

ITE Mid-Colonial District



Public Transit Accessibility vs. Employment: A Comparative Assessment of Counties/Cities in Northern Virginia



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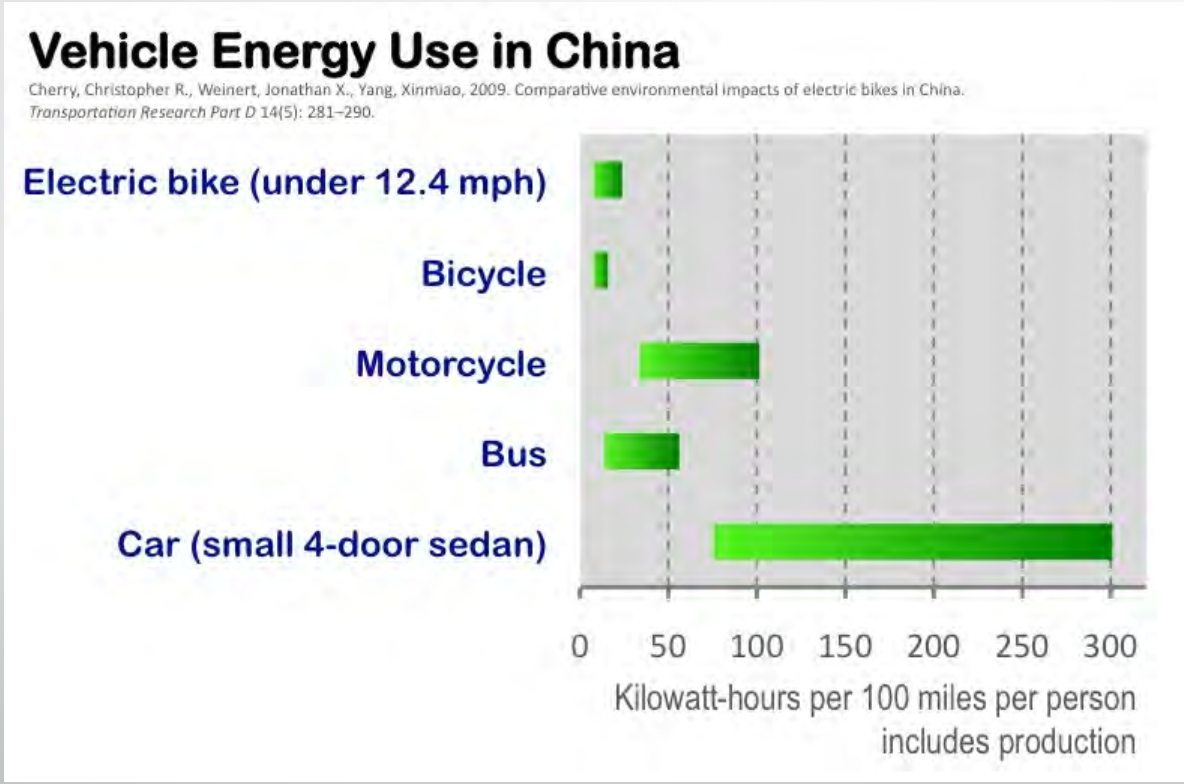
Why To Develop Public Transit Service?

- Introduction**
- Data
- Counties/Cities
- Data Analysis
- Conclusions



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Ballston, home of the National Science Foundation (Source: Living Rail)

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Why To Develop Public Transit Service?

“The public realizes five dollars in cash savings for each tax dollar invested in transit services.” (Lewis & Williams, 1999).

Study’s Goal:

To examine the association between public transit and the employment rate in Northern Virginia.

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Bus operators in Northern Virginia:

- Virginia Railway Express (VRE) (16 stops),
- Potomac and Rappahannock Transportation Commission (PTRC) (555 stops),
- MetroBus (3109 stops),
- Loudoun Count Transit (94 stops),
- Fairfax Connector (2677 stops),
- Arlington Transit Company (ATC DASH) (623 stops),
- City of Fairfax CUEBus (255 stops),
- and Arlington Rapid Transit (ART) (562 stops)

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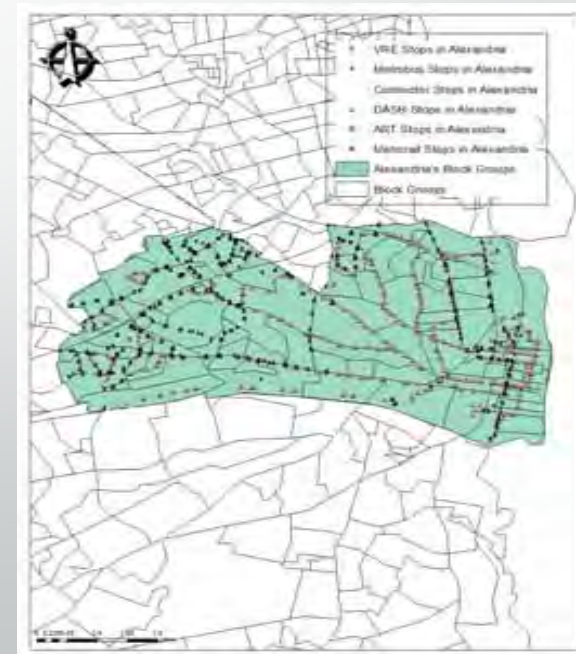
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- The Census Block Group TIGER/line shape files obtained from the United States Census Bureau, (2014)
- The number of paid employees by counties/cities from 1998 to 2013 was obtained from United States Census data and North American Industry Classification System
- Northern Virginia's employment status from 2006-2010 was evaluated using census block groups obtained from United States Census Labor Force Statistics of 2010

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Alexandria (City)



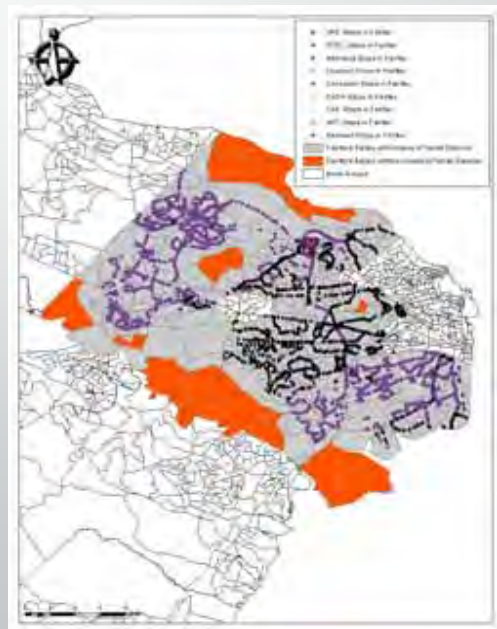
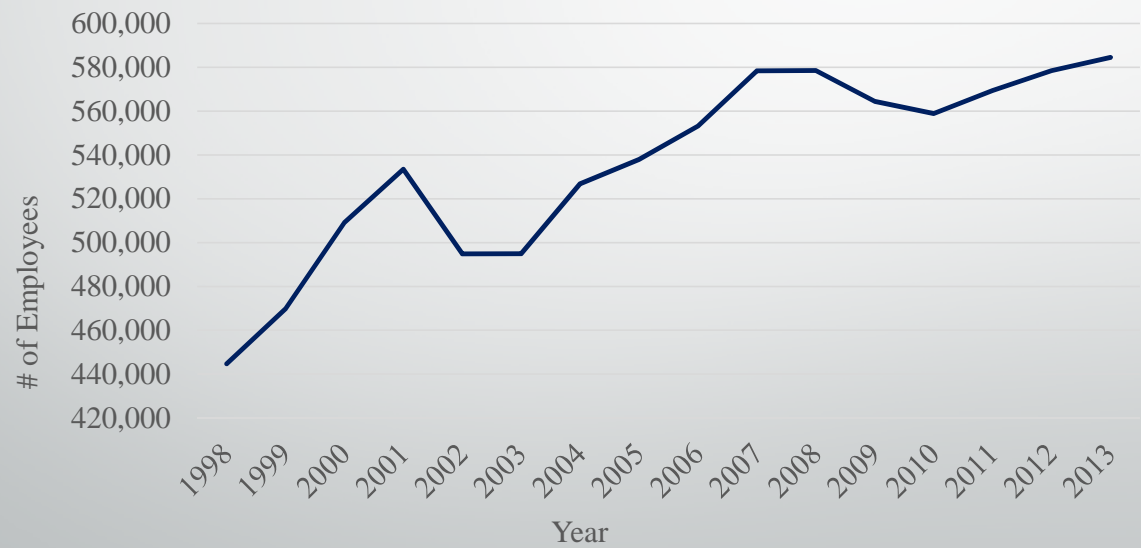
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Arlington (County)



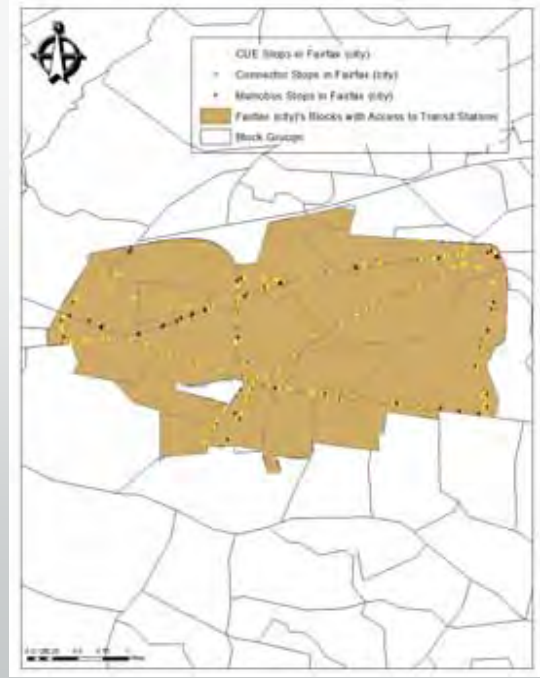
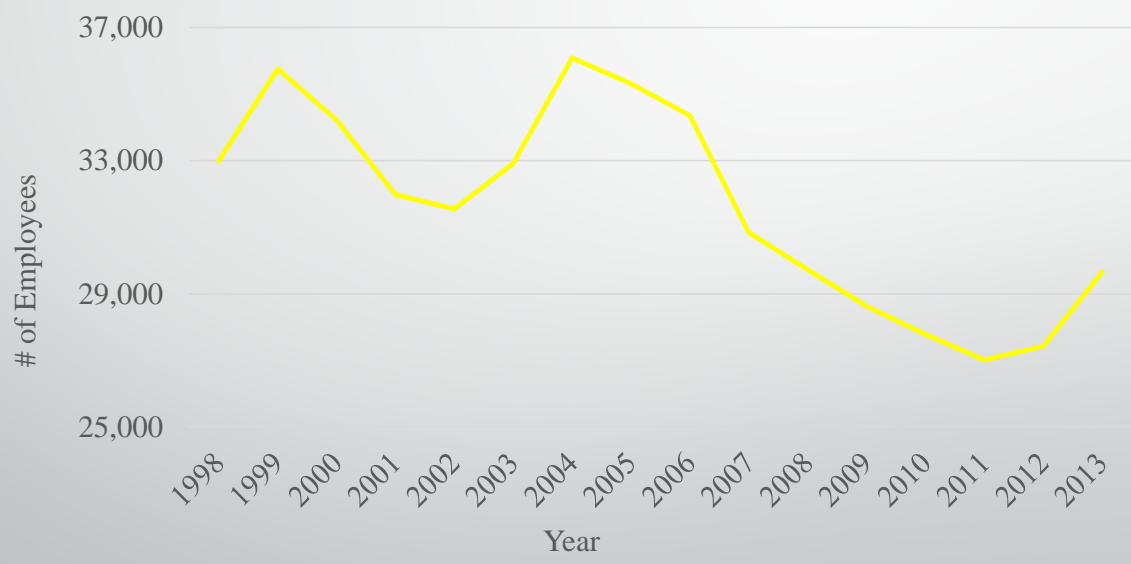
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Fairfax (County)



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Fairfax (City)



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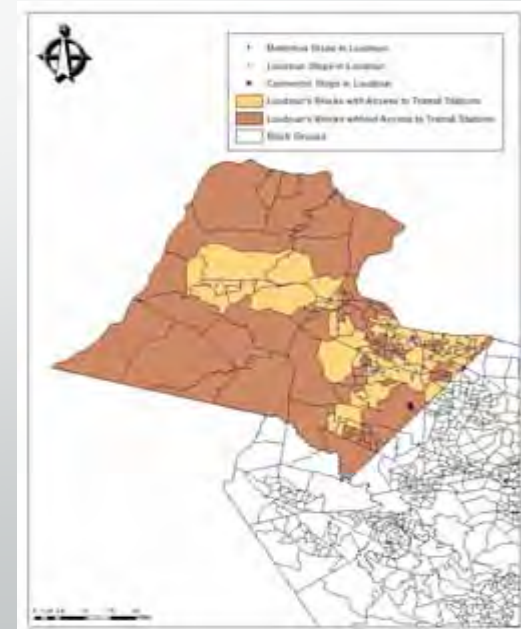
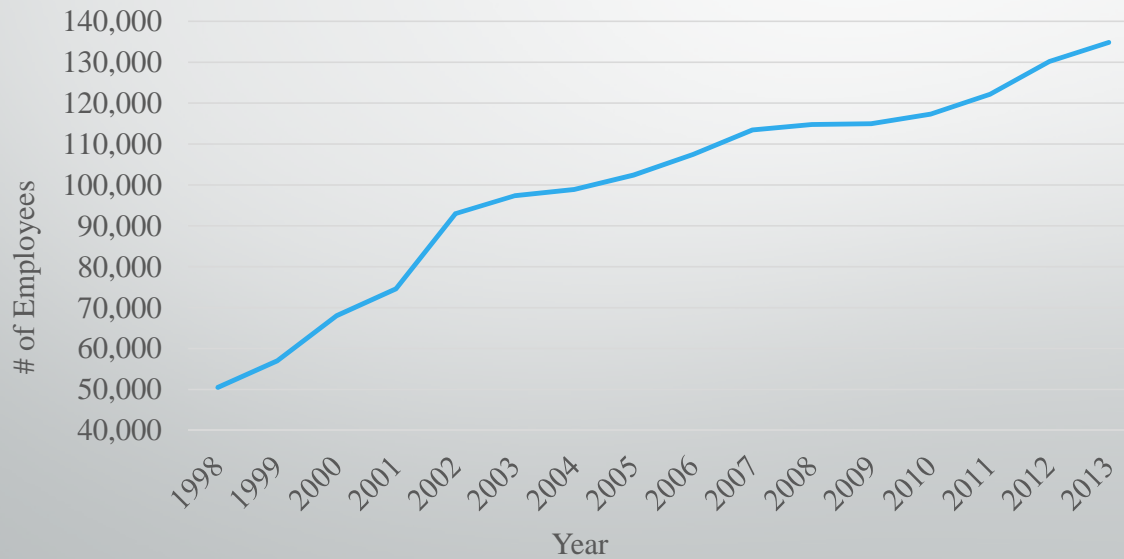
Conclusions

Falls Church (City)



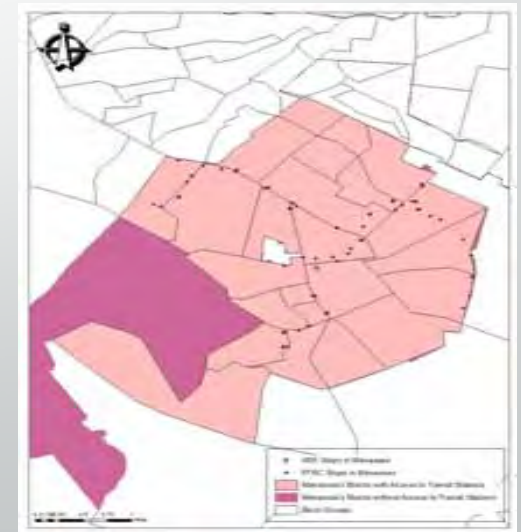
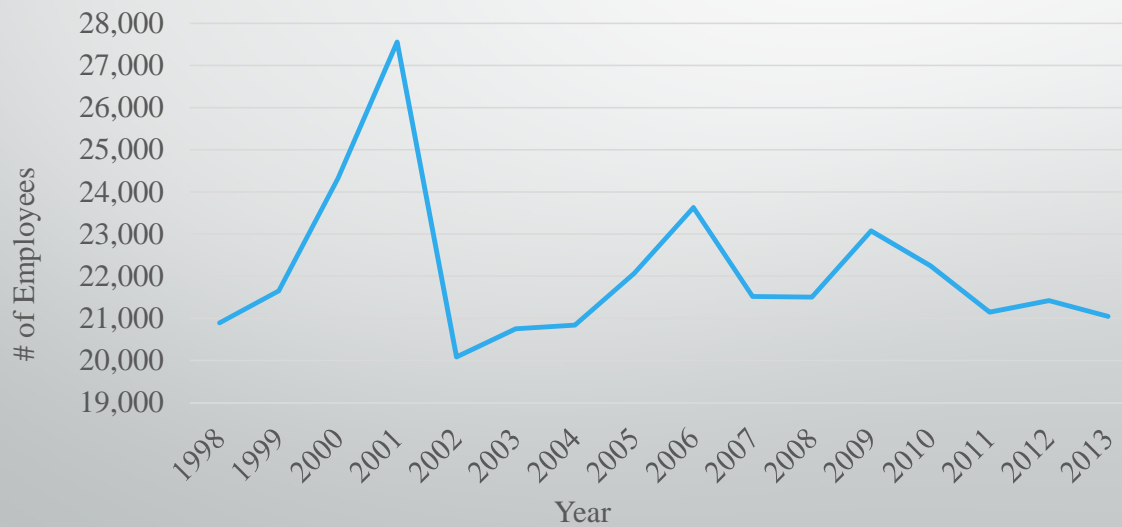
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Loudoun (County)



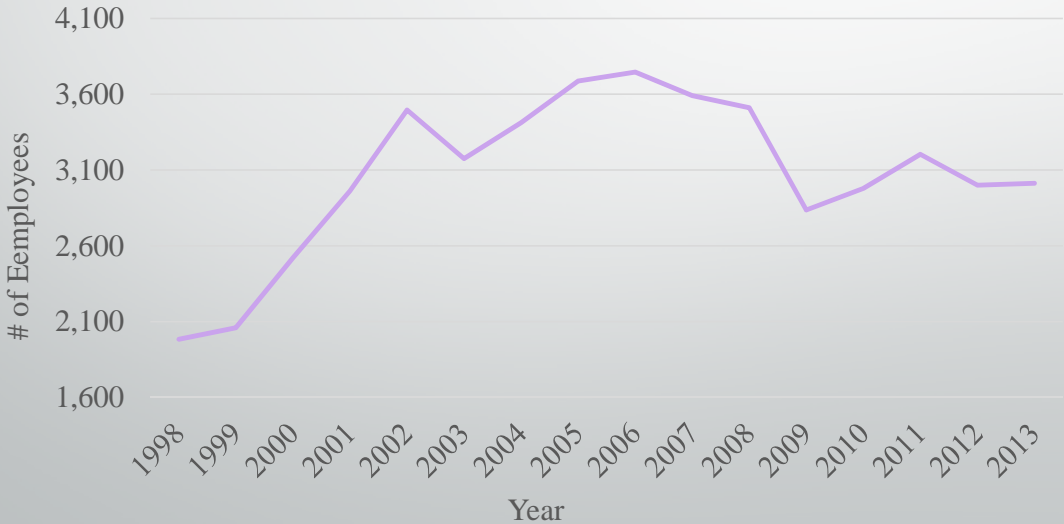
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Manassas (City)



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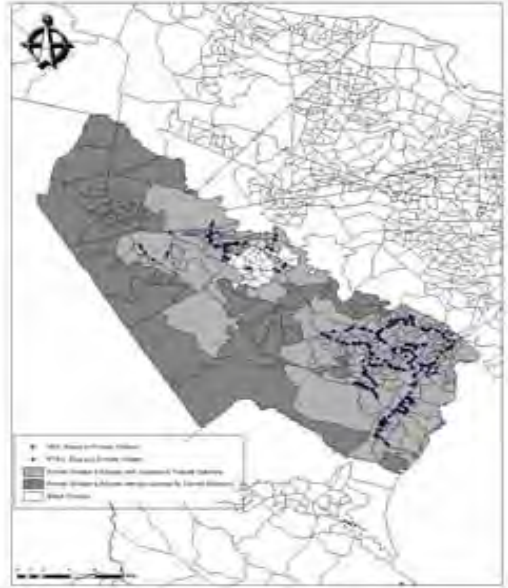
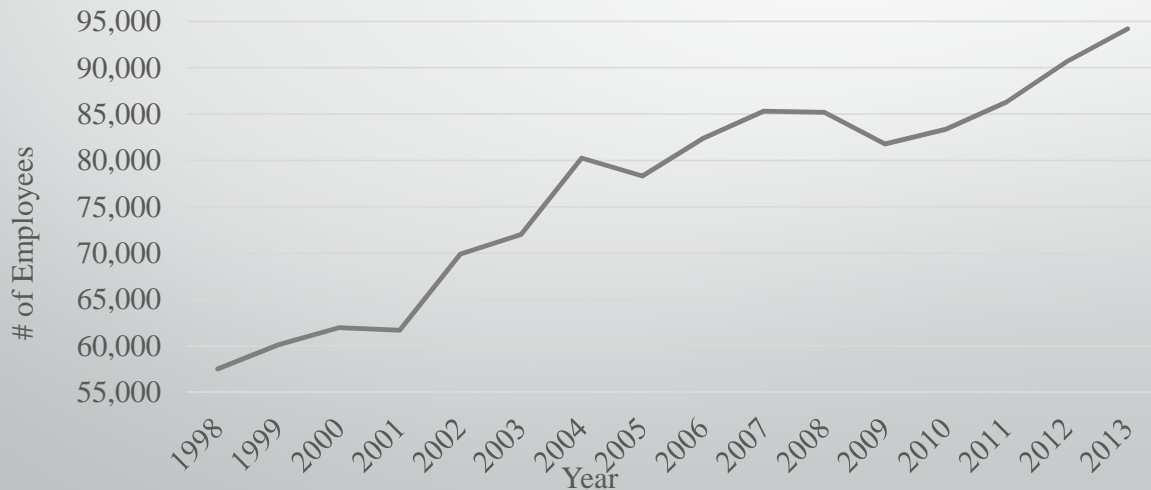
Manassas Park (City)



Prince William (County)



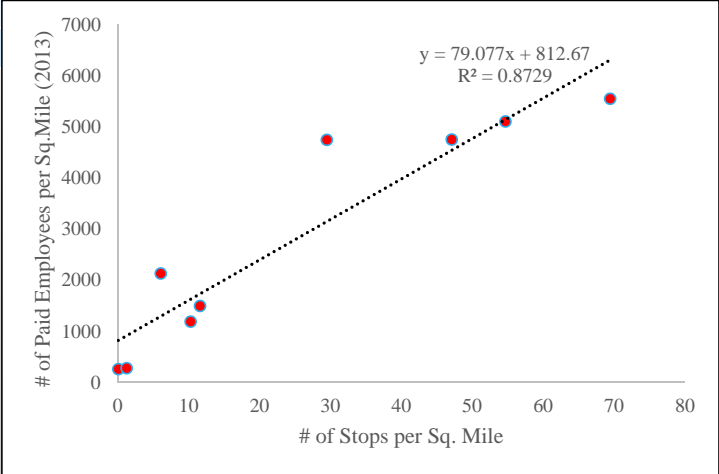
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Number of Transit Stops vs. Number of Paid Employees

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County/City	# of Stops	Area (Sq. miles)	# of Stops per Sq. Mile	# of Paid Employees (2013)	# of Paid Employees per Sq. Mile (2013)
Alexandria	1044	15.03	69.46	83,411	5549.63
Arlington	1420	25.97	54.68	132,556	5104.20
Fairfax (County)	4539	390.97	11.61	584,523	1495.06
Fairfax (City)	294	6.24	47.12	29,657	4752.72
Falls Church	59	2.00	29.50	9,487	4743.50
Loudoun	46	515.56	0.09	134,845	261.55
Manassas	60	9.88	6.07	21,046	2130.16
Manassas Park	26	2.53	10.28	3,012	1190.51
Prince William	426	336.4	1.27	94,198	280.02



Number of Transit Stops vs. Job Growth

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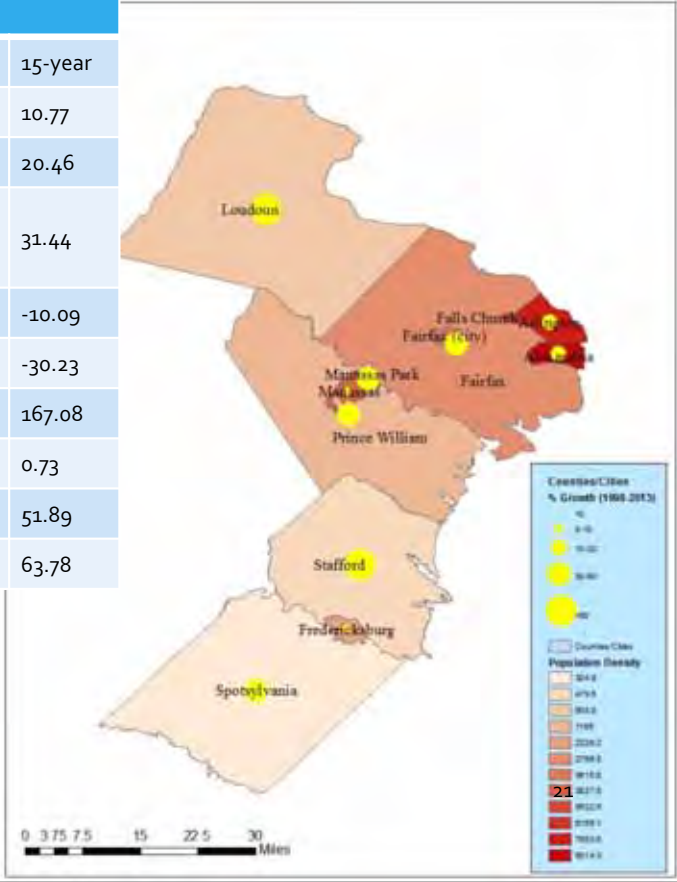
Conclusions

$$\% \text{ Employment Growth} = \frac{(\# \text{ of employees in 2013} - \# \text{ of employees in base year, 1998})}{(\# \text{ of employees in base year, 1998})} * 100$$

Number of Transit Stops vs. Job Growth

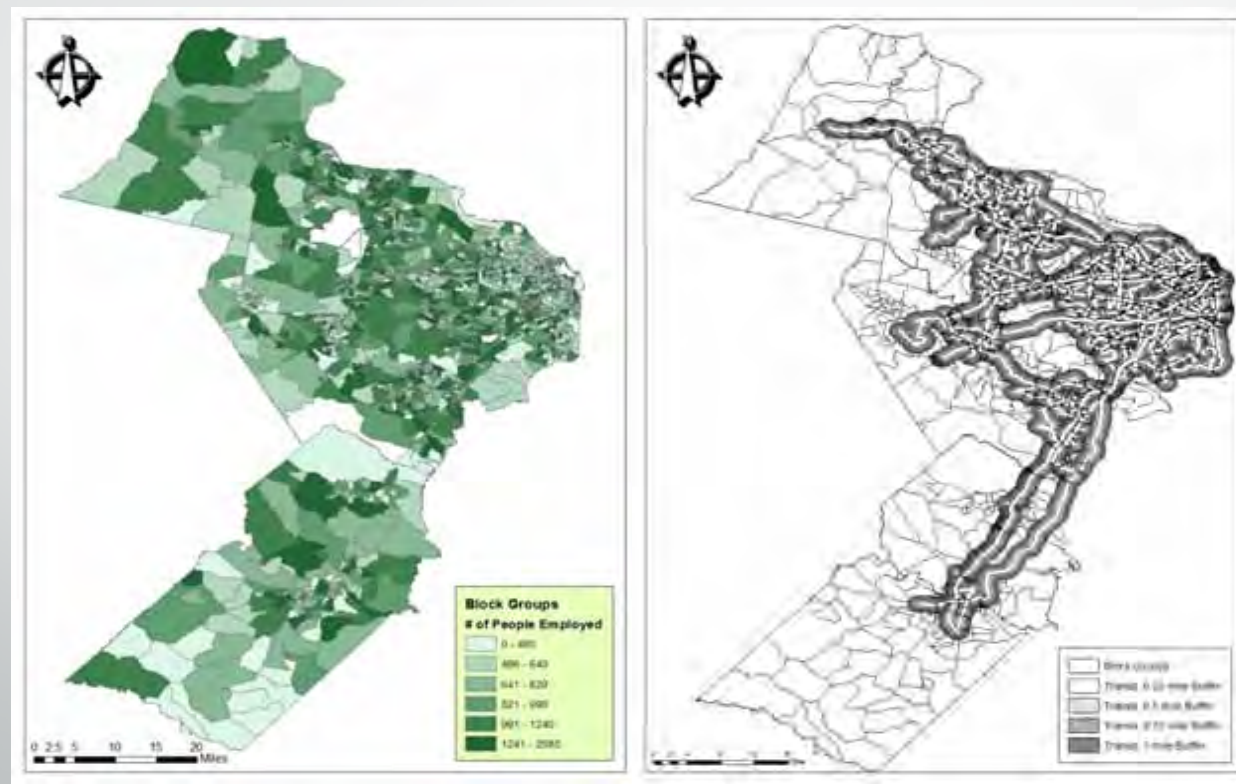
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County/City	# of Stops per Sq. Mile	Number of Paid Employees				Percent of Growth		
		1998	2003	2008	2013	5-year	10-year	15-year
Alexandria	69.46	75,301	83,325	80,898	83,411	3.11	0.10	10.77
Arlington	54.68	110,040	115,993	117,600	132,556	12.72	14.28	20.46
Fairfax (County)	11.61	444,700	494,915	578,508	584,523	1.04	18.11	31.44
Fairfax (City)	47.12	32,986	32,915	29,725	29,657	-0.23	-9.90	-10.09
Falls Church	29.50	13,598	16,827	9,159	9,487	3.58	-43.62	-30.23
Loudoun	0.09	50,489	97,385	114,785	134,845	17.48	38.47	167.08
Manassas	6.07	20,894	20,751	21,503	21,046	-2.13	1.42	0.73
Manassas Park	10.28	1,983	3,175	3,511	3,012	-14.21	-5.13	51.89
Prince William	1.27	57,514	72,017	85,186	94,198	10.58	30.80	63.78



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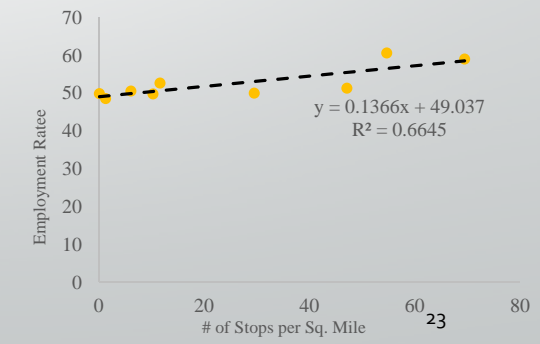
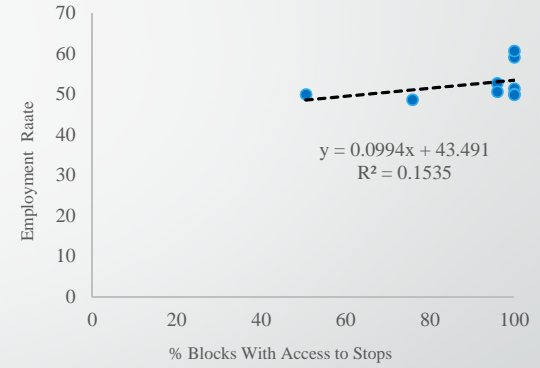
Number of Transit Stops vs. Employment Data by Block Group




Number of Transit Stops vs. Employment Data by Block Group

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County/City	Number of Stops per Sq Mile	Number of Blocks	Blocks with Access to Stops		# of People Employed		Employment Rate
			#	%	With Access to Stops	Without Access to Stops	
Alexandria	69.46	105	105	100.0	82,650	0	59.1
Arlington	54.68	180	180	100.0	125,905	0	60.6
Fairfax (County)	11.61	644	618	96.0	550,840	19,205	52.7
Fairfax (City)	47.12	17	17	100.0	11,585	0	51.3
Falls Church	29.50	8	8	100.0	6,170	0	50.0
Loudoun	0.09	162	82	50.6	81,695	74,210	49.9
Manassas	6.07	25	24	96.0	18,650	490	50.6
Manassas Park	10.28	8	8	100.0	7,115	0	49.8
Prince William	1.27	228	173	75.9	155,815	39,670	48.6



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- Counties and cities with higher number of transit stops had a higher number of employees per square mile
- Population density and access to metro stations are the significant factors that impacts job growth.
- Regardless of the number of bus stops, counties and cities with more access to metro stations experienced a greater job growth.



Thank You!