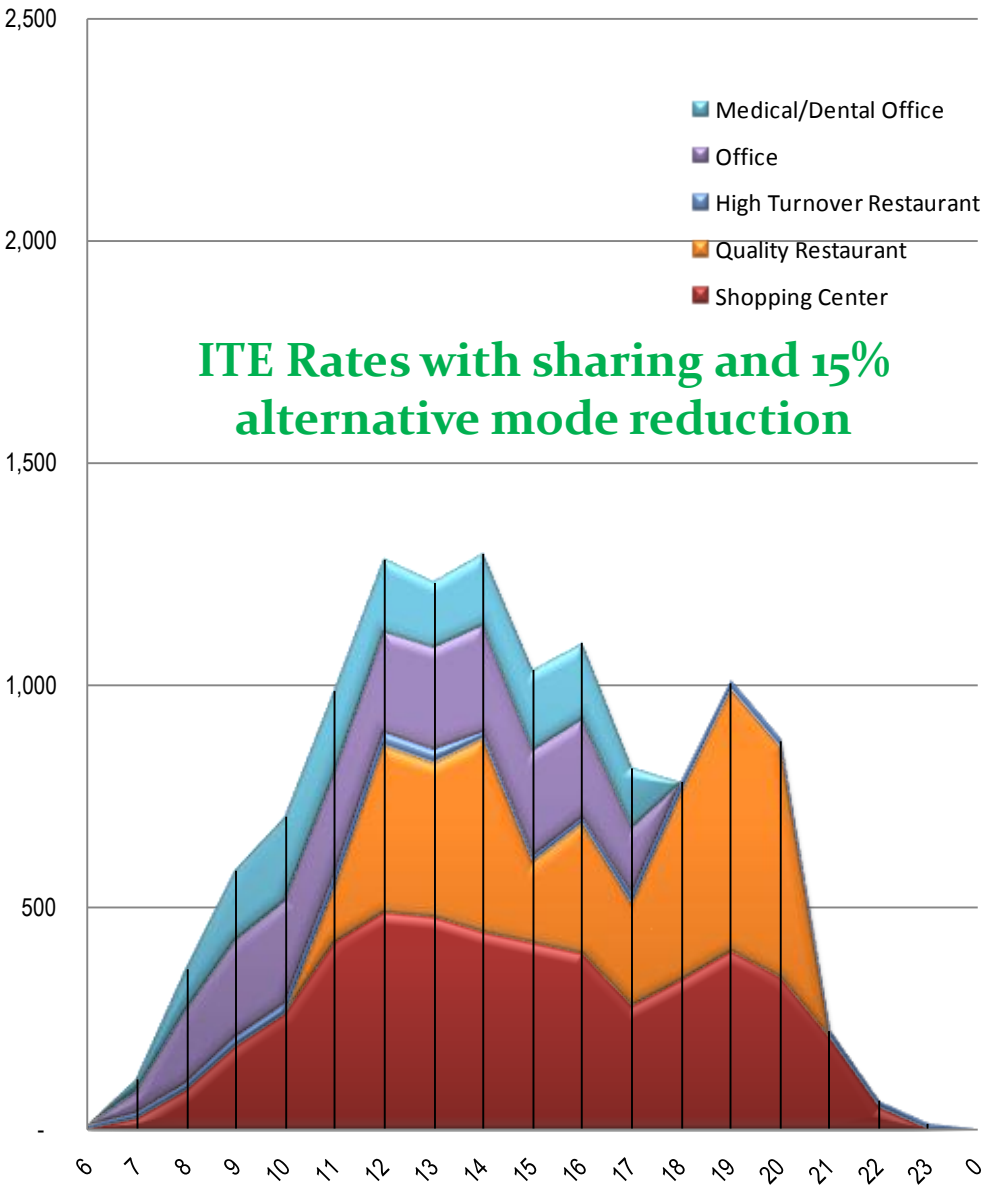
Land use consolidation

Proposed Parking Requirement Use Categories	CR-District Permitted Uses
Restaurant	Eating and drinking establishments
Events-Based Commercial	Religious institutions
	Cultural institutions
	Recreational facilities
Hotel	Hotels and Motels
Institutional	Educational institutions
	Hospitals
	Parks and playgrounds
	Publicly owned or publicly operated uses
	Ambulance or rescue squads

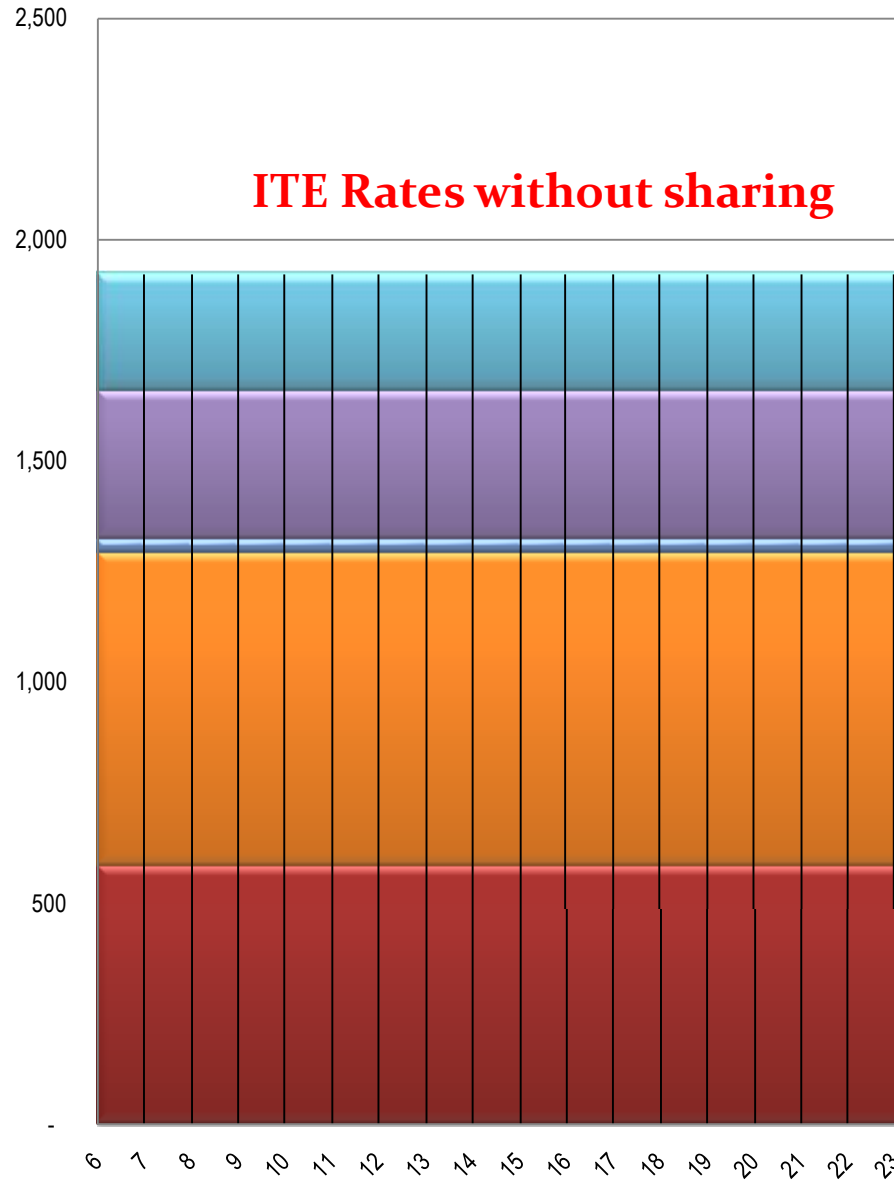
Shared versus Unshared Parking Demand

ITE Rates with sharing and 15% alternative mode reduction

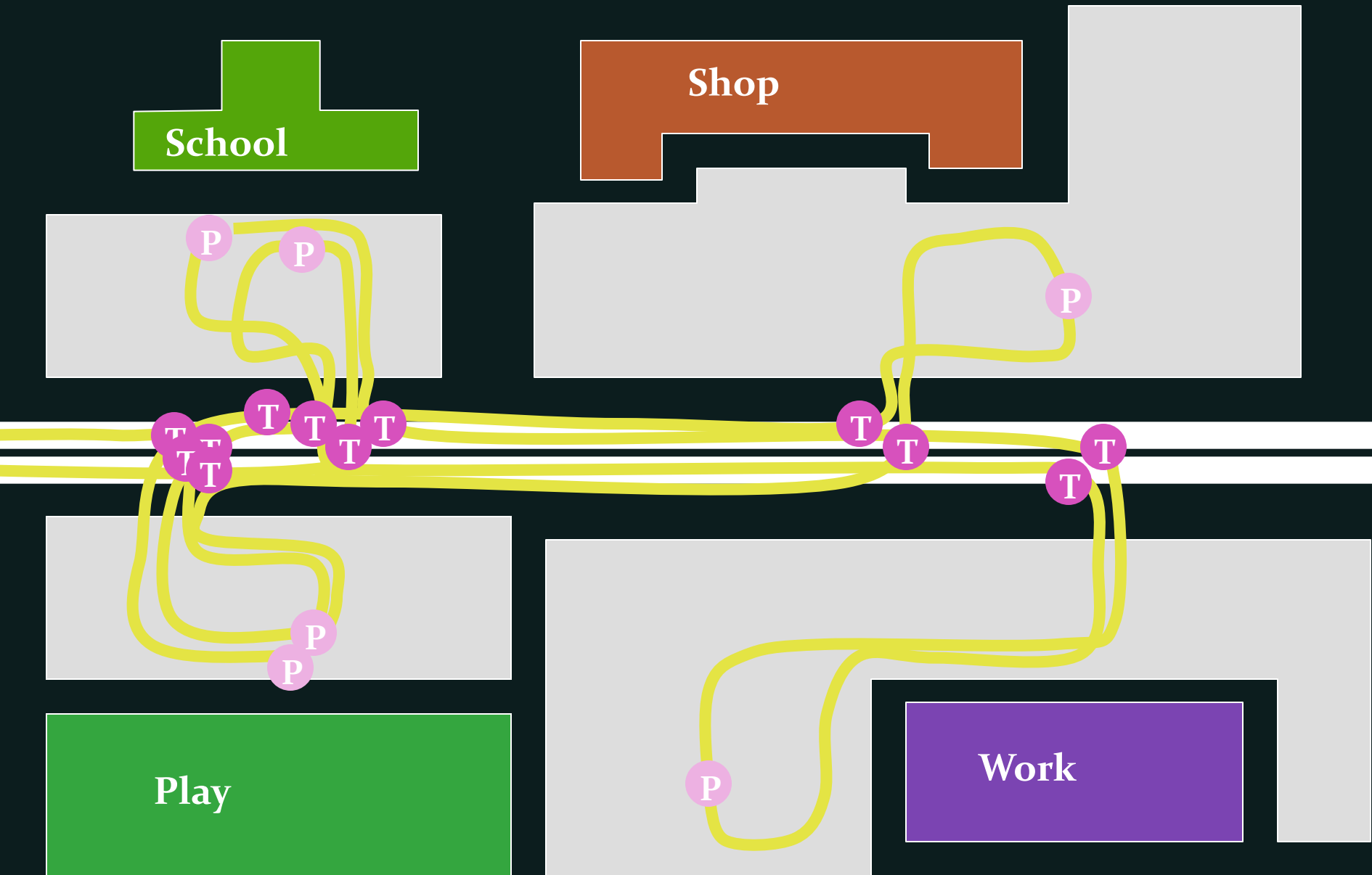
- Medical/Dental Office
- Office
- High Turnover Restaurant
- Quality Restaurant
- Shopping Center



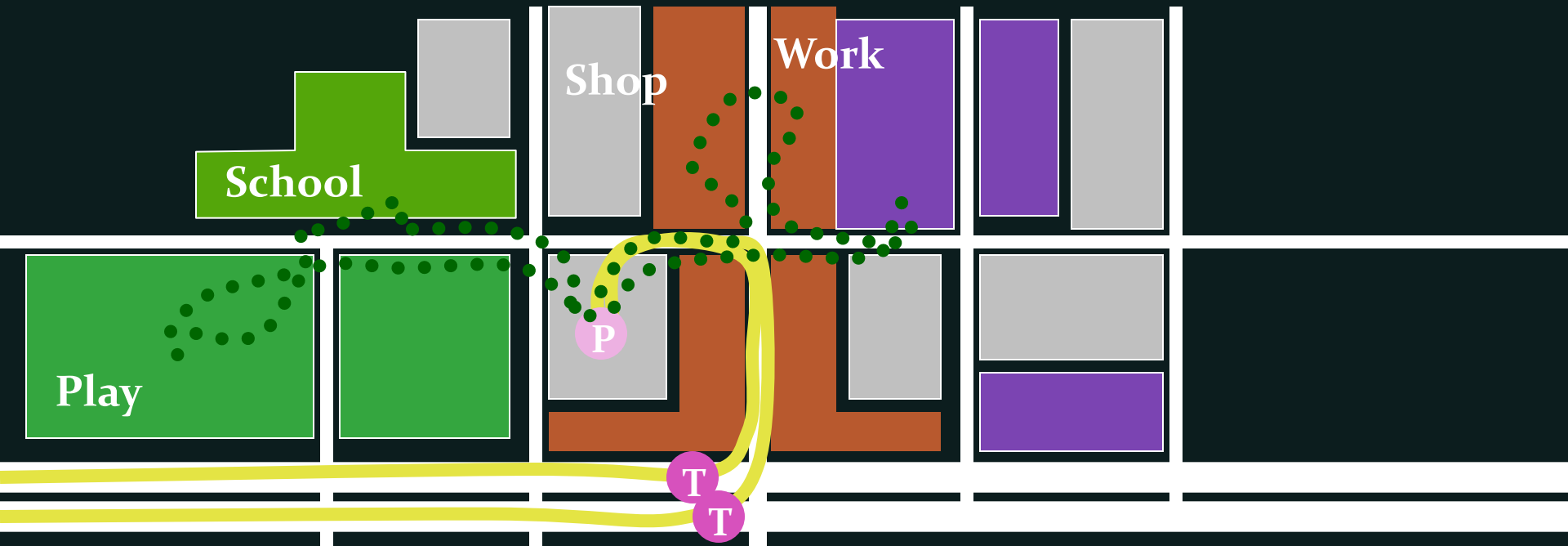
ITE Rates without sharing



Conventional Development



Mixed Use, Park Once District



Results:

- $< \frac{1}{2}$ the parking
- $< \frac{1}{2}$ the land area
- $\frac{1}{4}$ the arterial trips
- $\frac{1}{6}$ th the arterial turning movements
- $< \frac{1}{4}$ the vehicle miles traveled

Baseline standards

Land Use Category	Metric	Shared Parking Ratio	Reserved Parking Ratio	Projected Build Ratio
Residential				
Market Residential	Dwelling Unit	1.20	1.10	2.3
Non-Market Residential	Dwelling Unit	0.60	1.10	1.7
Non-Residential				
Office Space General	1,000 SF of GFA	2.00	1.75	3.75
Commercial	1,000 SF of GFA	1.25	0.20	1.45
Restaurant	1,000 SF of GFA	1.75	0.25	2
Events-Based	1,000 SF of GFA	0.75	0.10	0.85
Hotel	Guest Room	0.33	0.33	0.66

Contextual factors

Non-auto-drive mode share (NADMS)

- The specific, applicable NADMS for the proposed site
- The anticipated employee-parking demand share of overall parking demand

Transit Proximity

- 10% for all uses within 1/2-mile of a rail transit station
- 25% for all uses within 1/3-mile of a rail transit station
- 50% for Residential and Office/ General Work Space uses located within 1/4-mile of a rail transit station

Example: Silver Spring S2

Land Use Category	Metric	Base Ratio	Adjusted Ratio	Measure (Units or SF of GFA)	Parking Requirement	Reserved Parking Allowance	
Residential*							
Market Residential	Dwelling Unit	1.50	1.22	210	255.15	382.73	
Non-Market Residential	Dwelling Unit	0.75	0.61	0	0.00	0.00	
Non-Residential**							
Office	1,000 SF of GFA	1.25	1.01	386,879	391.71	293.79	
Commercial	1,000 SF of GFA	1.50	1.22	18,568	22.56	22.56	
Restaurant	1,000 SF of GFA	2.00	1.62	18,568	30.08	22.56	
Hotel	Rooms	0.50	0.36	0	0.00	0.00	
Events-Based	1,000 SF of GFA	2.00	1.62	0	0.00	0.00	
					Shared Parking Requirement	Total Parking Requirement	Reserved Parking Allowance
					482.63	699.51	721.63

Beyond Minimums and Maximums

Recommendations for additional, supportive parking standards include:

- Expanded bicycle parking requirements
- Requirements and incentives for car-share parking
- Promotion of unbundled parking
- Multi-Modal Credits toward minimum requirements:
 - On-Street Credits
 - Car-Share Spaces
 - Motorcycle and Scooter Parking
 - Bicycle Parking
 - Rideshare Support
 - Transit Investments
 - TDM Commitments

Implications for other areas of Montgomery County (Code Rewrite)

- Apply parking study approach?
- Increase minimum recommendations?
- Incentivize rather than waive contextual reductions?

Principal Use	Existing Regulation	ITE Peak Parking Demand Rates	Montgomery County vs. ITE
One Family Detached	Two spaces per dwelling unit	1.83 spaces per dwelling unit	<u>Above</u> ITE
Two Family	Two spaces per dwelling unit	1.20 spaces per dwelling unit	<u>Above</u> ITE
Apartment Dwelling	1 space for a dwelling unit with no separate bedroom, 1.25 spaces for each dwelling unit with one separate bedroom, 1.5 spaces in a dwelling unit with 2 separate bedrooms, and 2 spaces for a dwelling unit with 3 or more separate bedrooms.	1.20 spaces per dwelling unit	<u>Above</u> ITE
Hotels, Motels, or Inn	If located within CBD or transit station development area, ½ space for each guest room, plus 10 spaces for each 1,000 square feet of gross floor area used for ballrooms, meeting rooms, etc. For other locations, 7/10 of a space for each guest room.	0.91 spaces per room	Below ITE
Nursing Home	One space for each 4 beds and one space for every 2 employees on largest work shift.	0.39 spaces per bed	Similar to ITE
General Retail	Five parking spaces for each 1,000 gross leasable square feet.	Retail: 2 to 4 spaces per 1000 square feet	<u>Above</u> ITE
Office and Building	Office and Professional Building parking is based on proximity to the Metro and subject to reductions for participation in share-a-ride programs.	Office (suburban): 2.84 spaces per 1000 square feet	Mostly Below ITE
Townhouse & Townhouse Development	Two spaces for each townhouse. Requirements may be reduced if in CBD/transit development area.	1.73 spaces per dwelling unit	<u>Above</u> ITE
Restaurant or Similar Place Dispensing Food, Drink, or Refreshments	25 parking spaces for each 1,000 square feet of floor area devoted to patron use within the establishment and 15 parking spaces for each 1,000 square feet of ground area devoted to patron use on the property outside the establishment. Requirements may be reduced depending upon the location of the establishment.	0.5 spaces per seat for sit-down restaurants, 9.9 spaces per 1000 square feet of gross floor area for restaurants with a drive-through window.	<u>Above</u> ITE

FAST FOOD RESTAURANT WITH DRIVE-IN WINDOW (836)

Peak Parking Spaces Occupied vs: 1,000 GROSS SQUARE FEET LEASABLE AREA

On a: WEEKDAY

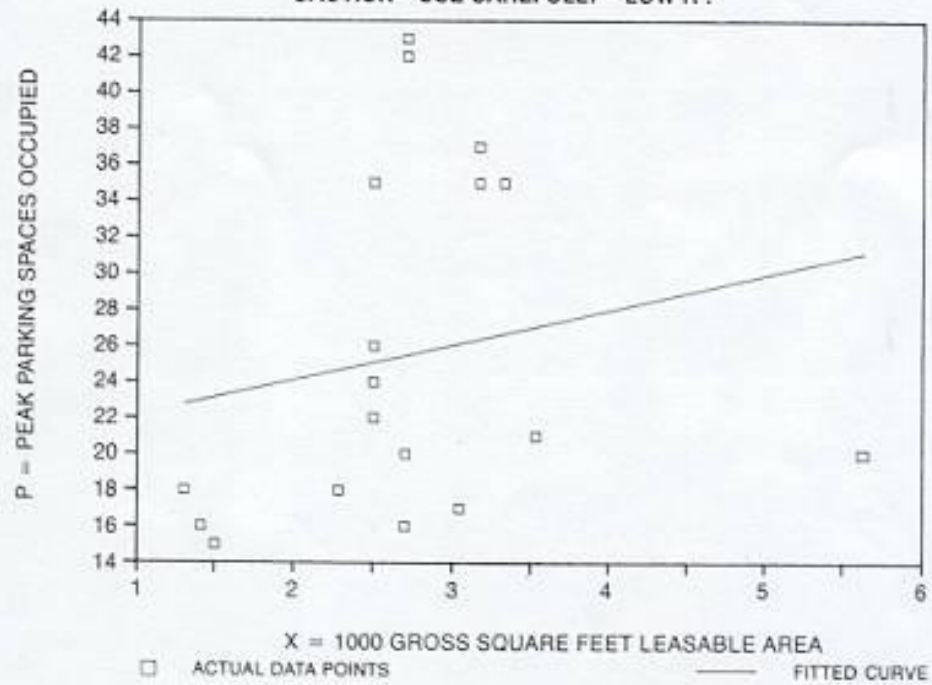
PARKING GENERATION RATES

Average Rate	Range of Rates	Standard Deviation	Number of Studies	Average 1,000 GSF Leasable Area
9.95	3.55-15.92	3.41	18	3

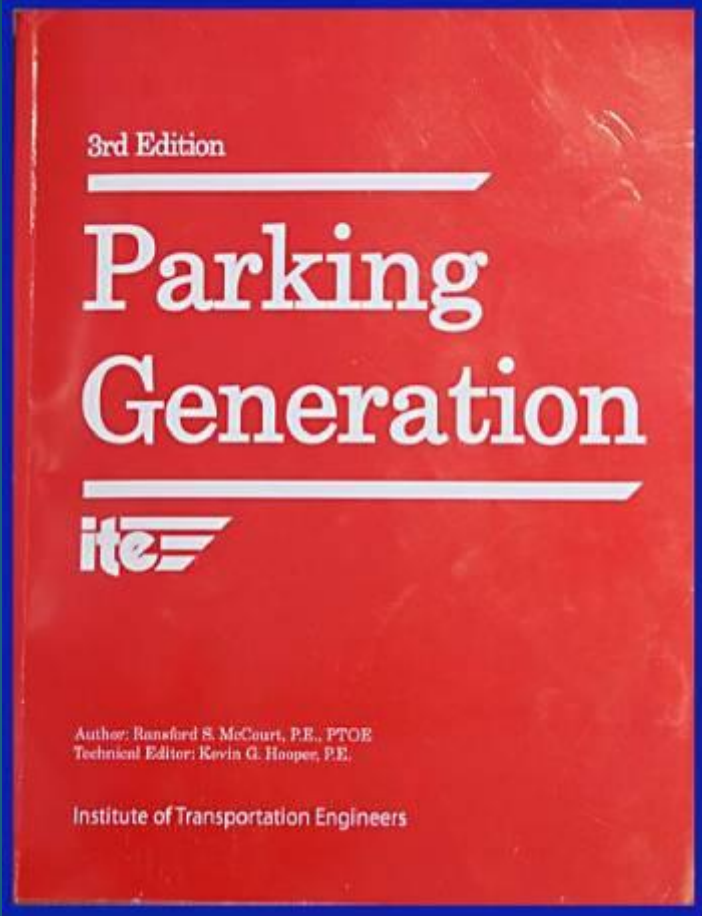


DATA PLOT AND EQUATION

CAUTION—USE CAREFULLY—LOW R².



Fitted Curve Equation: $P = 1.95(X) + 20.0$
 $R^2 = 0.038$



Discussion