

APPENDIX A

**LIST OF NAICS CODES and
APS TNCs INCLUDED IN THE RESEARCH**

Table A1. List of NAICS Codes and APS TNCs

NAICS	Description	Company Names
LOGISTICS		
48-49	Transportation and Warehousing	
482111	Line-Haul Railroads	Siemens AG
		Vivendi
		Cia Vale do Rio Doce (VALE)
		Hoyer GmbH Internationale Fachspedition
483111	Deep Sea Freight Transportation	DSV A/S
		FedEx Corp.
		Marubeni America Corporation
		Sumitomo Corporation of America
		DHL (Danzas Group)
		Kawasaki Kisen Kaisha Ltd.
		Stolt-Nielsen Transportation Group Inc.
		Hanjin Shipping Company Ltd.
		Maersk Line UK Limited
		Hyundai America Shipping Agency(N.C.), Inc.
483113	Coastal and Great Lakes Freight Transportation	Bolloré Investissement
		CMA CGM Groupe
		APL Company Private Ltd.
		Hapag-Lloyd AG
		Yangming Marine Transport Corp
		Teekay Corporation
		Seecor Marine LLC
		Cia Sudamericana de Vapores S.A.
484110	General Freight Trucking, Local	Kuehne and Nagel International AG
		SCHENKER AG
		Varenso Oy
484121	General Freight Trucking, Long-Distance, Truckload	United Parcel Service Inc. (UPS)
		Suntory Ltd.
		Nippon Express Company Ltd.
		Group4 Securicor PLC
		Brink's
		Hellmann Worldwide Logistics GmbH and Company KG
		ABX Logistics

		Seagate
		Panalpina Welttransport Deutschland GmbH
		Ryder Integrated Logistics
		Cargolux Airlines International S.A.
		United Arab Shipping Company
		USF Logistics Services Inc.
		Mammoet Holding B.V.
		Dimerco Express Corp.
		GeoLogistics GmbH
		EGL Eagle Global Logistics L.P.
		Menlo Worldwide Logistics
486110	Pipeline Transportation of Crude Oil	Koch Industries Inc.
486210	Pipeline Transportation of Natural Gas	Mirant Corp.
488320	Marine Cargo Handling	Cargill Inc.
		Mitsui OSK Lines Ltd.
		Yamato Holdings Company Ltd.
		Serco Group PLC
		Pacific International Lines (Private) Ltd.
488510	Freight Transportation Arrangement	Mediterranean Shipping Company S.A.
		Nippon Yusen KK
		Expeditors International of Washington Inc.
		Dachser GmbH and Company KG
491110	Postal Service	TPG N.V.
IT		
51	Information	
511210	Software Publishers	Hewlett-Packard Co.
		Amisys Inc.
		Sony Corp.
		Dell Inc.
		Fujitsu Ltd.
		Microsoft Corp.
		Oracle Corporation
		CGI
		Infosys
		Experian Information Solutions Inc.
		Adobe Systems Inc.
		TietoEnator Corporation
		Baker Atlas
		Infor Enterprise Solutions Holdings Inc.
		Global Crossing Ltd.

	3M
	SAS Institute Inc.
	JDA Software Group Inc.
	Autodesk
	Societe Internationale de Telecommunications Aeronatiques
	CMR
	VeriSign Inc.
	SoftLink International Ltd.
	Dassault Systemes S.A.
	SurfControl
	Cadence
	Hitachi Software Engineering Company Ltd.
	Trapeze Networks
	Business Objects
	BEA
	Compuware Corp.
	Citrix Systems
	Satyam
	Synopsys Inc.
	LogicaCMG
	CIBER Inc.
	McAfee
	Sybase Inc.
	Parametric Technology Corp.
	Moody's KMV
	GCI
	Trading Technologies International
	Kanbay
	IFS
	Agresso
	MSC Software Corporation
	Tele Atlas
	Managed Objects
	Deltek
	SAP AG
	Ariba
	Lockheed Martin
	Sun Microsystems
	CA Transforming IT Management
	EPICOR
	Fair Isaac

		ANSYS Inc.
		TIBCO
517110	Wired Telecommunications Carriers	AT&T
		Verizon
		Deutsche Telekom AG
		Nokia Group
		Vodafone Group Plc
		AT&T wireless (Cingular)
		Telefonica S.A.
		British Telecommunications
		Kiddi Corp.
		China Telecom Corporation Ltd.
		Schlumberger
		NTT Communications Corp.
		Siemens Business Communications Systems
		SingTel
517212	Cellular and Other Wireless Telecommunications	NEC Corporation (Sumitmo Corporation)
		Safran
		T-Mobile International AG
		Group4 Securicor PLC
517910	Other Telecommunications	Fujitsu Ltd.
		Reuters Group PLC
		Pindar Graphics
		Yipes Enterprise Services Inc.
		SITA S.C.
		ARINC Inc.
		Inmarsat PLC
		Premiere Global Services Inc.
		Halcrow Group Ltd.
		InterCall Inc.
		New Skies Satellites N.V.
518111	Internet Service Providers	Time Warner Inc.
		IBM
		Google Inc.
		Huawei Technologies Company Ltd.
		Yahoo! Inc.
		Dow Jones Newswires

		Societe Internationale de Telecommunications Aeronatiques
		Galileo International Inc.
		Tellabs
		TandF Informa PLC
		Sun ONE
		BI Purchasing Inc.
		FactSet Research Systems Inc.
		Salesforce.com Inc.
		Agence France-Presse
		Vanco PLC
		GL Trade
		24/7 Real Media Inc.
		Prosodie S.A.
		SDL
		Buongiorno S.p.A.
		Fast Search and Transfer ASA
		USinternetworking Inc.
		Datamonitor PLC
518210	Data Processing, Hosting, and Related Services	Electronic Data Systems Corporation (EDS)
		Pershing L.L.C.
		Xerox Corp.
		Automatic Data Processing Inc.
		Affiliated Computer Services Inc.
		Dimension Data Holdings
		Perot Systems Corp.
		TietoEnator Corp.
		IMS Health Inc.
		PubliGroupe Ltd.
		Ceridian
		GfK AG
		Det Norske Veritas
		GPS Holding L.P.
		Global eXchange Services
		Thales Information Systems
541511	Custom Computer Programming Services	Computer Science Corp. Federal Sector
		SAIC Inc.
		TietoEnator AB
		UGS PLM Software
		Gemplus GmbH

	Novell Inc.
	Cincom Systems
	SSA Global Technologies Inc.
	HCL Technologies Ltd.
	Northgate Information Solutions PLC
	Software AG
	Attachmate Corp.
	Merant
	Stenograph L.L.C.
	Patni Computer Systems
	Ness Technologies Inc.
	Simulia
	Igate
	Syntel
	Avid Technology
	Zinc Software Inc.
	Temenos
	MphasiS BFL Ltd.
	IDC Consulting
	Hexaware Technologies Ltd.
	Evidian SA
	Critical Path Inc.
	Tech Mahindra Ltd.
	Polaris Software Lab Ltd.
	UNISYS
	NIIT Technologies Ltd.
	LeadCom Integrated Solutions
	P and H Solutions Inc.
	InterSystems Corporation
	Group 1 Software Inc.
	Ex Libris Ltd.
	Sapient Securities Corp.
	Flextronics Software Systems Ltd.
	Enea Data AB
	FileNet Company Ltd.
	JustSystems
	Thoughtworks Inc.
	Opsware Inc.
	NET2S
	FRS Global
	Columbus IT
	3i Infotech Inc.

		Entrust
		Mentor
		Axway
		Masconit
		Adea Solutions Inc.
		ESI Group
		PDF Solutions Inc.
		Altair Engineering Inc.
		YASH Technologies Inc.
		EMC Computer Systems AG
		Global Market Insite Inc.
		F-Secure Corp.
541512	Computer Systems Design Services	Symbian
		CDW
		MIS AG
FINANCE AND BANKING		
52	Finance and Insurance	
522110	Commercial Banking	UBS
	Savings Institutions	Barclays
		The Bank of Tokyo-Mitsubishi UFJ Financial Group
		CitiGroup
		J. P. Morgan Chase and Co.
		Standard Chartered Bank
		Deutsche Bank
		HBOS PLC
		Societe Generale
		Credit Suisse Group
		Sumitomo Mitsui Banking Corp
		HSBC Bank PLC
		Fortis Bank
		Calyon
		Landesbank Baden-Wuerttemberg AG
		Commerzbank
		Mizuho Corporate Bank
		WestLB AG
		Nordea Bank AB
		DZ Bank
		IXIS Corporate and Investment Bank
		ING Bank
		Svenska Handelsbanken

		Nordea Bank Finland
		Caixa Geral de Depositos S.A.
		The Development Bank of Japan
		United Overseas Bank Ltd.
		Overseas-Chinese Banking Corporation Ltd.
		KoreaExchange Bank
		Bank Leumi le-Israel BM
		Aareal Bank AG
		First Commercial Bank
		CIMB Group
		The International Commercial Bank of China
		Arab Bank
522120	Savings Institutions	ABN Amro Holding N.V.
522220	Sales Financing	CIT Group
		Visa
		MasterCard Inc.
		American Express Co.
		GE Capital
522291	Consumer Lending	Citicorp Diners Club Inc.
522292	Real Estate Credit	Bayerische Landesbank Girozentrale
		DZ Bank
		HSH Nordbank AG
		Hypo Real Estate Bank AG
		Aareal Bank AG
		Merrill Lynch and Company
522293	International Trade Financing	BNP Paribas
		Rabobank Group
		Investec PLC
		Gulf International Bank
		National Bank of Abu Dhabi
		Arab Bank
522298	All Other Non-depository Credit Intermediation	Natixis S.A.
		Morgan Stanley
		Export-Import Bank of Korea
523120	Securities Brokerage	Goldman Sachs
		Lehman Brothers
		Rothschilds Continuation Ltd.
		CIBC World Markets

		Franklin Resources Inc.
		Euro Brokers Investment Corp.
523130	Commodity Contracts Dealing	Stemcor Holdings Ltd.
		Templeton Global Advisors Ltd.
523210	Securities and Commodity Exchanges	OMX Group
		New York Stock Exchange
		NASDAQ Stock Market Inc.
		International Securities Exchange Holdings, Inc.
		Intercontinental Exchange
523920	Portfolio Management	AXA Financial
		Invesco
		Nomura Asset Management (USA) Inc.
		Warburg Pincus L.L.C.
		Blackstone Group L.P.
		KBC Peel Hunt Ltd.
523991	Trust, Fiduciary, and Custody Activities	The Bank of New York Mellon
		AXA Finance
523999	Miscellaneous Financial Investment Activities	3i Group PLC
		Bain Capital L.L.C.
525910	Open-End Investment Funds	Zurich Financial Services
		Nomura Pacific Basin Fund Inc.
		T. Rowe Price International Stock Fund
525990	Other Financial Vehicles	Aberdeen Asia Pacific Income Fund Inc.
INSURANCE		
524113	Direct Life Insurance Carriers	Svenska Handelsbanken
		Nippon Life Insurance Co.
		Everest Re Group Ltd.
524114	Direct Health and Medical Insurance Carriers	Gerling Gruppe Zuerich Versicherungs-Service AG
		Lloyds of London
524126	Direct Property and Casualty Insurance Carriers	Allianz AG
		AXA Group
		Prudential Financial Inc.
		AEGON

		Zurich Financial Services Group
		GMAC
		DnB Nor
		Fortis S.A./NV
		Tokio Marine Nichido
		Liberty Mutual
		XL Capital
		Chubb Corp.
		Gerling Gruppe Zuerich Versicherungs-Service AG
		MBIA
		General Re Corp.
		Financial Security Assurance Holdings Ltd.
		AMBAC Financial Group Inc.
		MBIA Insurance Corp.
		Transatlantic Holdings Inc.
		Odyssey Re Holdings Corp.
524128	Other Direct Insurance Carriers	Aon Groep Nederland B.V.
524210	Insurance Agencies and Brokerages	MetLife
		Principal Financial Group Inc.
		AMBAC Financial Group Inc.
		Marsh and McLennan Companies Inc.
		Willis Group Holdings Ltd.
		Crawford and Co.
525110	Pension Funds	Pinoeer Investments
		Nippon Life Insurance Co.
		Sun Life Financial
REAL ESTATE		
53	Real Estate and Rental and Leasing	
531110	Lessors of Residential Buildings and Dwellings	The Rockefeller Group
525930	Real Estate Investment Trusts	Fortress Investment Group L.L.C.
	Other Financial Vehicles	ProLogis First GP
		AMB Property Corp.
531190	Lessors of Other Real Estate Property	CB Richard Ellis
531210	Offices of Real Estate Agents and Brokers	ORIX Corp.
		Realogy Corp.

		Coldwell Banker Real Estate Corp.
		Century 21
		Tokyo Leasing
		Jones Lang LaSalle Inc.
		Genefim S.A.
		Cushman & Wakefield
LAW		
54	Professional, Scientific, and Technical Services	
541110	Offices of Lawyers	Linklaters
		Baker and McKenzie
		Skadden, Arps, Slate, Meagher and Flom L.L.P. and Affiliates
		Davis Polk and Wardwell
		Allen and Overy L.L.P.
		DLA Piper Rudnick Gray Cary UK L.L.P.
		Clifford Chance
		Latham and Watkins L.L.P.
		Kirkland and Ellis L.L.P.
		Lovells
		Shearman and Sterling
		Simmons and Simmons
		Hogan and Hartson L.L.P.
		Cleary, Gottlieb, Steen and Hamilton
		Morrison and Foerster L.L.P.
		Morgan, Lewis and Bockius L.L.P.
		CMS Cameron McKenna
		O'Melveny and Myers L.L.P.
		Ashurst
		Freshfields Bruckhaus Deringer
		Simpson Thacher and Bartlett
		Bingham McCutchen
		Pillsbury, Winthrop, Shaw, Pittman
		Fulbright and Jaworski L.L.P.
		Mayer, Brown, Rowe and Maw L.L.P.
		Osborne Clarke
		Hunton and Williams L.L.P.
		Vinson and Elkins L.L.P.
		Clyde and Co.

		Fried, Frank, Harris, Shriver and Jacobson L.L.P.
		Dewey Ballantine L.L.P.
		Howrey Simon Arnold and White L.L.P.
		Baker and Botts L.L.P.
		Kelley Drye and Warren L.P.
		Squire, Sanders and Dempsey L.L.P.
		Cadwalader, Wickersham and Taft
		Paul, Weiss, Rifkind, Wharton and Garrison L.C.C.
		Preston Gates and Ellis L.L.P.
		Dorsey and Whitney L.L.P.
		DLA Piper
		Wilmer, Cutler and Pickering
		Jones, Day, Reavis and Pogue
		Duane Morris L.L.P.
		Troutman and Sanders L.L.P.
		Chadbourne and Parke L.L.P.
		Brown Raysman Millstein Felder and Steiner L.L.P.
		Heller Ehrman White and McAuliffe L.L.P.
		Bracewell and Giuliani L.L.P.
		White and Case L.L.P.
ACCOUNTING		
541211	Offices of Certified Public Accountants	PricewaterhouseCoopers
		Ernst and Young L.L.P.
		Grant Thornton
		KPMG
		Cap Gemini
		Horwath International
		BDO Global Coordination BV
		Deloitte
		Macintyre Strater International
		International Group of Accounting Firms
		AGN International
		Baker Tilly
		RSM International
		Moore Rowland International
		Moore Stephens International Network

		Nexia International
		PKF International
DESIGN CONSULTANCY		
541310	Architectural Services	Kajima Corp.
		URS Corp.
		EDAW
		ENSR
		AECOM Technology Corp.
		MWH Global Inc.
		SK Worldwide
		HOK Planning Group
		ARUP
		COWI
		Halcrow
		ILF Consulting Engineers
		DHV
		Khatib and Alami Partners
		RTKL Associates Inc.
		Delcan
		Faithful and Gould
		NBBJ
		Bovis Lend Lease
541330	Engineering Services	Bechtel Group Inc.
		Shimizu Corp.
		Obayashi Corp.
		Jacobs Engineering Group Inc.
		JGC Corp.
		CH2M Hill Companies Ltd.
		Foster Wheeler Pyropower
		Parsons Infrastructure and Technology Group Inc.
		Louis Berger Group Inc.
		United Group Ltd.
		Black and Veatch
		Toyo USA
		Fugro N.V.
		Parsons Brinckerhoff Inc.
		Astaldi S.p.A.
		Snamprogetti S.p.A.
		Technipetrol-Technip-Technip International

		S.N.C.
		WSP Group PLC
		Kellogg, Brown and Root Holdings
		Schlumberger Data and Consulting Services
		ABB Lummus Global B.V.
		Michael Baker
		P.A. Consulting Group
		Buro Happold Consulting Engineers, Inc
		D G Jones and Partners
		SNC-Lavalin America Inc.
		Golder Associates Inc.
		A. Epstein and Sons International Inc.
		ABS Consulting
		AMEC PLC
		HLW International L.L.P.
		Lockwood Greene
		Mott MacDonald Group Ltd.
		The ERM Group
		TYPSA Consulting Engineers and Architects
		AEDAS
		Turner and Townsend
		TY Lin International
ADVERTISING AND MARKETING		
541810	Advertising Agencies	WPP Group
		BBDO Worldwide Inc.
		McCann-Erickson Worldwide Inc.
		Ogilvy and Mather Worldwide Inc.
		Young and Rubicam Inc.
		Omnicom Group
		Leo Burnett Worldwide Inc.
		Interpublic Group of Companies Inc.
		Publicis Groupe
		DDB Worldwide Communications Group Inc.
		Lowe and Partners Worldwide
		J. Walter Thompson Co.
		Asatsu-DK Inc.
		PubliGroupe Ltd.
		TBWA

		Grey Global Group Inc.
		DraftWorldwide Inc.
		Carat North America
		Carlson Marketing Group
		Saatchi and Saatchi Ltd.
		Euro RSCG Worldwide
		Advanswers PHD
		Bernard Hodes Group Inc.
		Hawkeye Communications
		Wunderman
		TMP Worldwide
		Bartle Bogle Hegarty Ltd.
		24/7 Real Media Inc.
		Groupe Cossette Communication Inc.
		Initiative
		GfK ARBOR L.L.C.
		MecGlobal
541820	Public Relations Agencies	Burson-Marsteller
		Waggener Edstrom
		Porter Novelli Inc.
		Daniel J. Edelman Public Relations Worldwide Inc.
		Fleishman-Hillard Inc.
		Ketchum Inc.
		Text 100
		AC Nielsen
		Brodeur Worldwide
		GCI Group Inc.
		Hill and Knowlton Inc.
		Ruder Finn Inc.
541850	Display Advertising	George P. Johnson Co.
541910	Marketing Research and Public Opinion Polling	The Gallup Organization
		Opinion Research Corp.
		Msource (India) Private Ltd.
		Tech Mahindra Ltd.
		Kellen Co.
		International Survey Research Corp.
		Forum Corp.

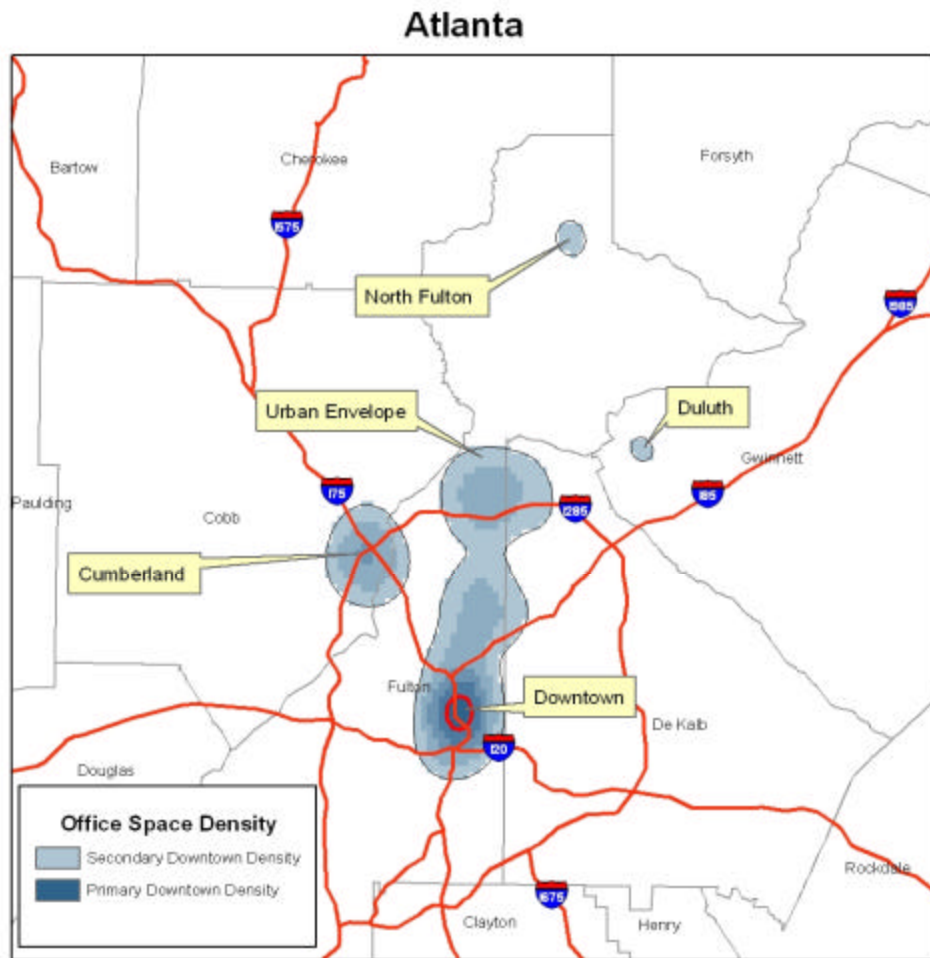
		ComScore Networks Inc.
		National Economic Research Associates Inc.
		Harris Interactive Inc.
		Highland Partners AG
MANAGEMENT CONSULTANCY		
541611	Administrative Management and General Management Consulting Services	Deloitte Touche Tohmatsu
		Atos Origin
		RQA Inc.
		Booz Allen Hamilton Inc.
		Cap Gemini
		BearingPoint Inc.
		McKinsey and Company Inc.
		Hewitt Associates Inc.
		Resources Connection L.L.C.
		Mercer Consulting Group Inc.
		A.T. Kearney Inc.
		Towers, Perrin, Forster and Crosby Inc.
		Boston Consulting Group Inc.
		Watson Wyatt and Company Holdings
		Investissement Quebec
		International Management Group
		Accenture
		Korn Ferry International AG
		Bain and Company Inc.
		Roland Berger Strategy Consultants
		FTI Consulting Inc.
		P.A. Holdings Ltd.
		Arthur D. Little Inc.
		Andersen Consulting
		Protiviti Inc.
		Abeam Consulting Ltd.
		Valley Forge
		IMG Americas Inc.
		Milliman
		Jack Morton Worldwide
		The Global Consulting Group
		Hudson Sandler

		Spencer Stuart
		Enterprise Ireland Ltd.
		BSI Management Systems
		Oliver Wyman
		Lippincott Mercer
		Aquent
		Financial Dynamics
		AlixPartners L.L.C.
		ARINSO International
		Alvarez and Marsal L.L.C.
		Egon Zehnder International Inc.
		Diamond Management and Technology Consultants Inc.
		Answerthink Inc.
		Mars and Co.
		ZS Associates Inc.
		Stern Stewart and Co.
		Kellen Co.
		Global Insight Inc.
		Simon and Kucher and Partners
		Gap International Inc.
		Kepner-Tregoe Inc.
		Frost and Sullivan Inc.
		Yankee Group
		Taylor Rafferty Associates
		Marakon Associates
		Proudfoot Consulting
		Japan-US Trans Associates
541618	Other Management Consulting Services	Morningstar
		Ovum PLC

APPENDIX B

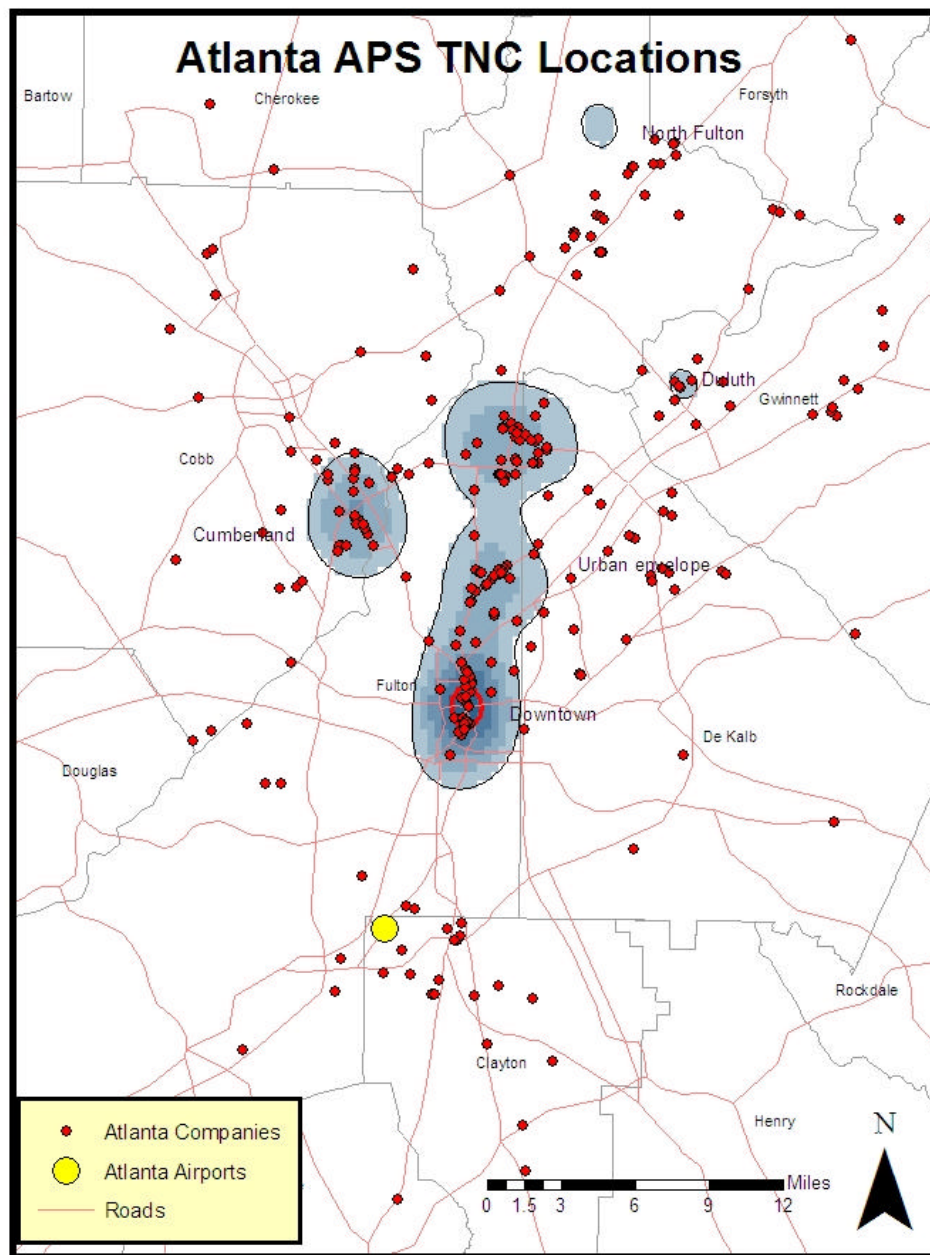
**MAPS OF METROPOLITAN AREAS
WITH APS TNC AND BUILDING LOCATIONS**

ATLANTA MAPS

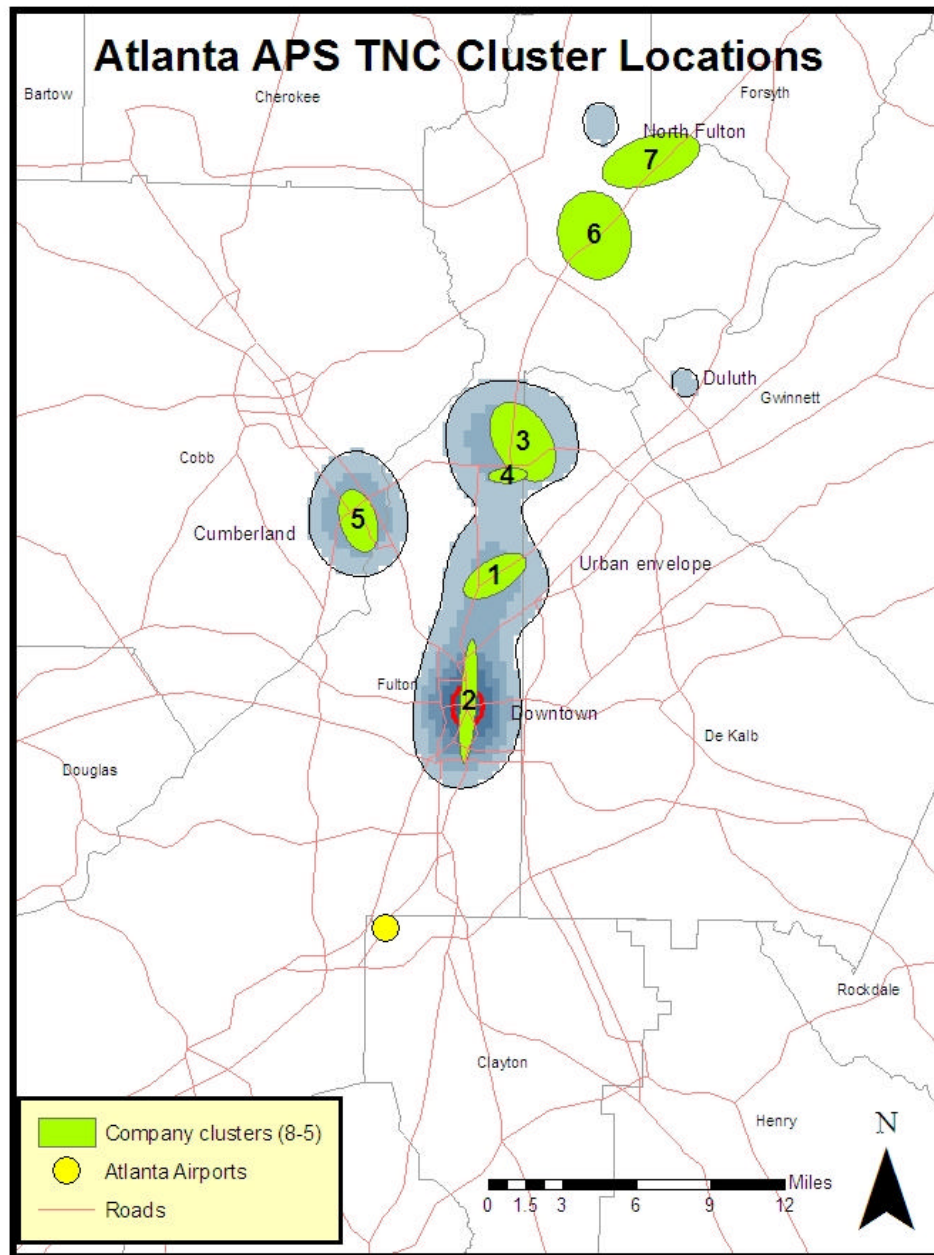


MAP 1 Atlanta¹

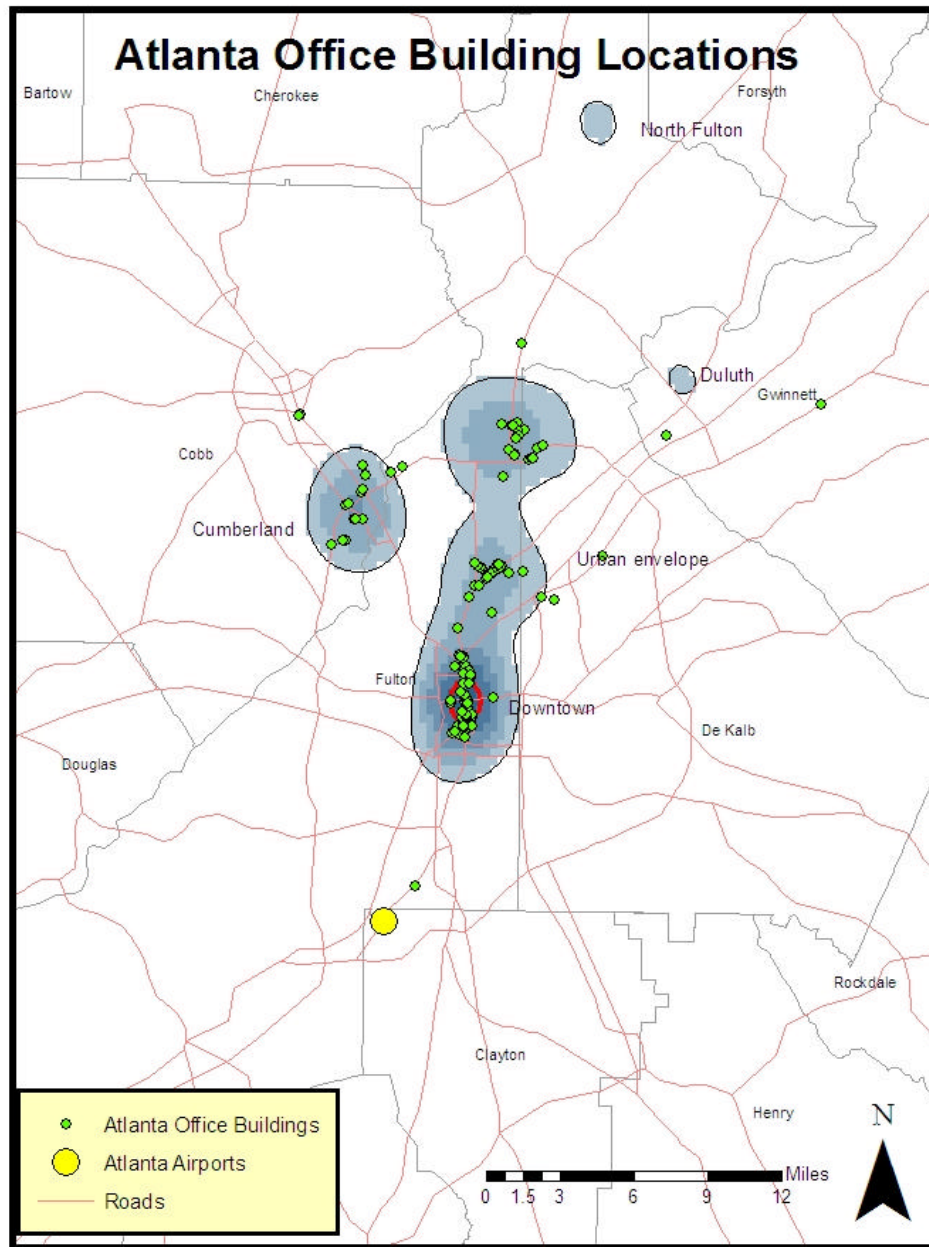
¹ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



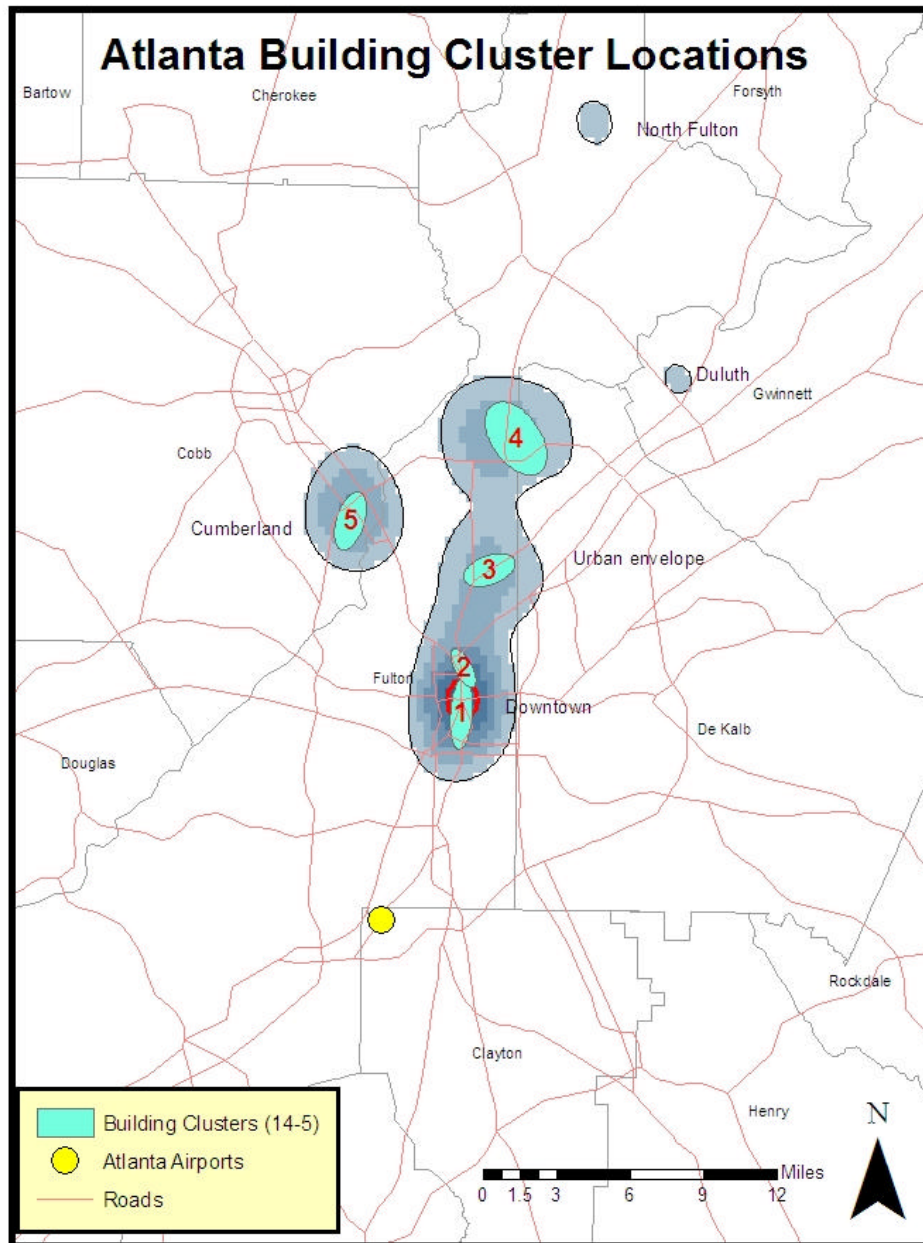
MAP 2A Atlanta APS TNCs



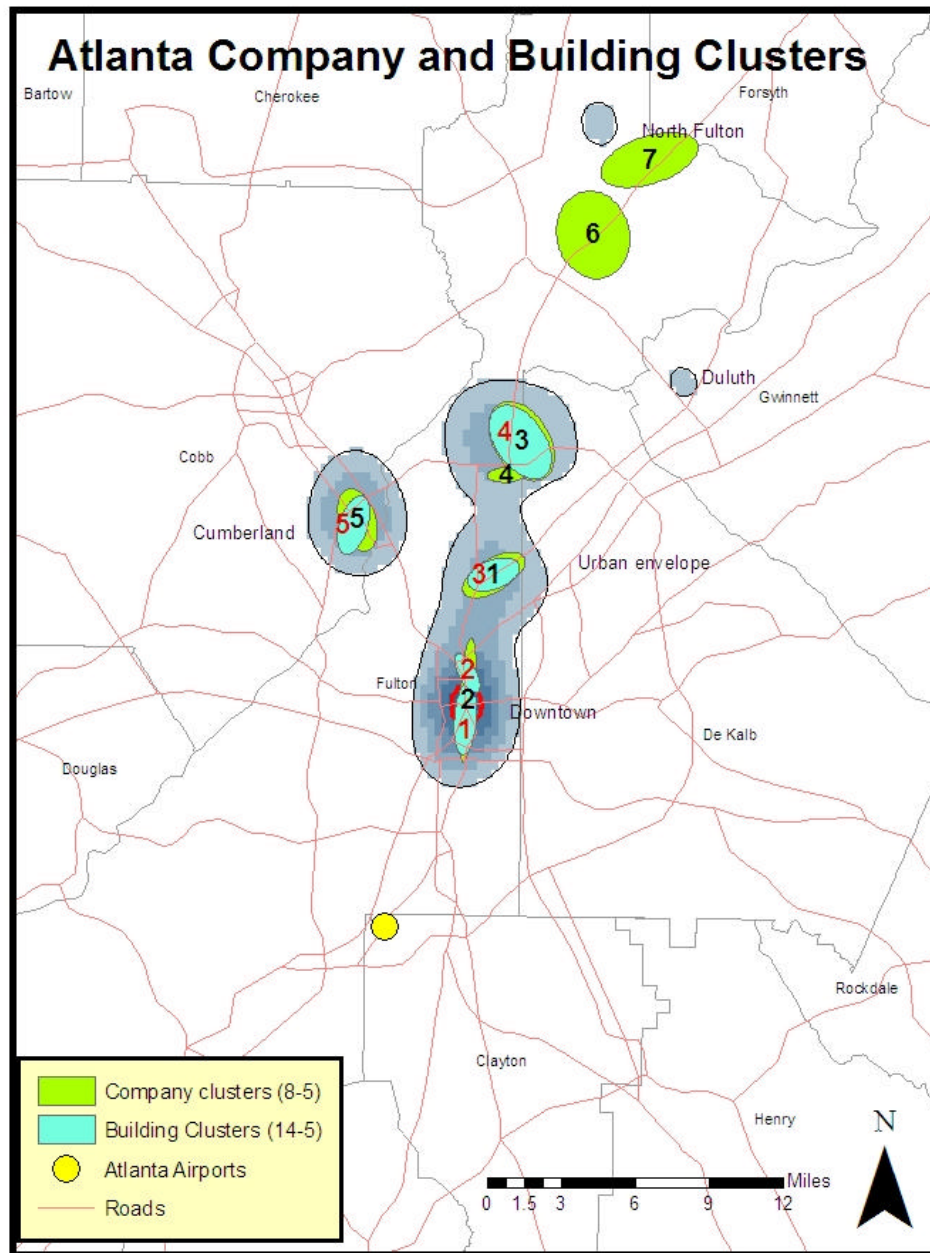
MAP 2B Atlanta APS TNC Clusters



MAP 3A Atlanta Office Buildings

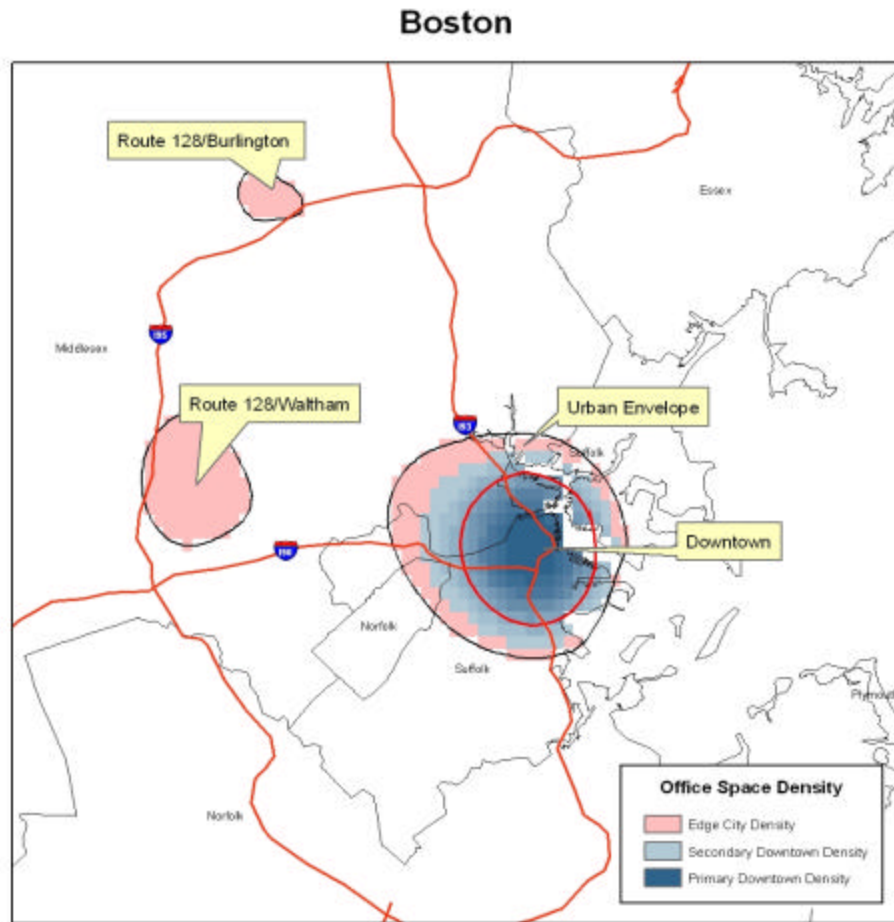


MAP 3B Atlanta Office Building Clusters



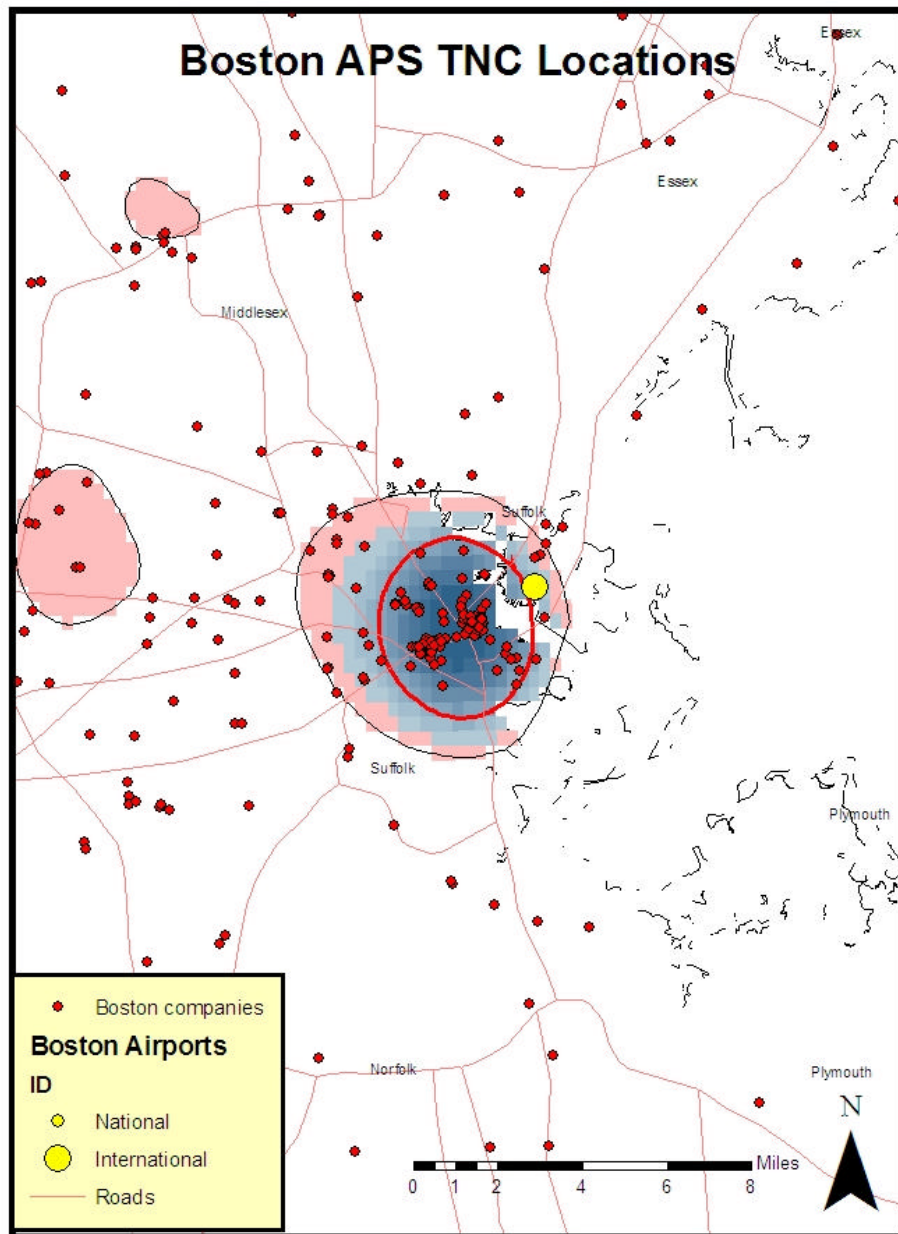
MAP 4 Atlanta Company-Building Clusters

BOSTON MAPS

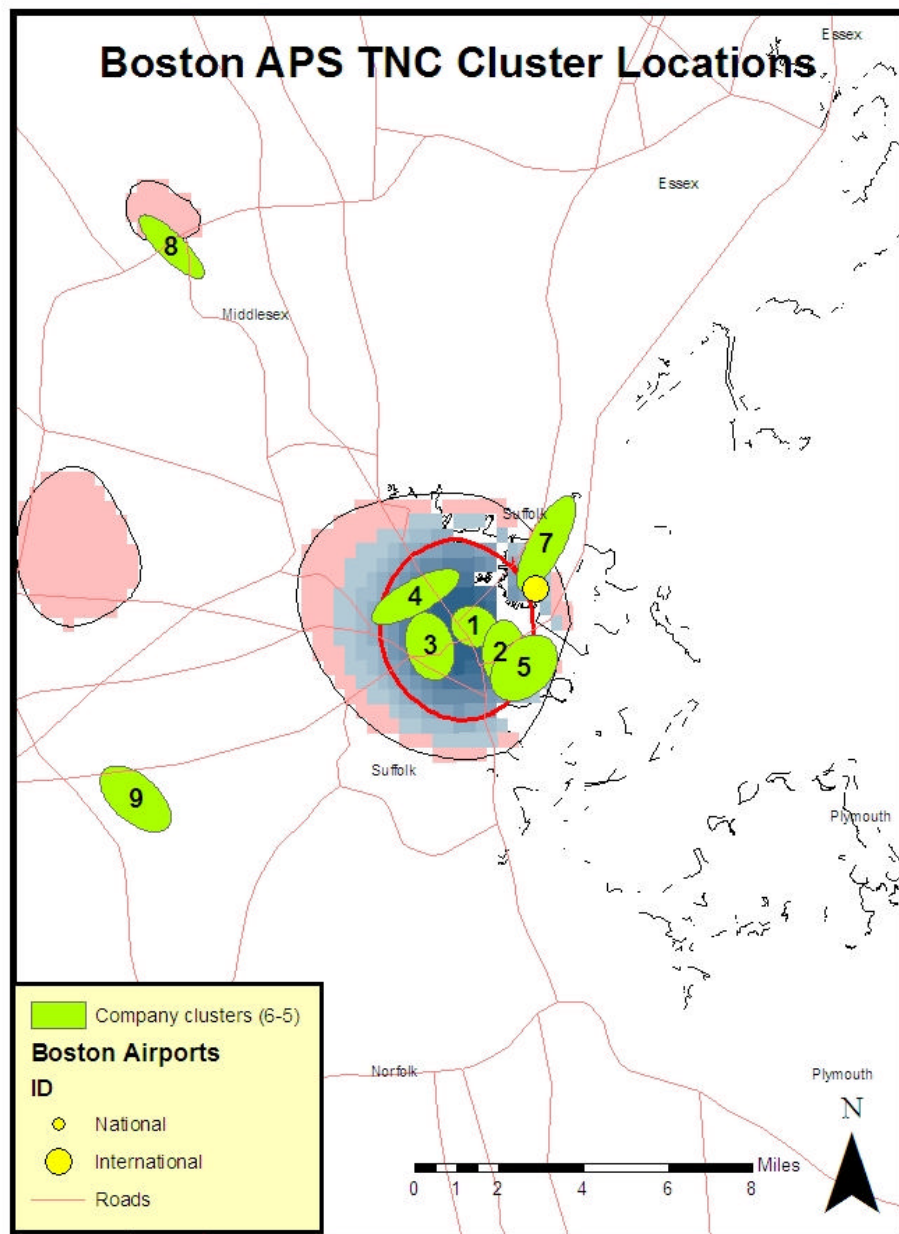


MAP 5 Boston²

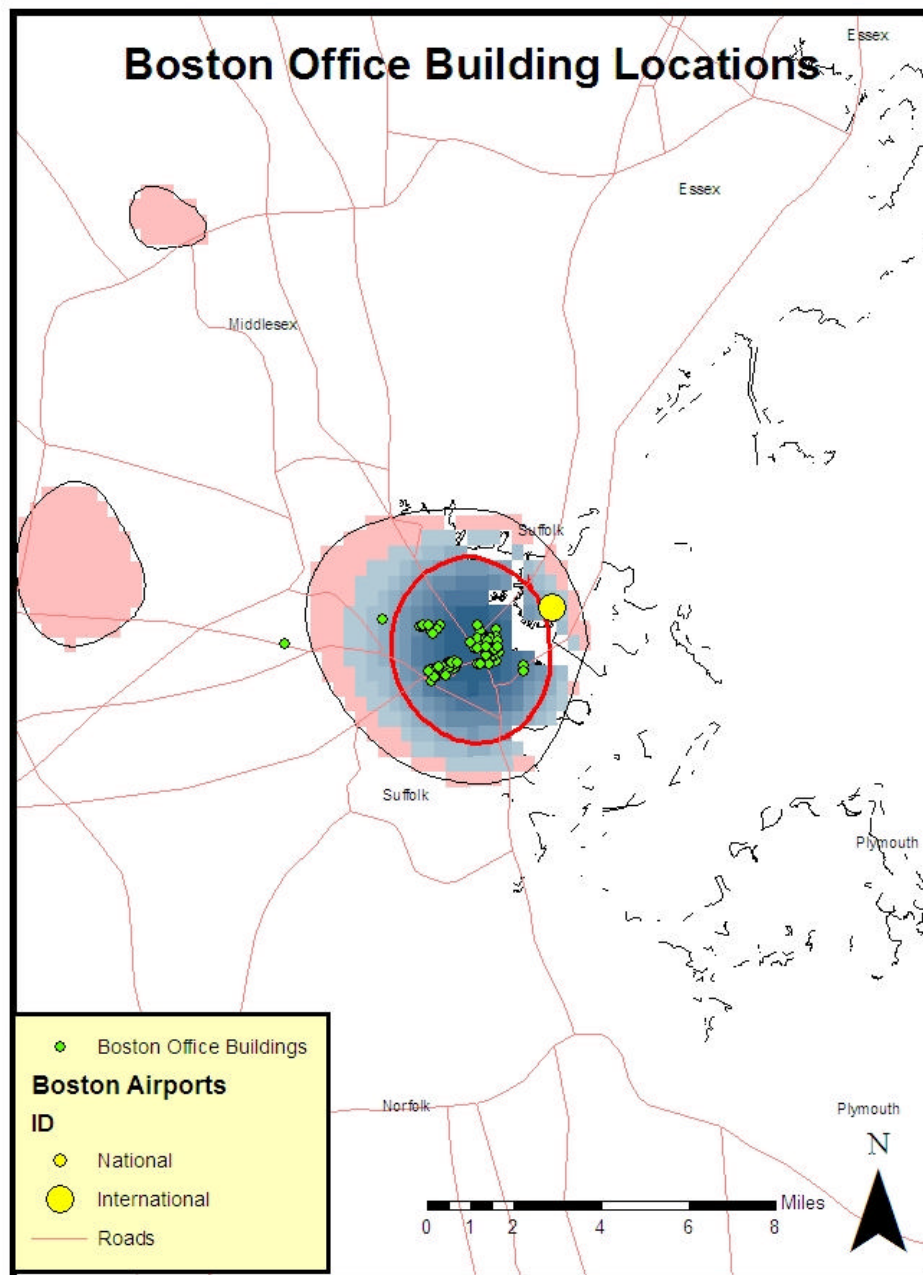
² Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



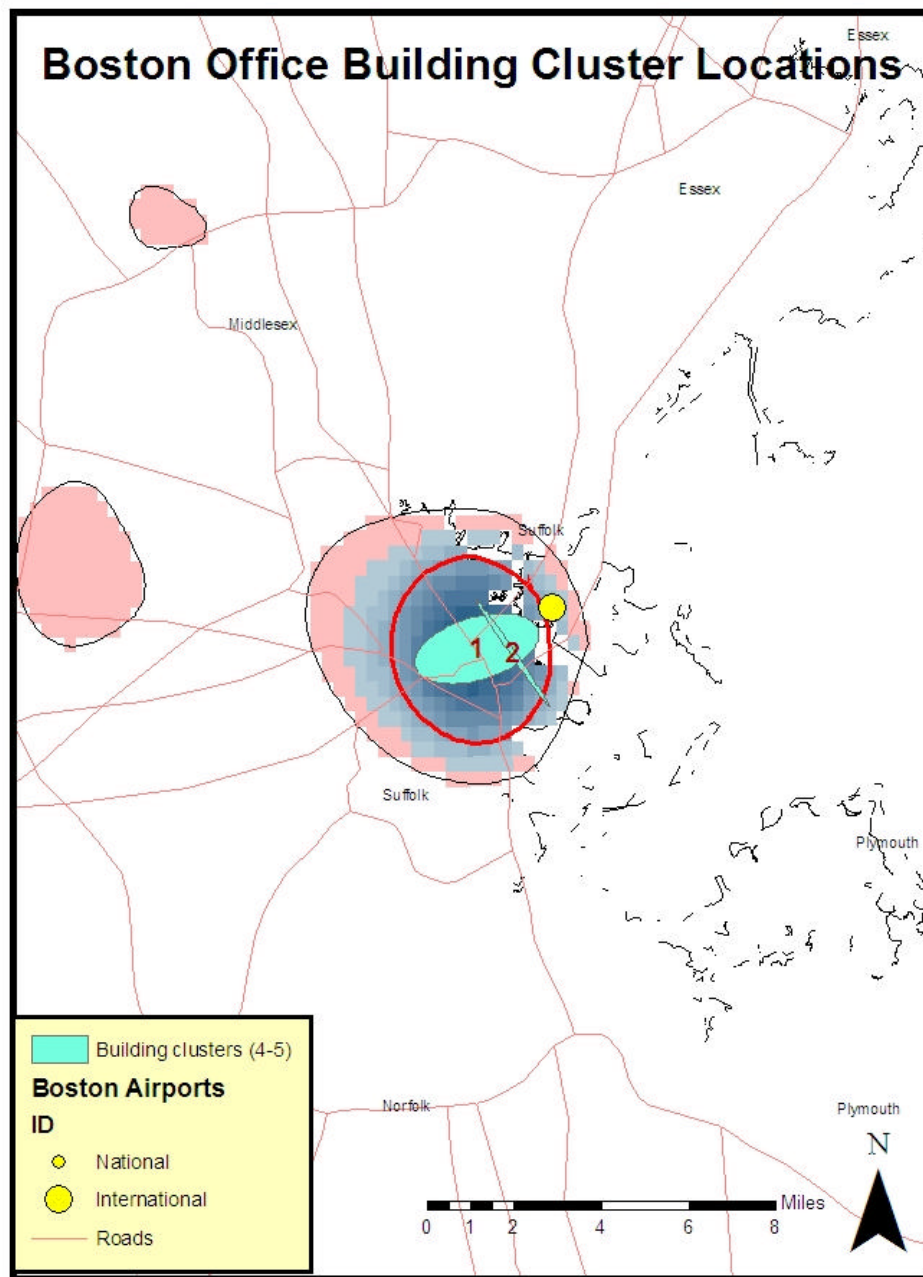
MAP 6A Boston APS TNCs



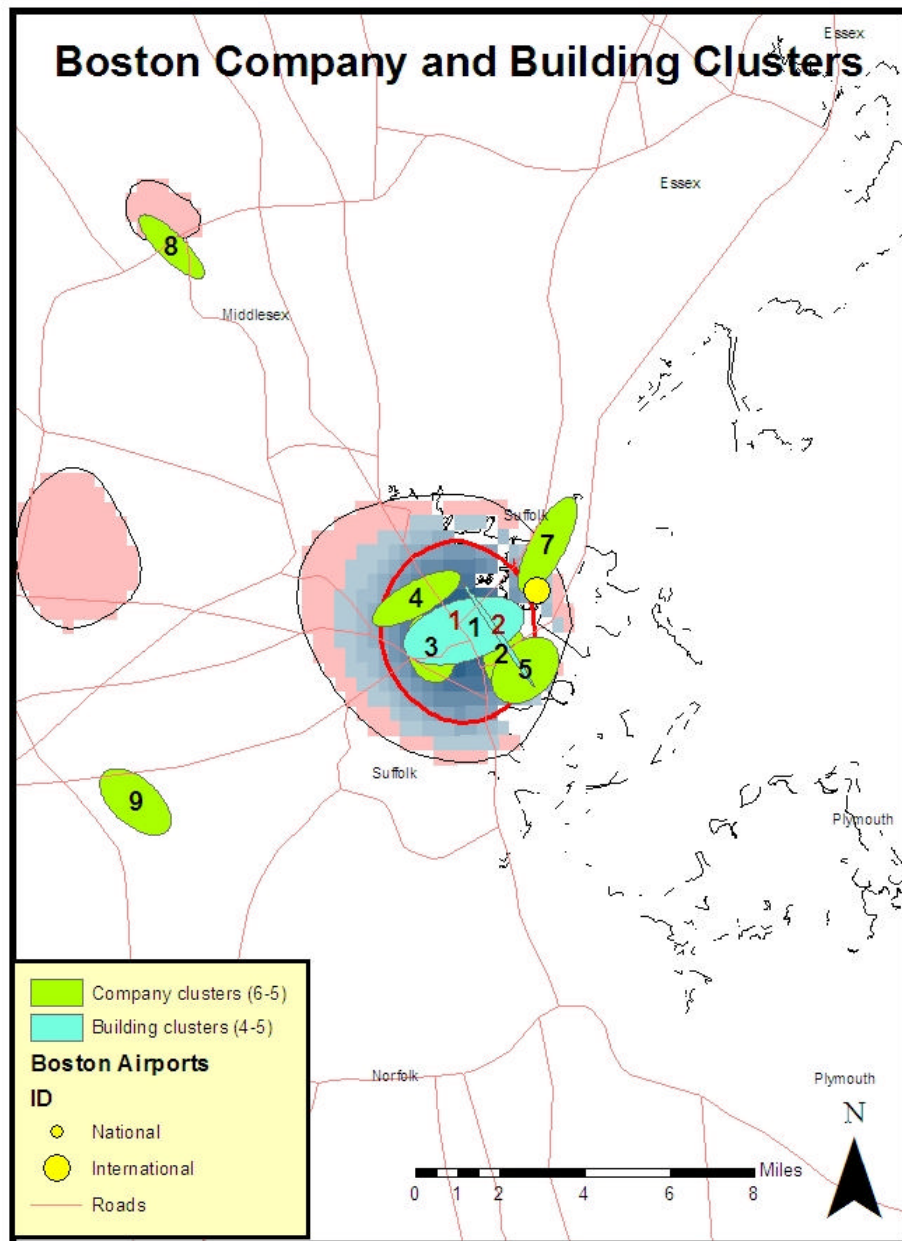
MAP 6B Boston APS TNC Clusters



MAP 7A Boston Office Buildings

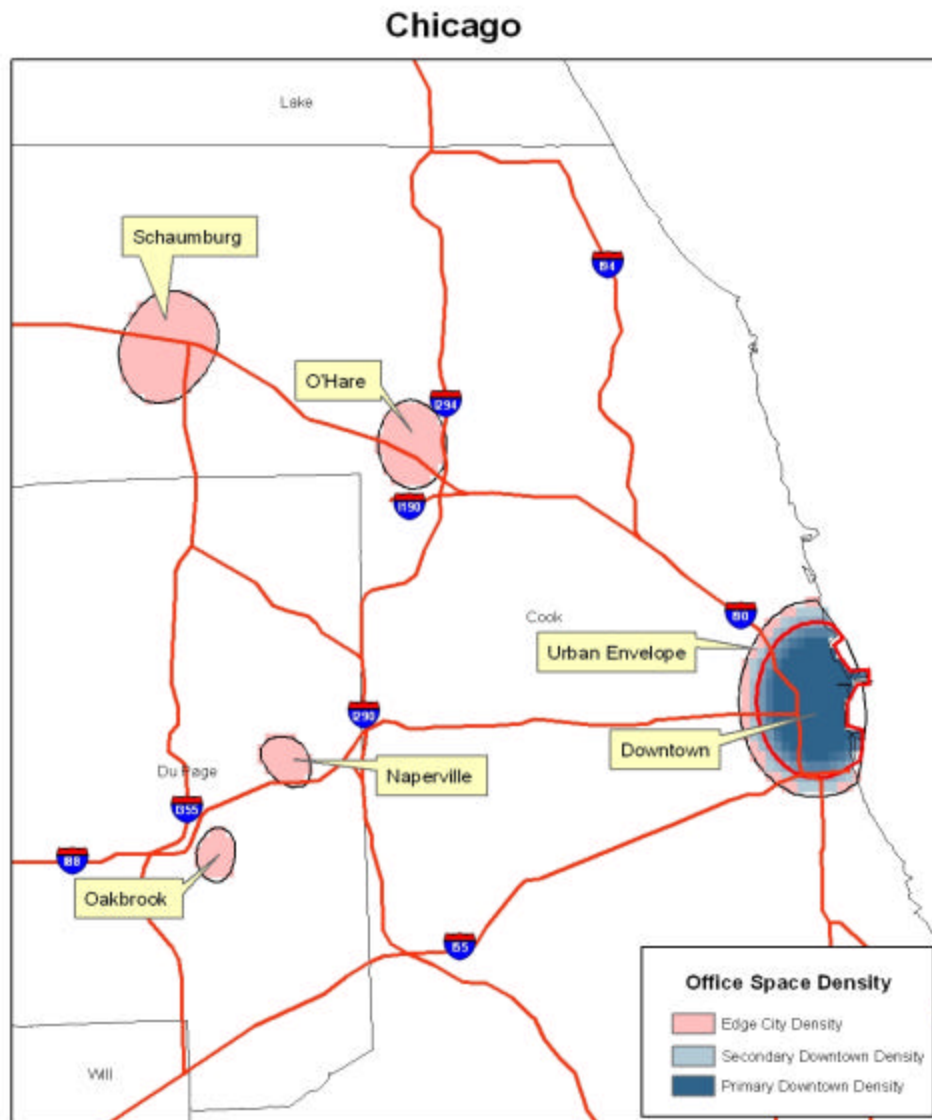


MAP 7B Boston Office Building Clusters



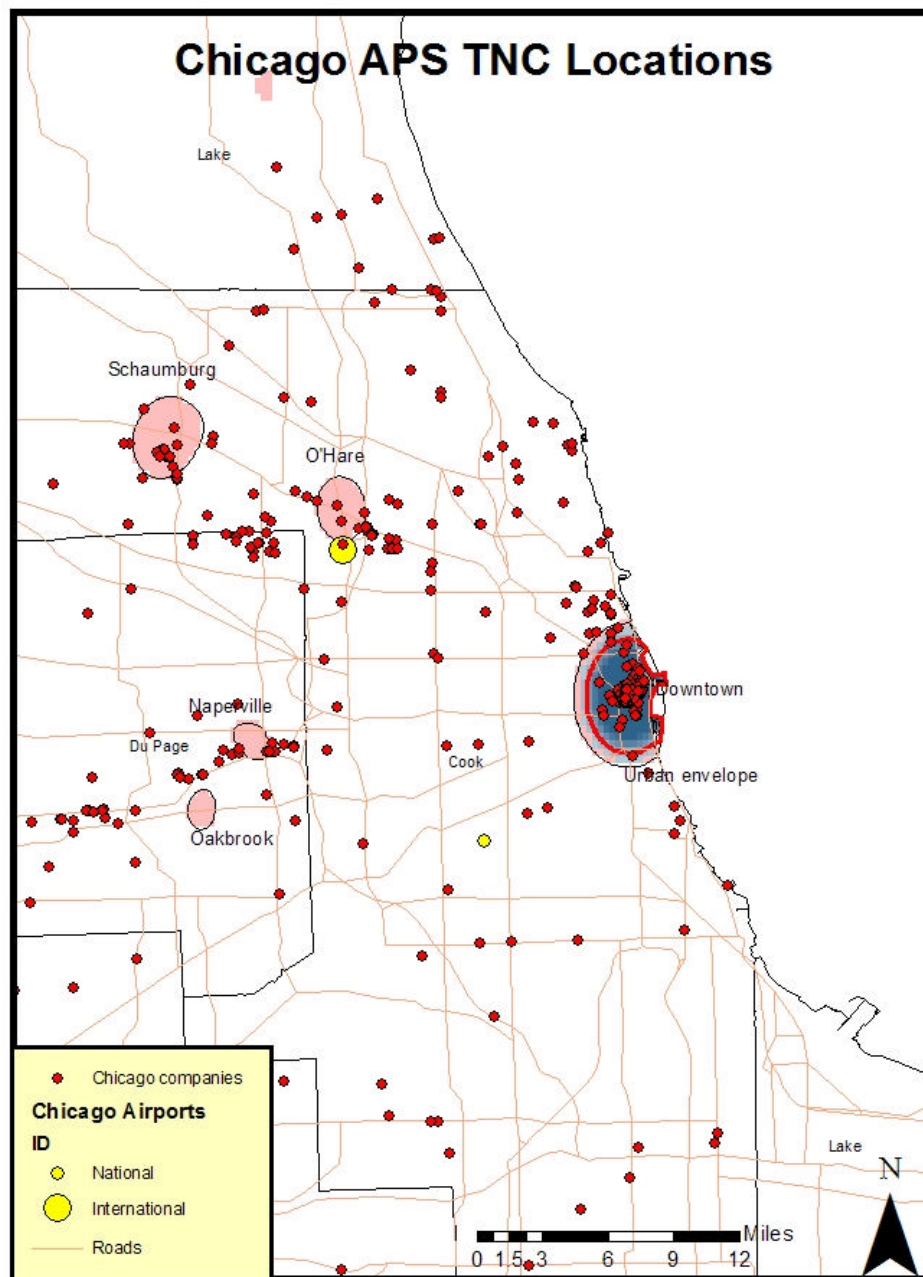
MAP 8 Boston Company-Building Clusters

CHICAGO MAPS

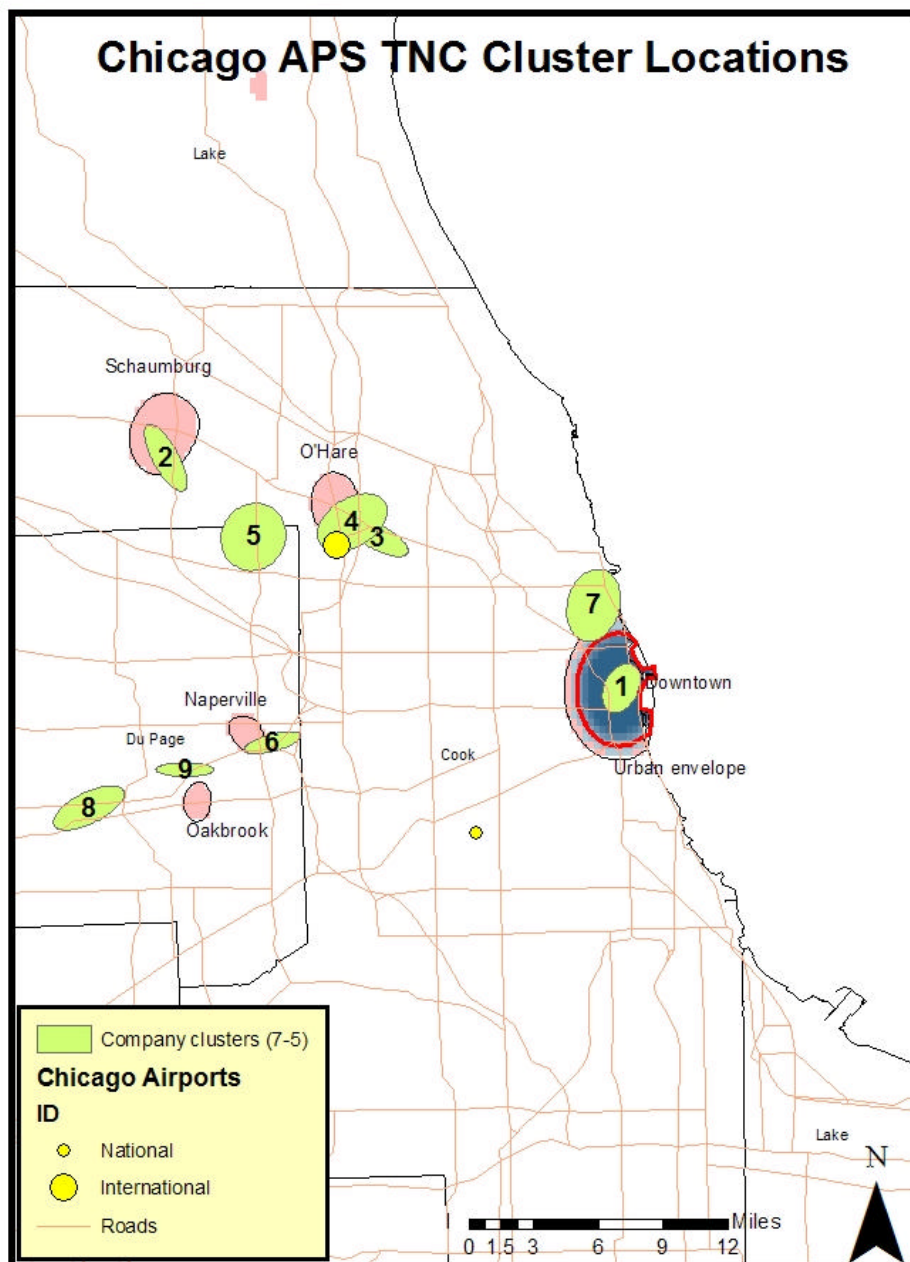


MAP 9 Chicago³

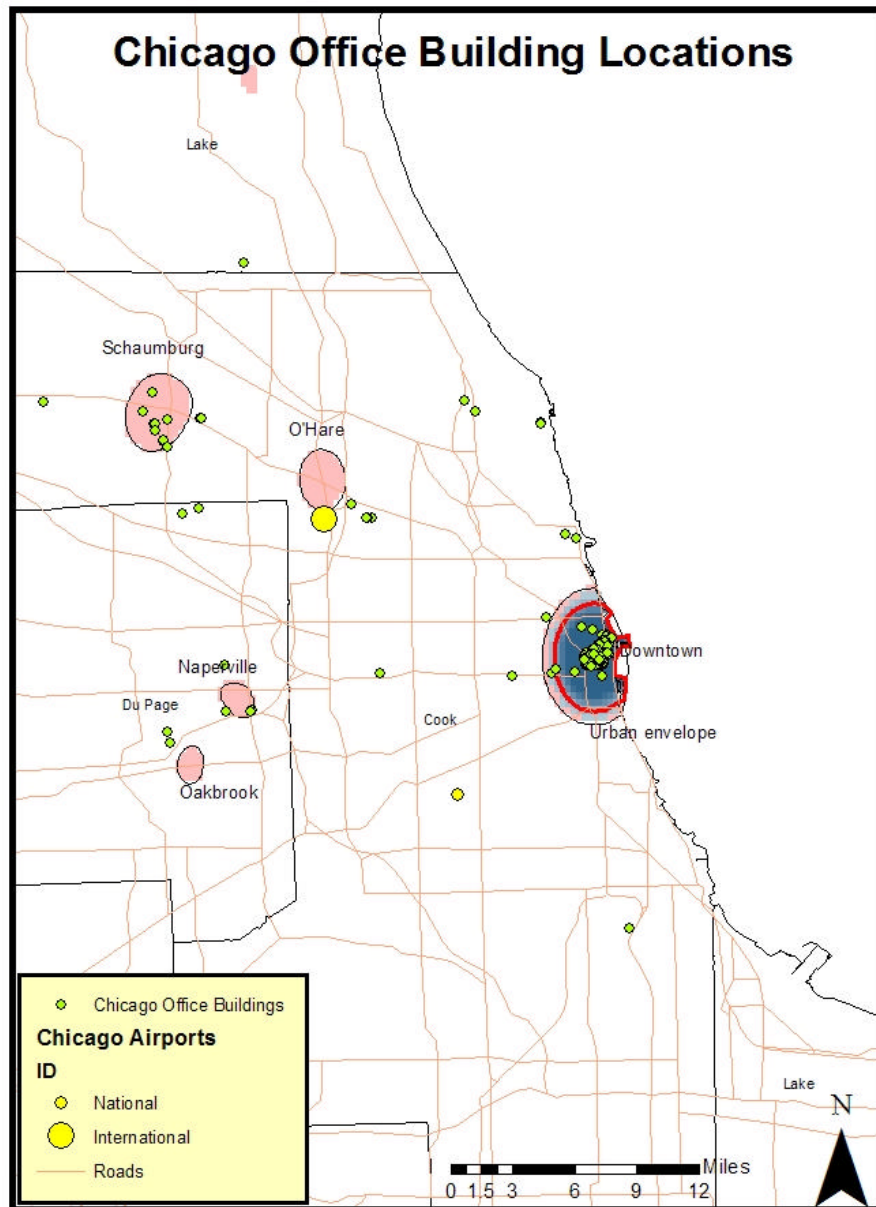
³ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



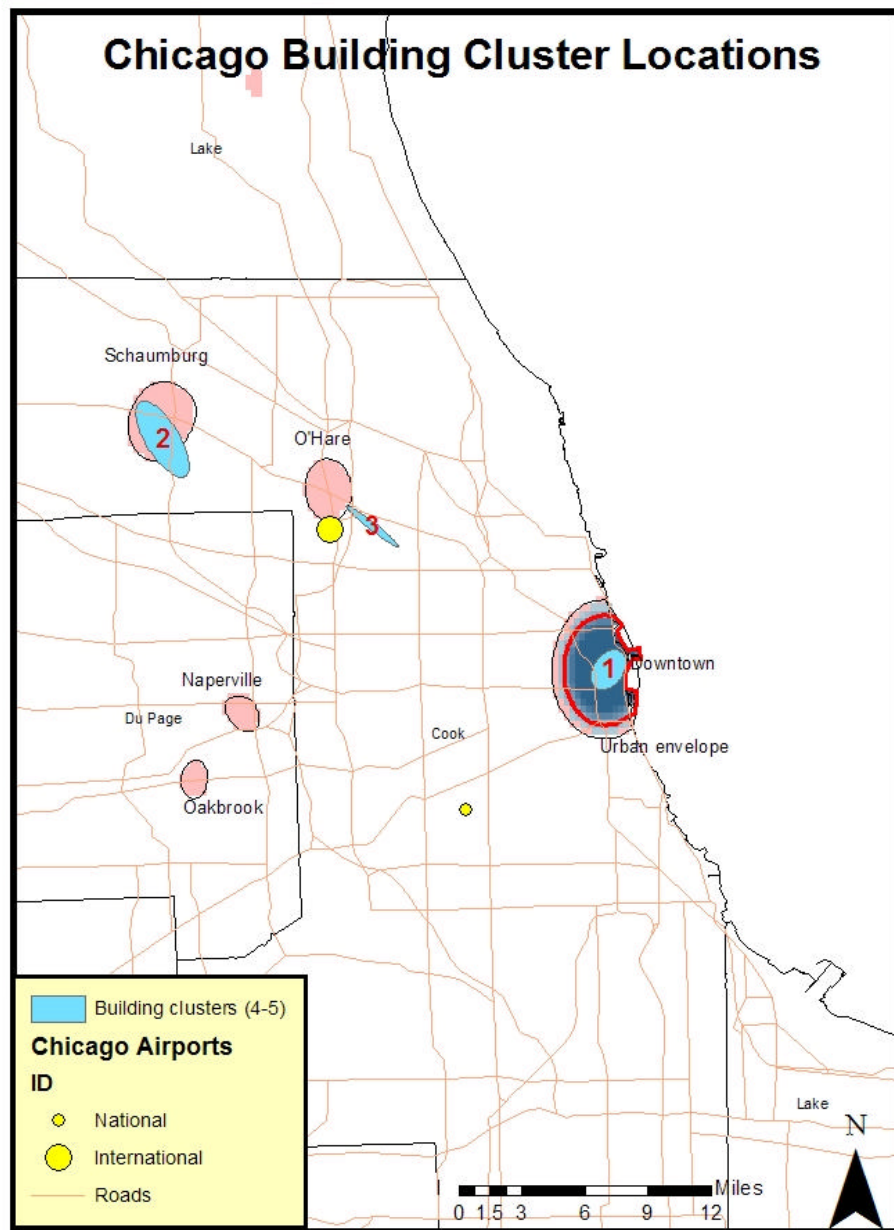
MAP 10A Chicago APS TNCs



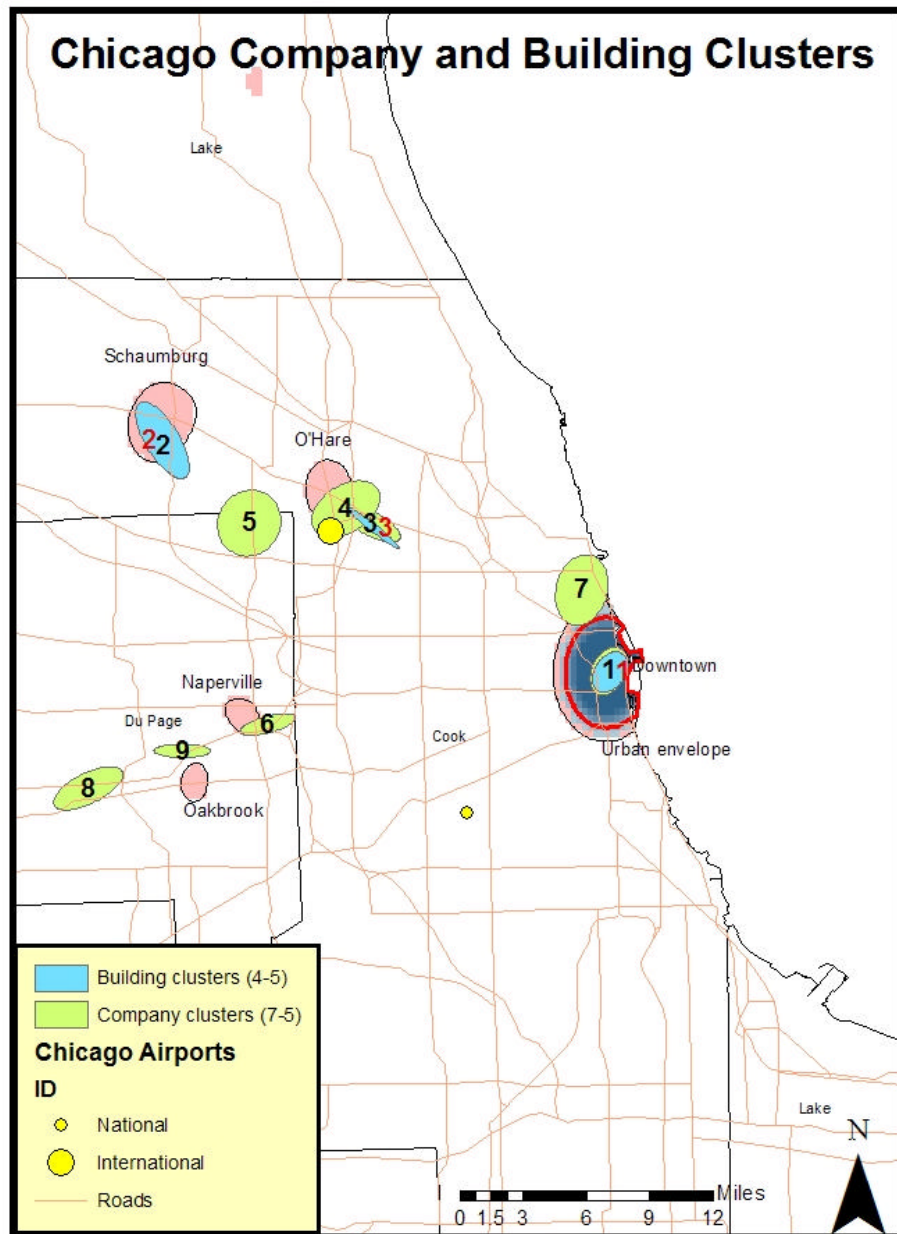
MAP 10B Chicago APS TNC Clusters



MAP 11A Chicago Office Buildings

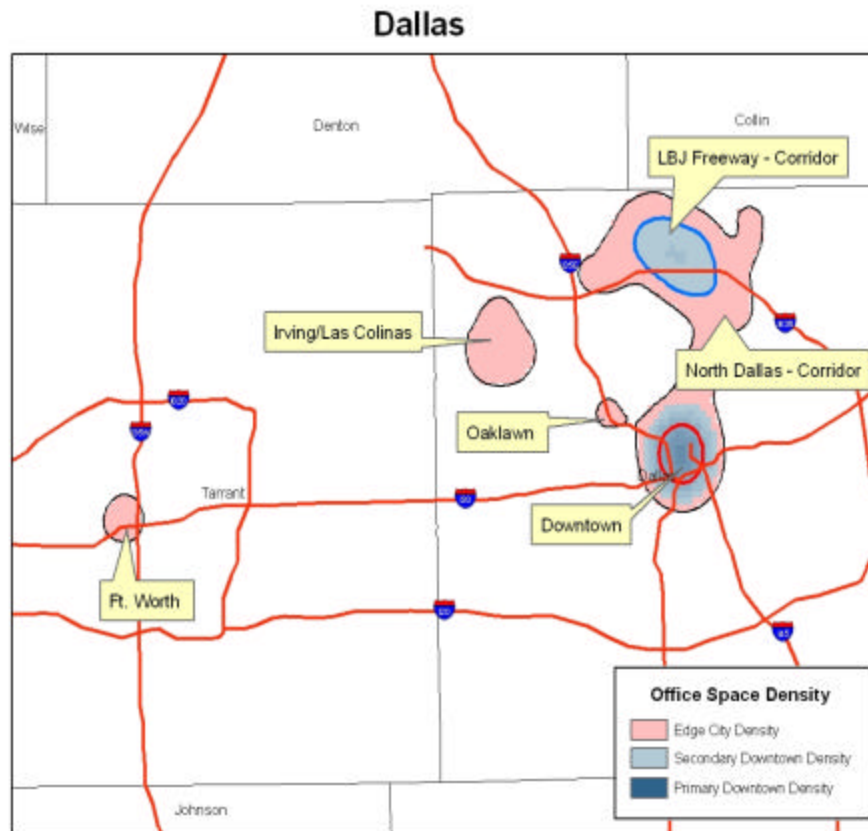


MAP 11B Chicago Office Building Clusters



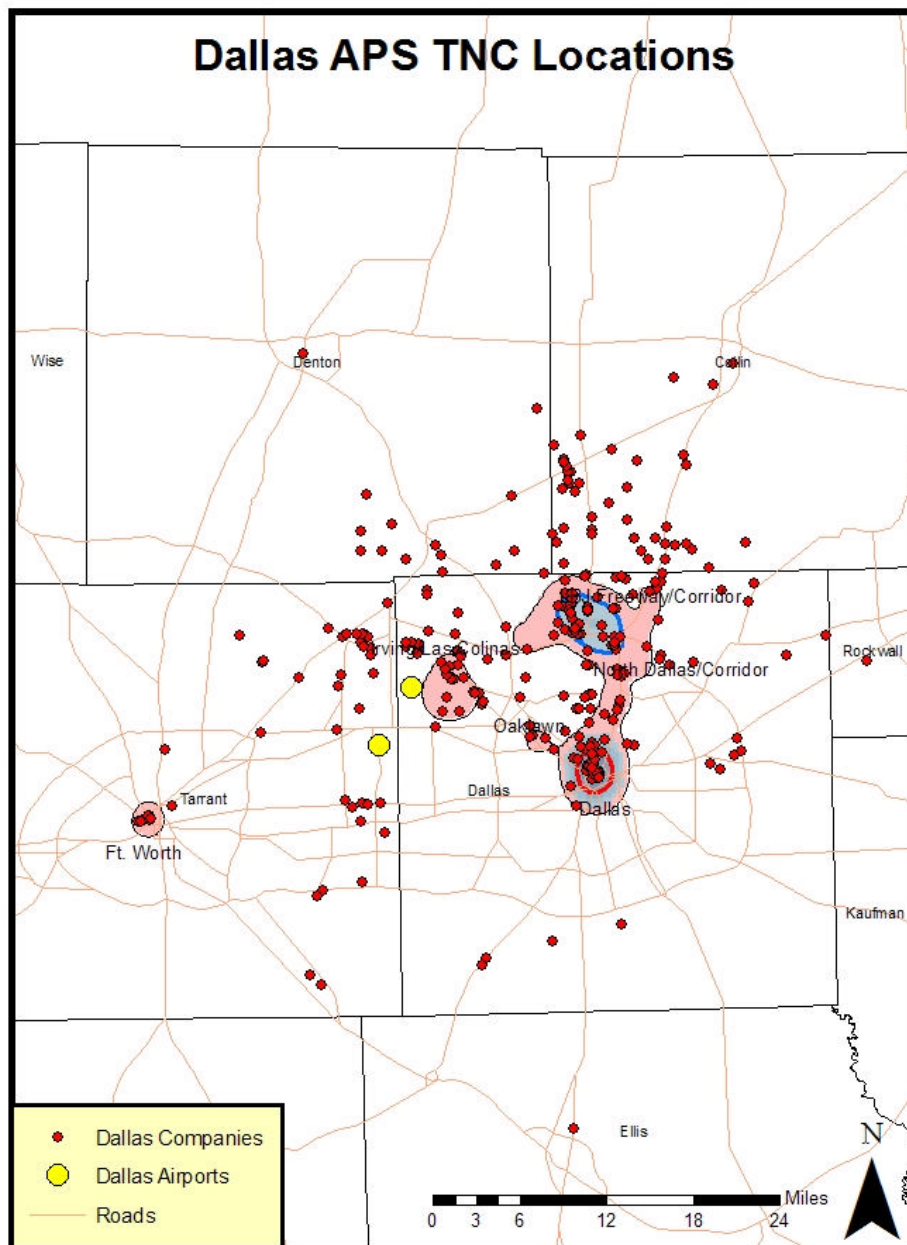
MAP 12 Chicago Company-Building Clusters

DALLAS MAPS

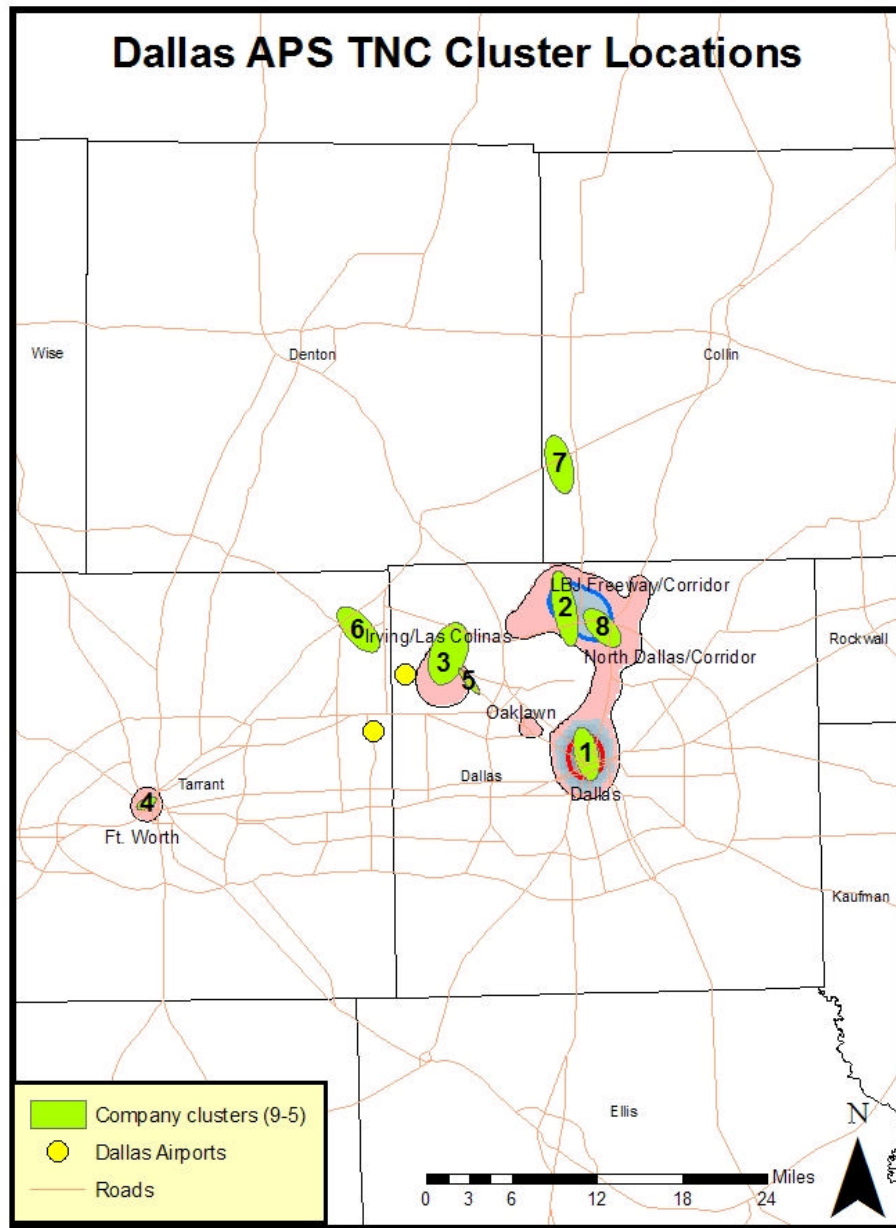


MAP 13 Dallas⁴

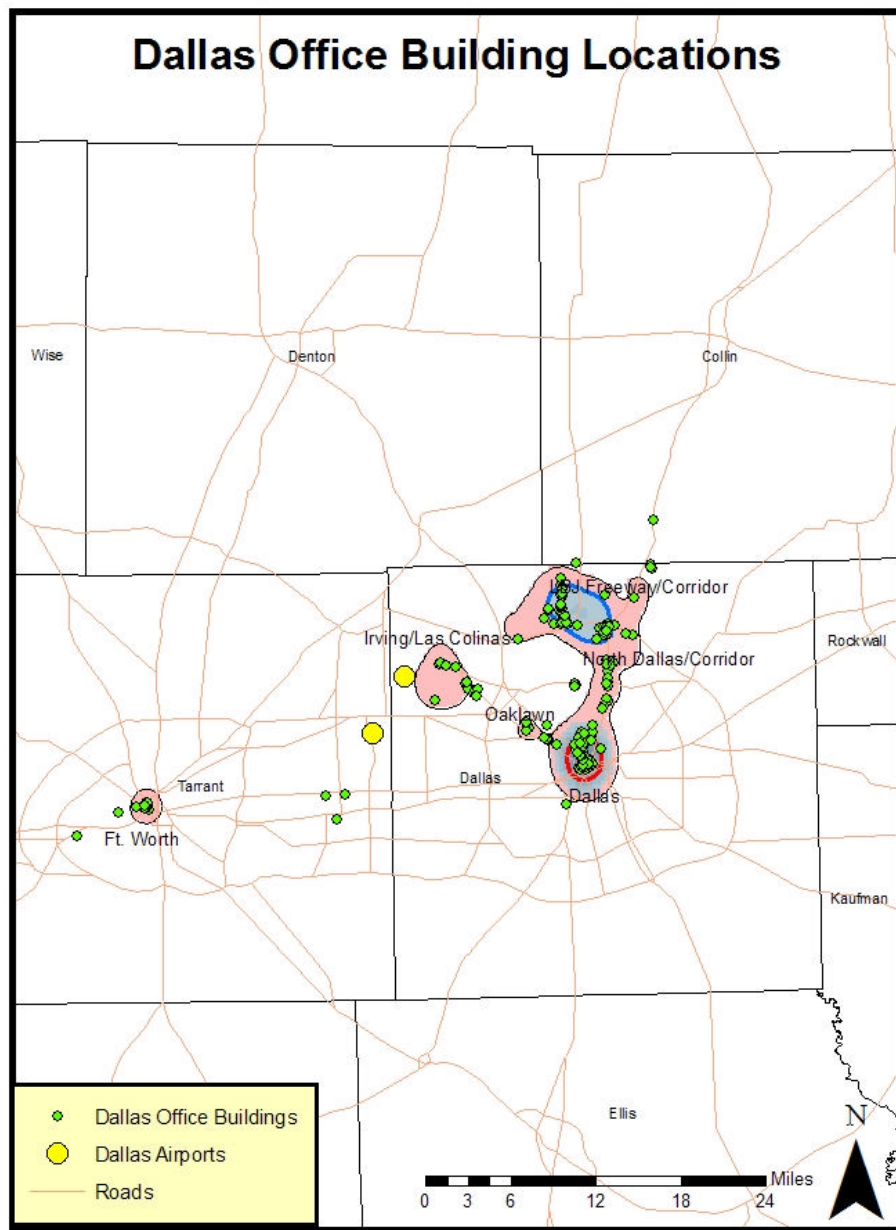
⁴ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



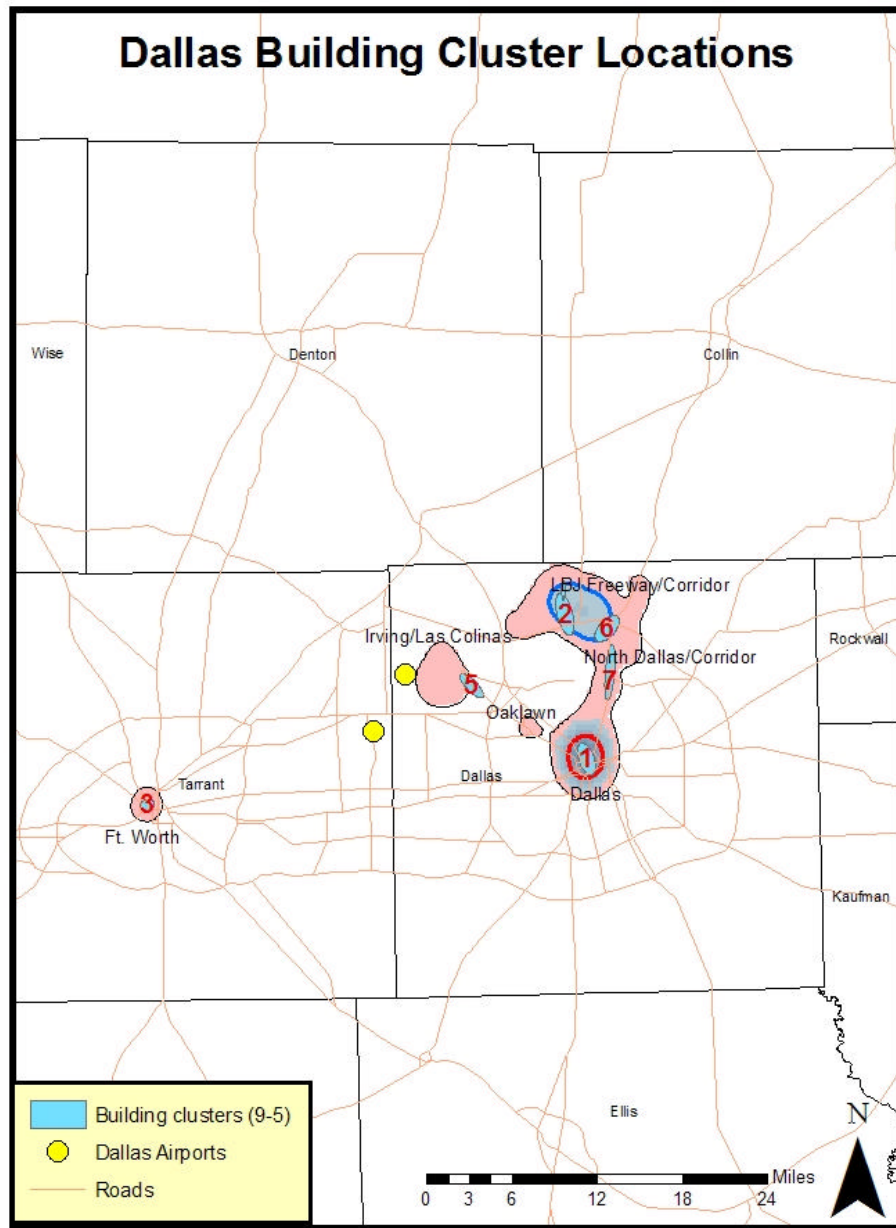
Map 14A Dallas APS TNCs



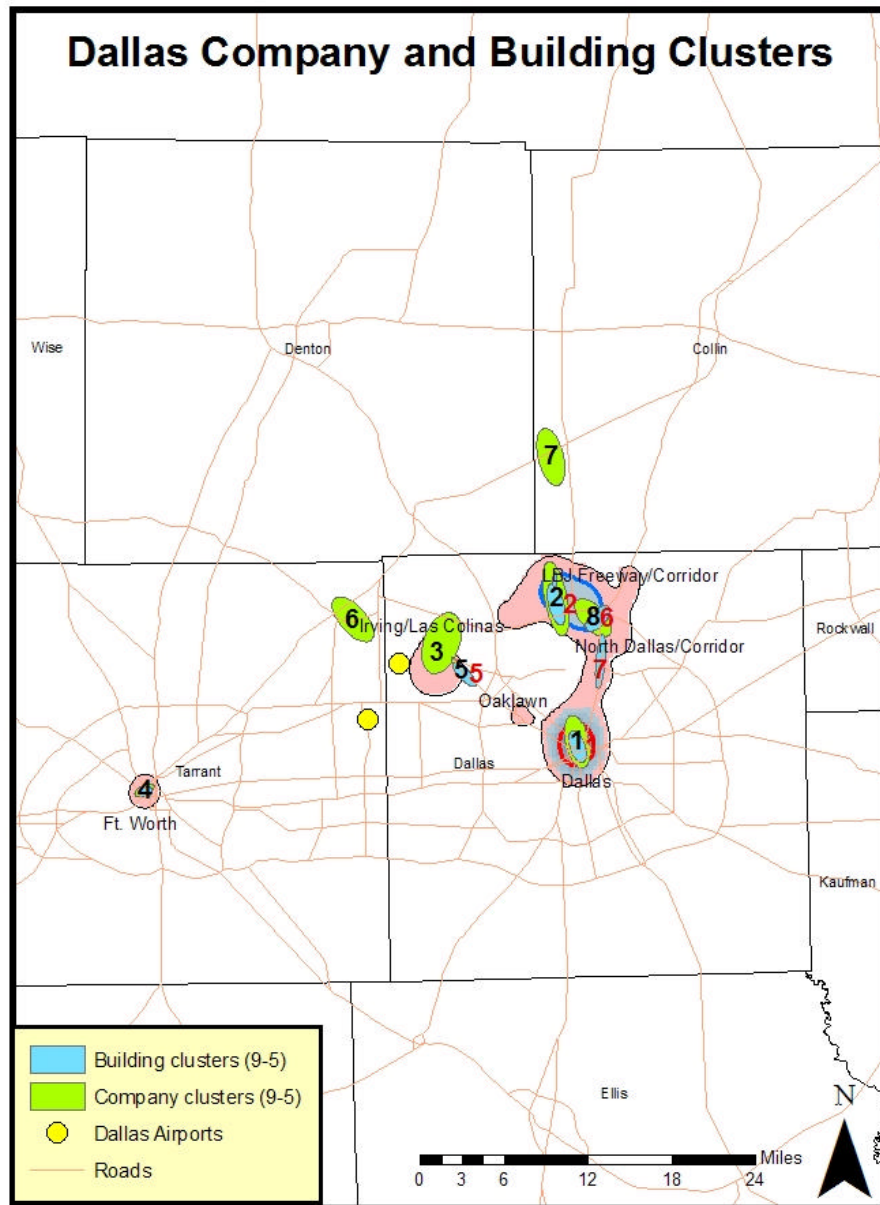
MAP 14B Dallas APS TNC Clusters



MAP 15A Dallas Office Buildings

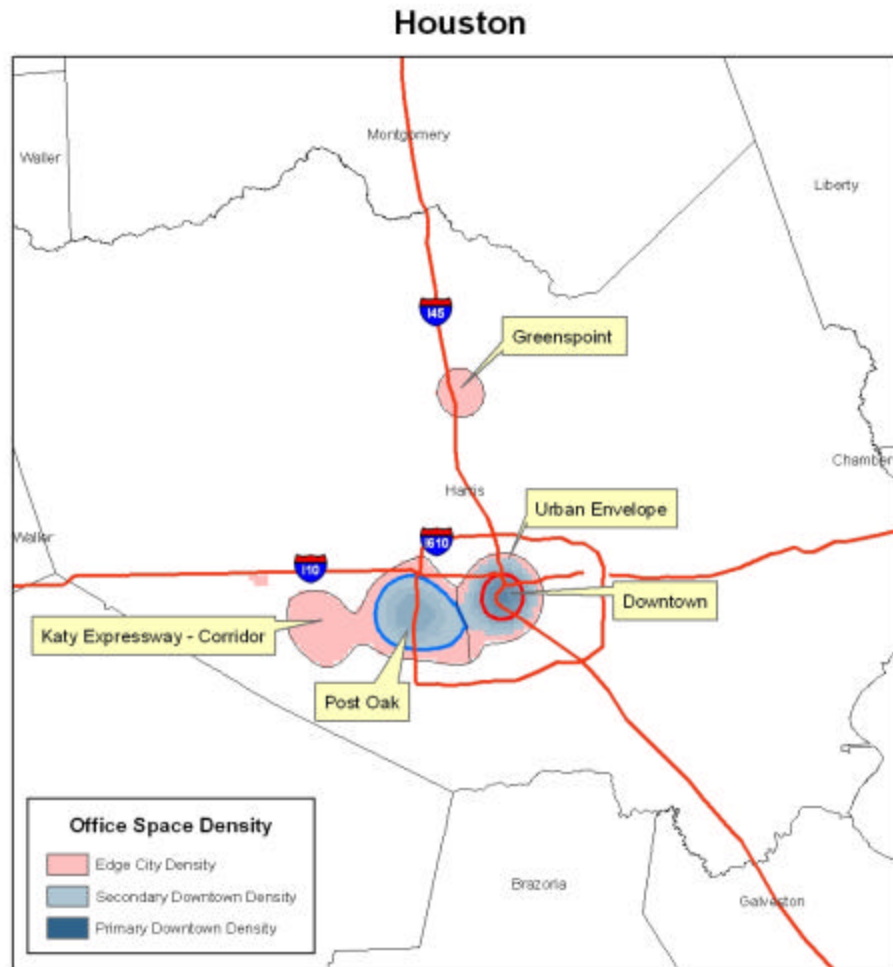


MAP 15B Dallas Office Building Clusters



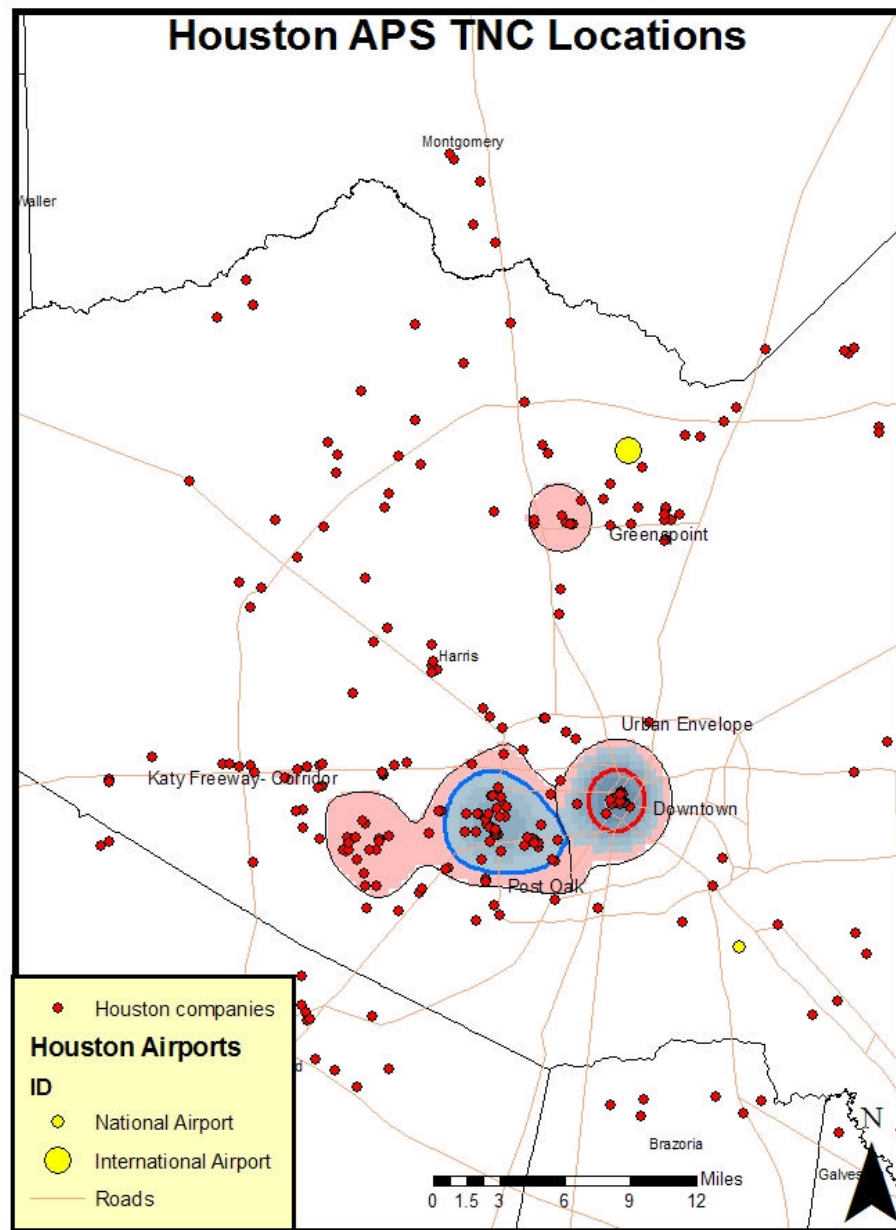
MAP 16 Dallas Company-Building Clusters

HOUSTON MAPS

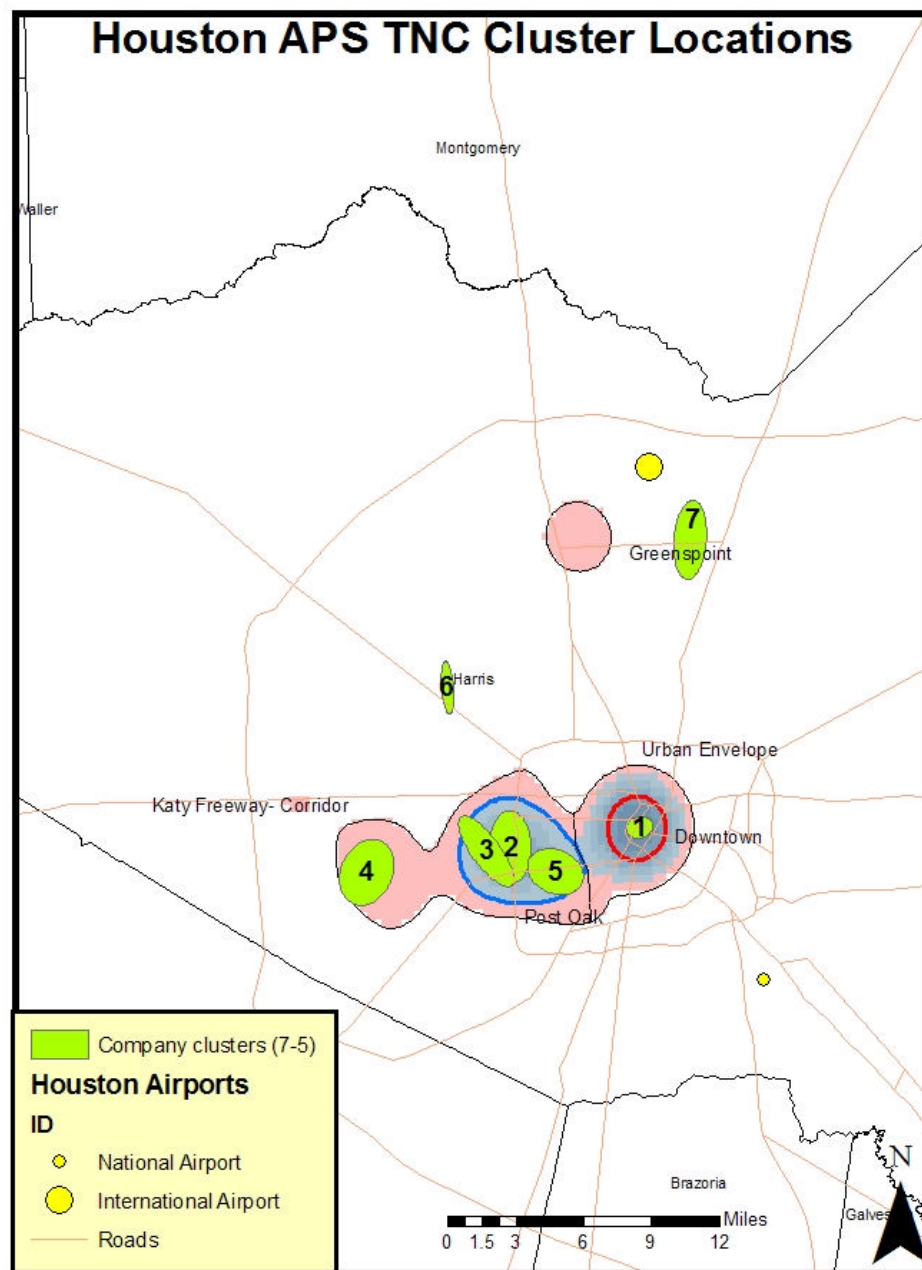


MAP 17 Houston⁵

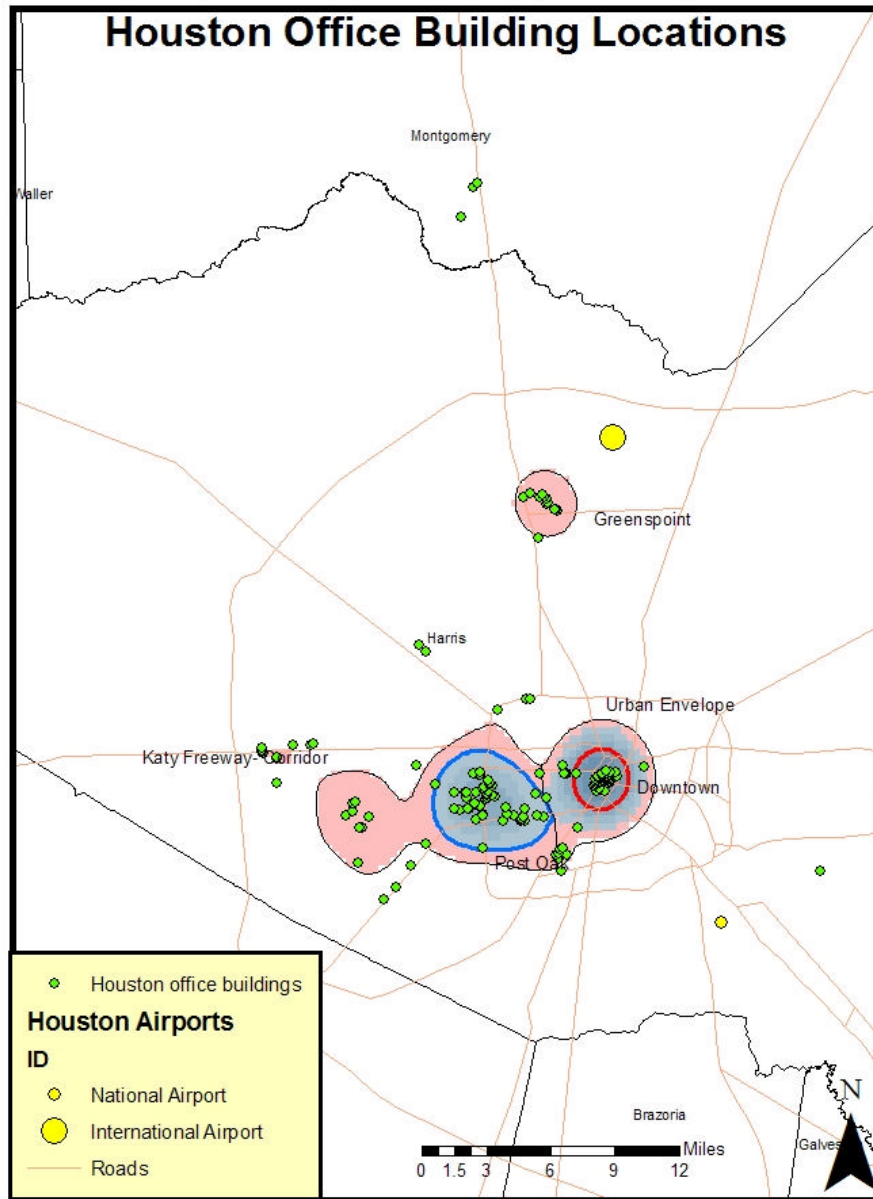
⁵ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



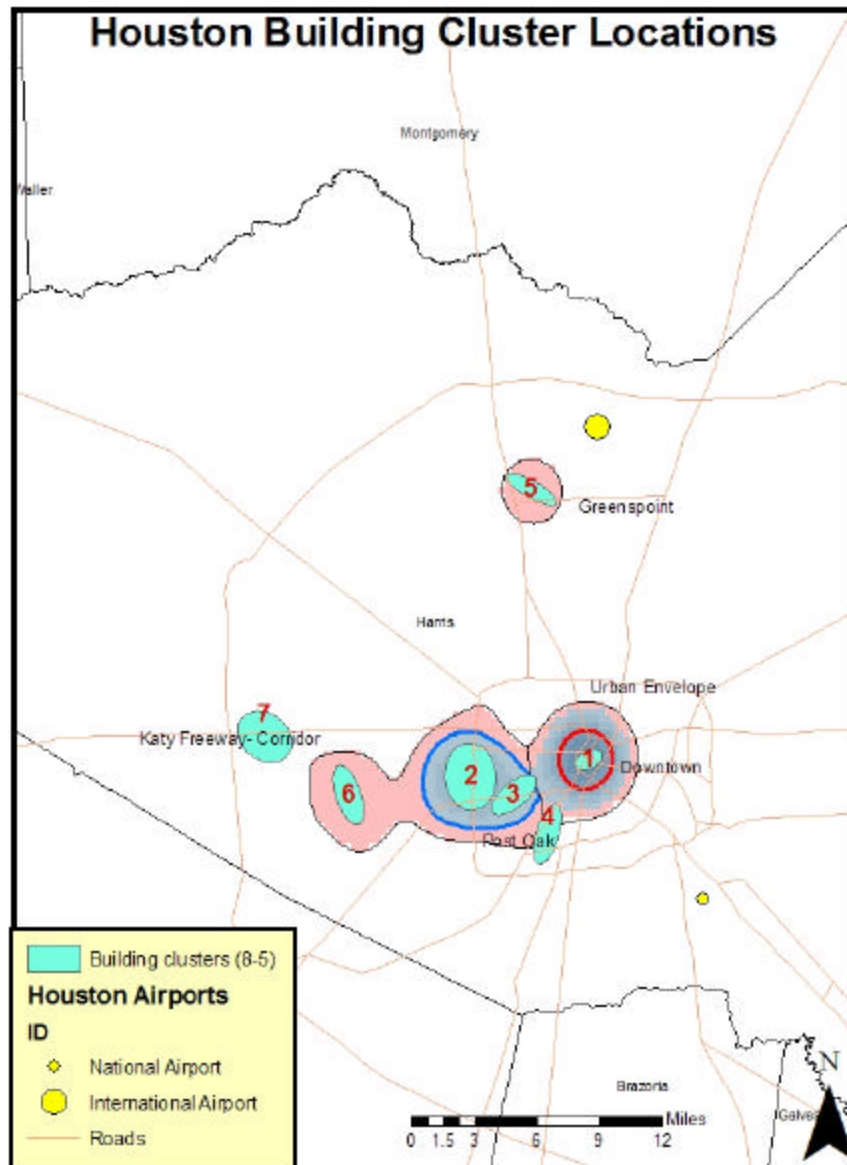
MAP 18A Houston APS TNCs



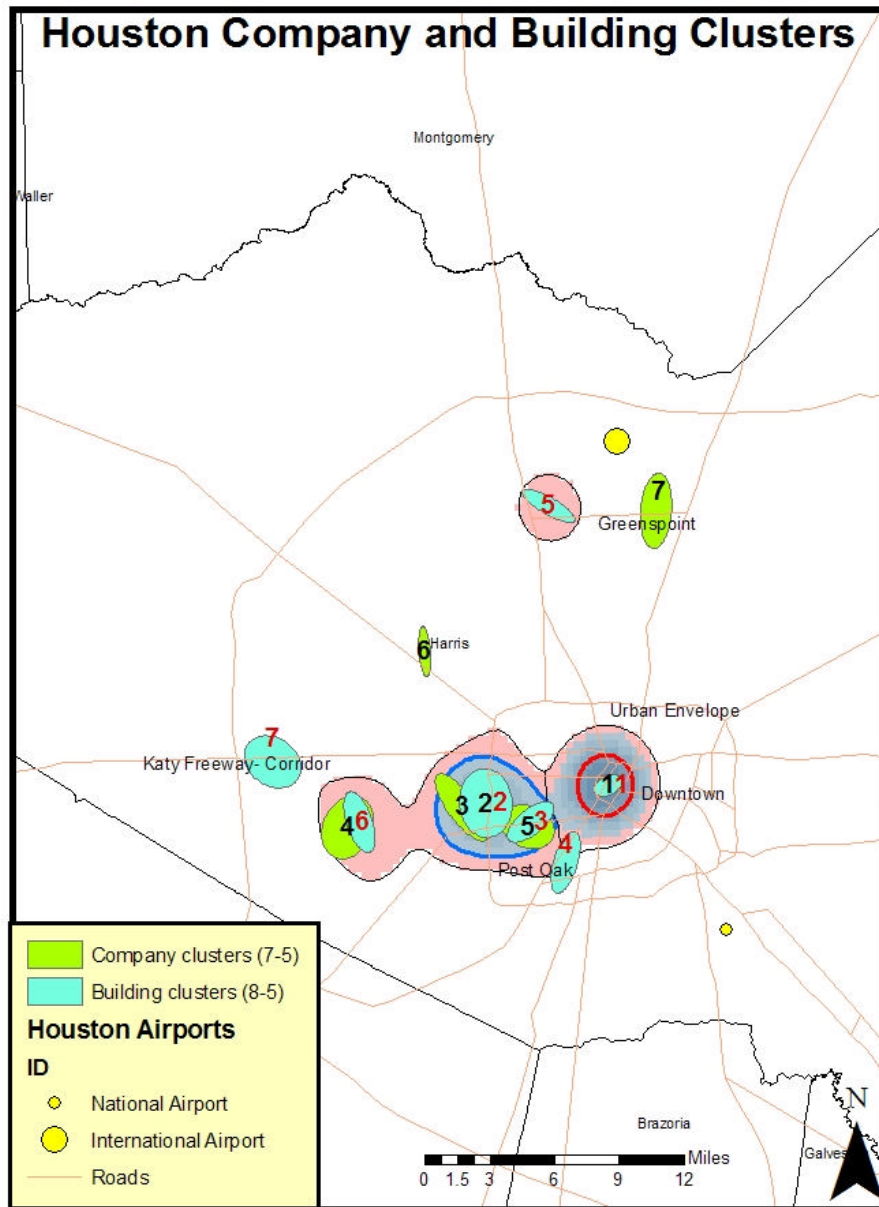
MAP 18B Houston APS TNC Clusters



MAP 19A Houston Office Buildings

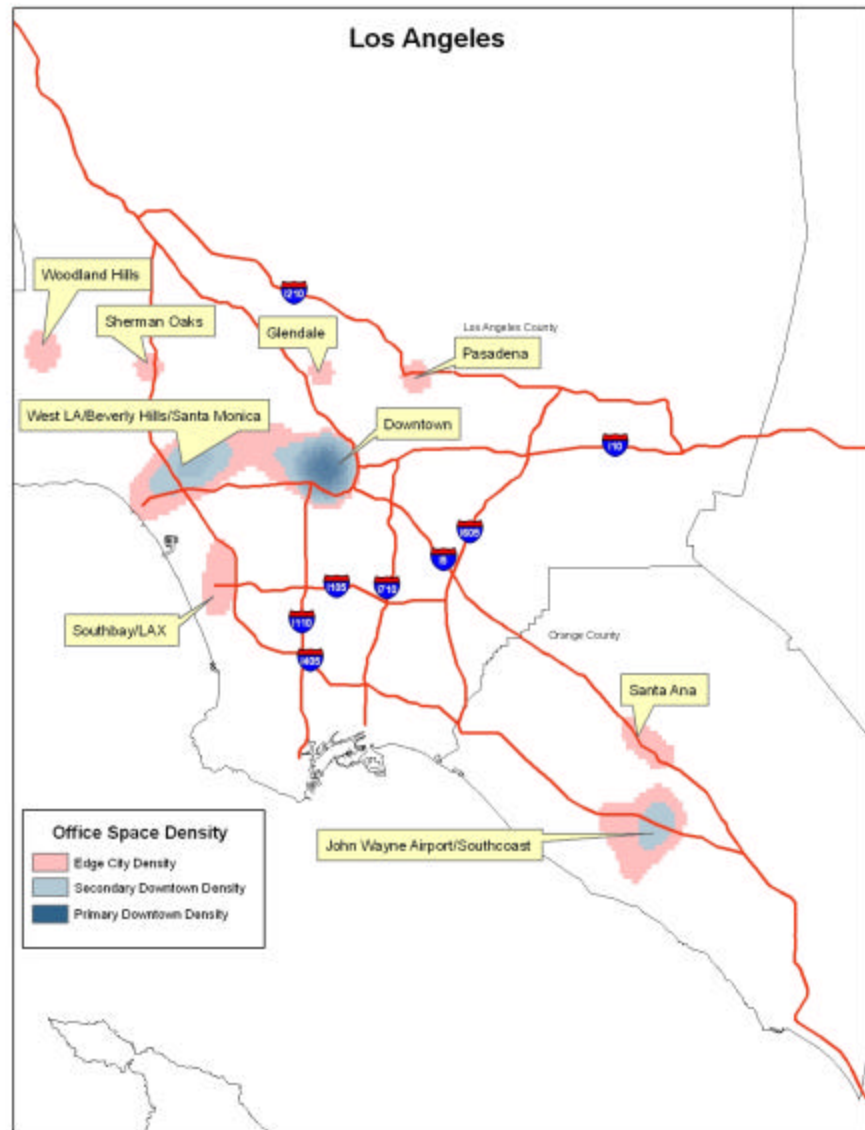


MAP 19B Houston Office Building Clusters



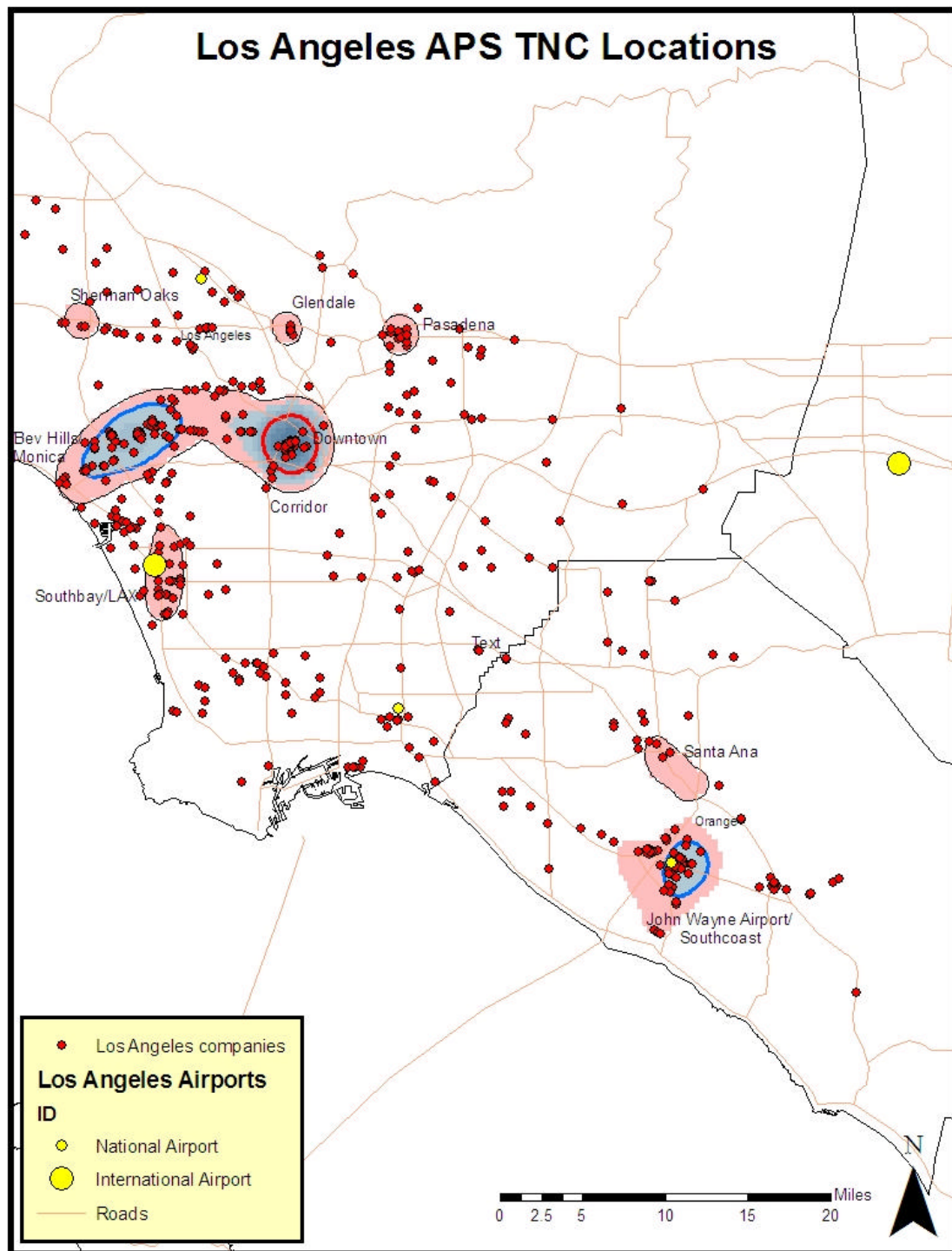
MAP 20 Houston Company-Building Clusters

LOS ANGELES MAPS

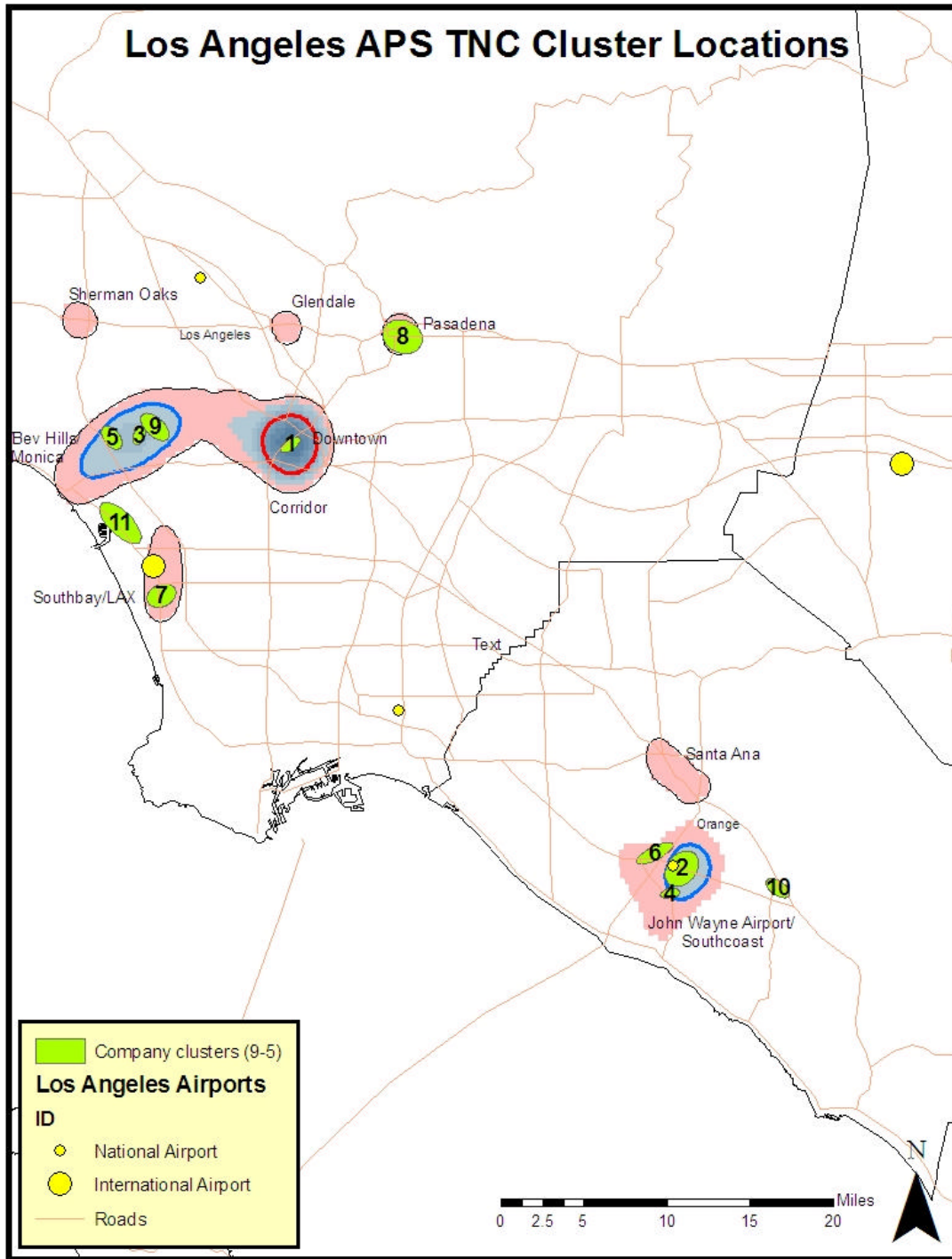


MAP 21 Los Angeles⁶

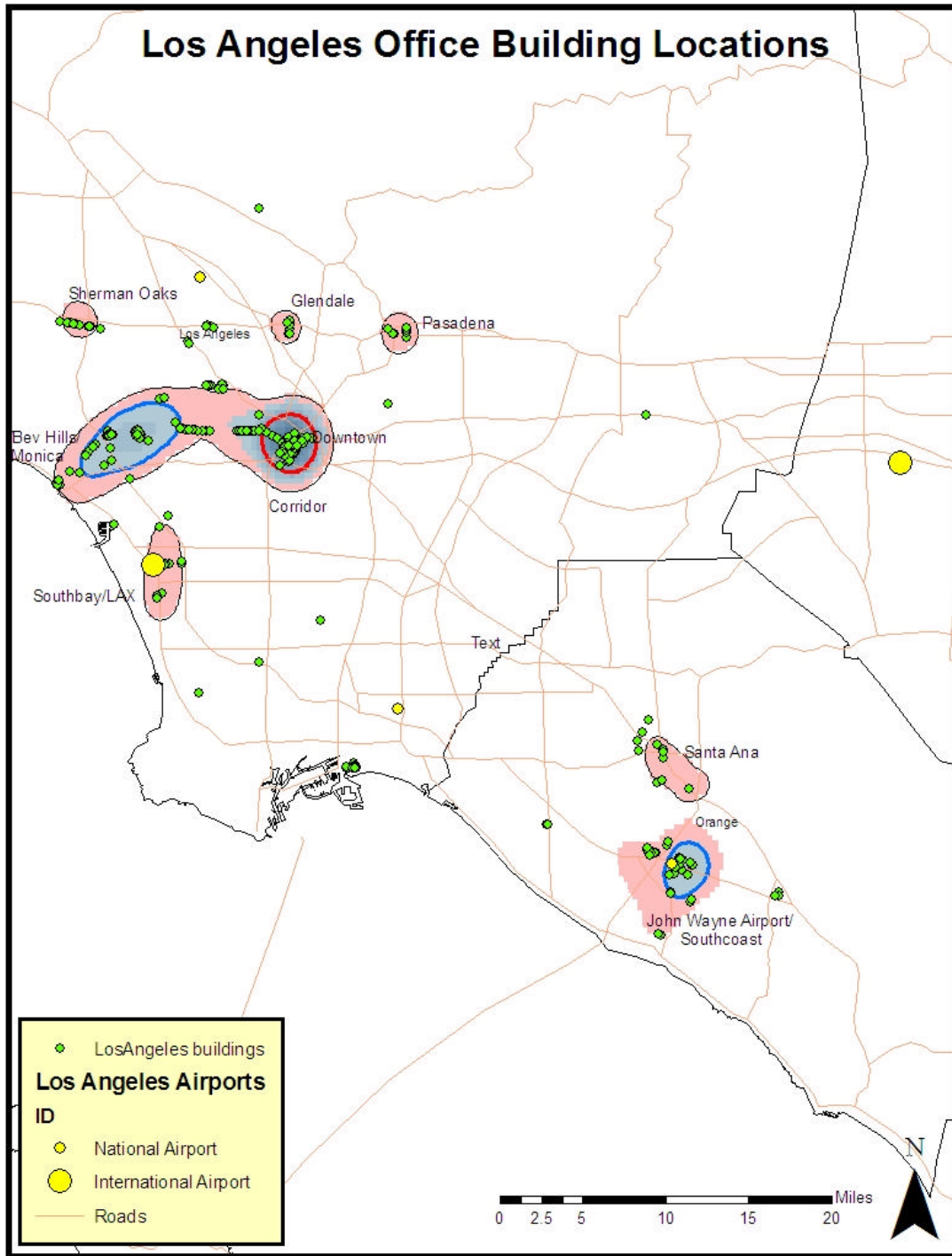
⁶ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



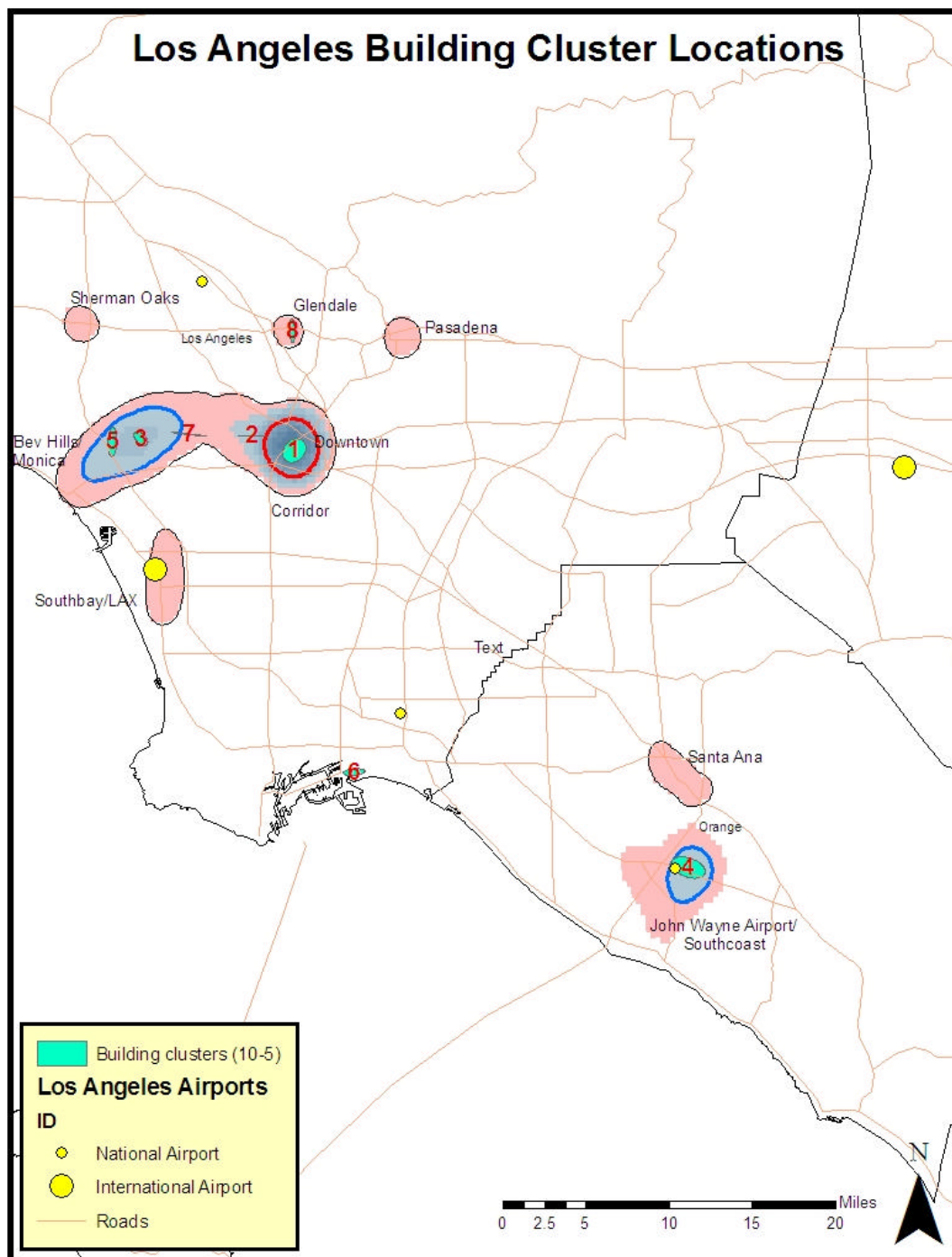
MAP 22A Los Angeles APS TNCs



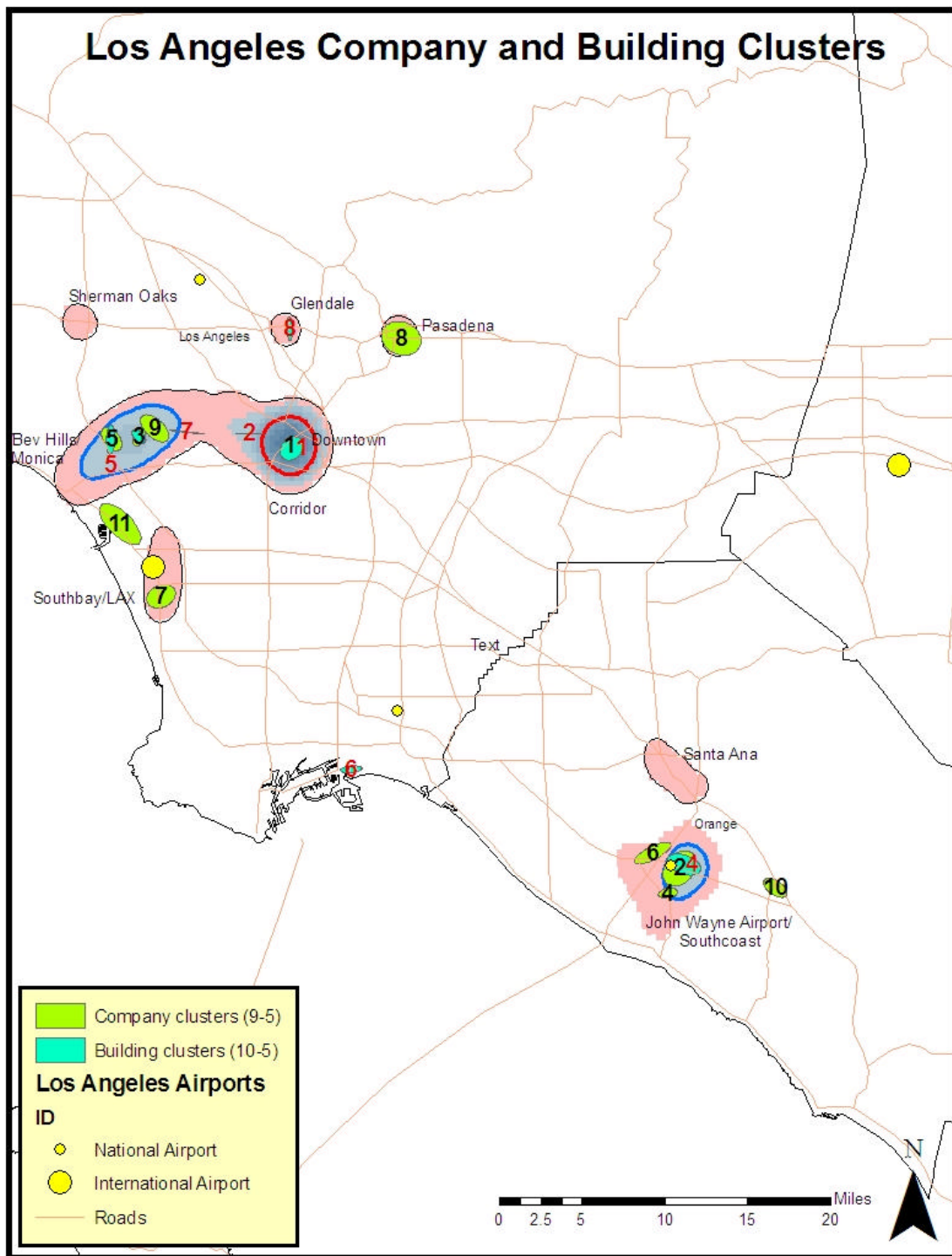
MAP 22B Los Angeles APS TNC Clusters



MAP 23A Los Angeles Office Buildings



MAP 23B Los Angeles Office Building Clusters



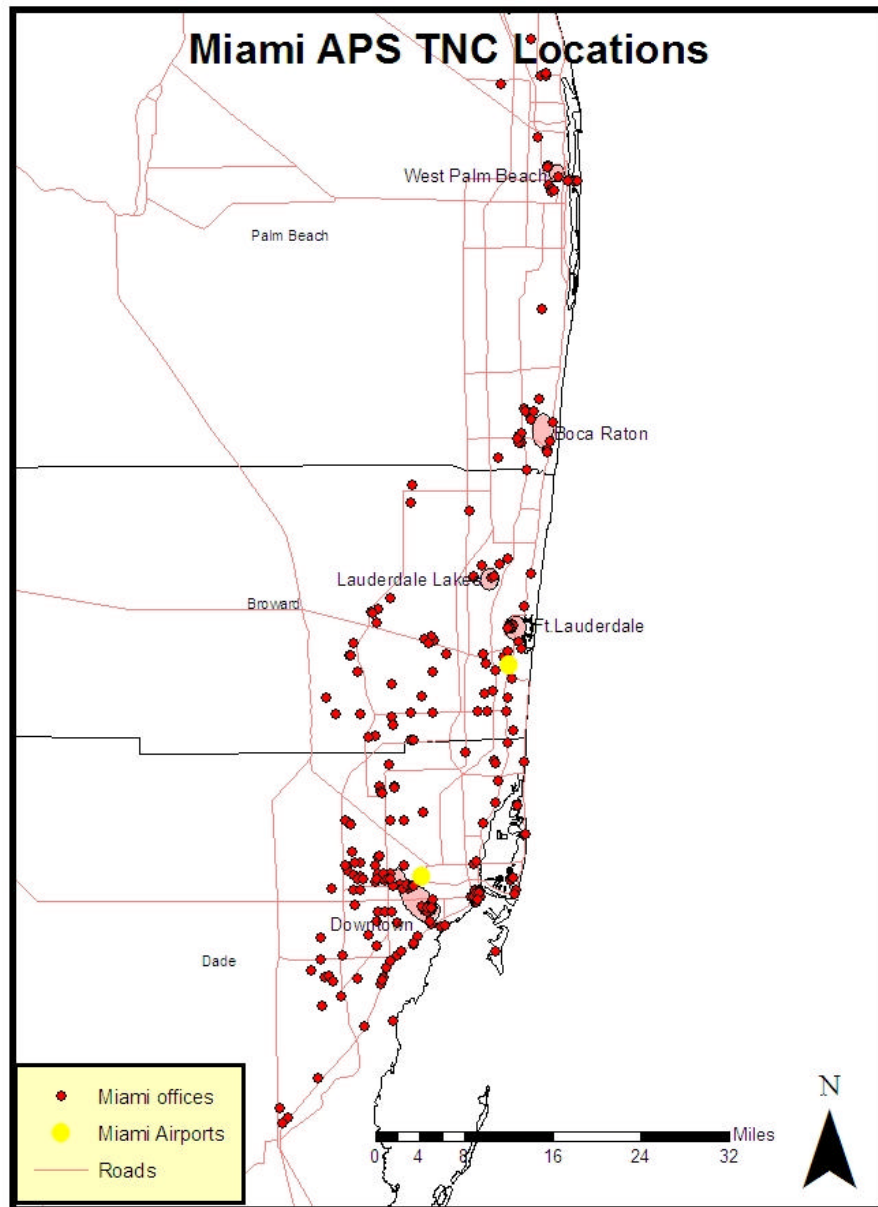
MAP 24 Los Angeles Company-Building Clusters

MIAMI MAPS

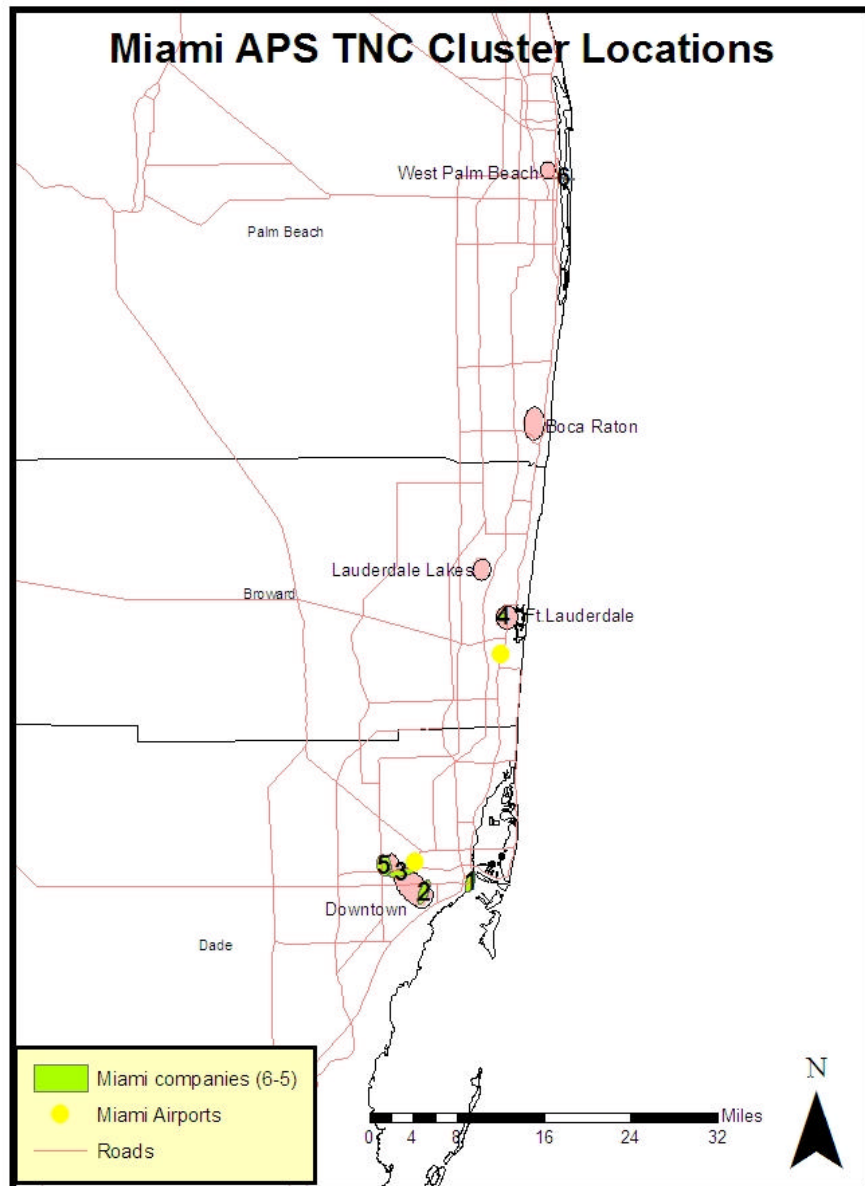


MAP 25 Miami⁷

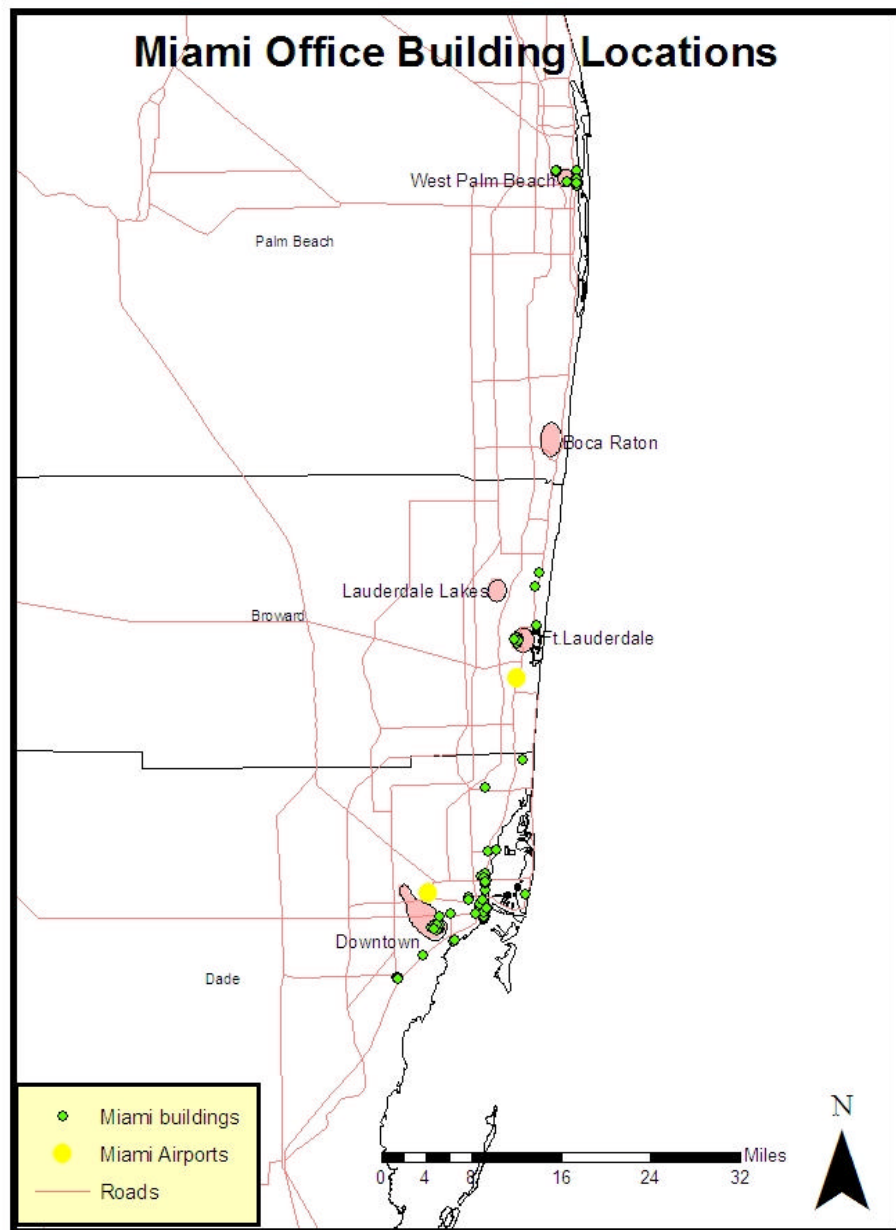
⁷ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



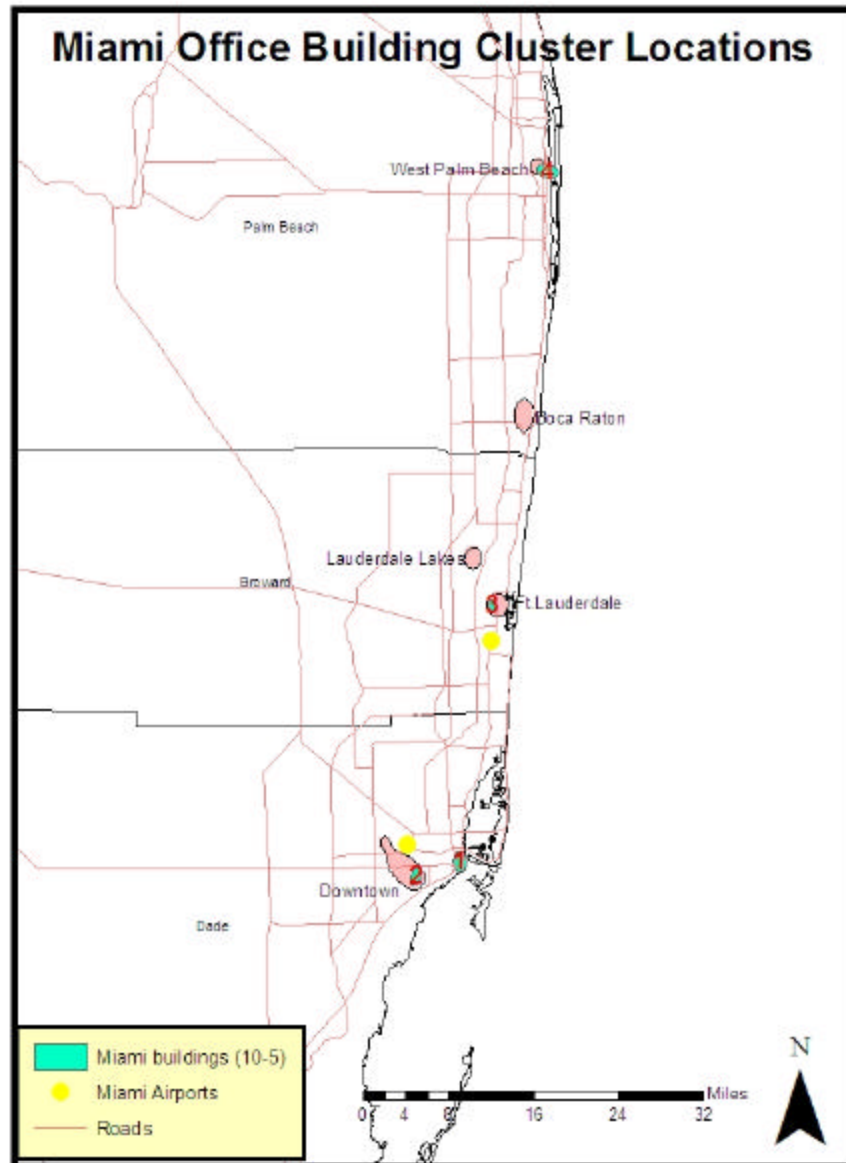
MAP 26A Miami APS TNCs



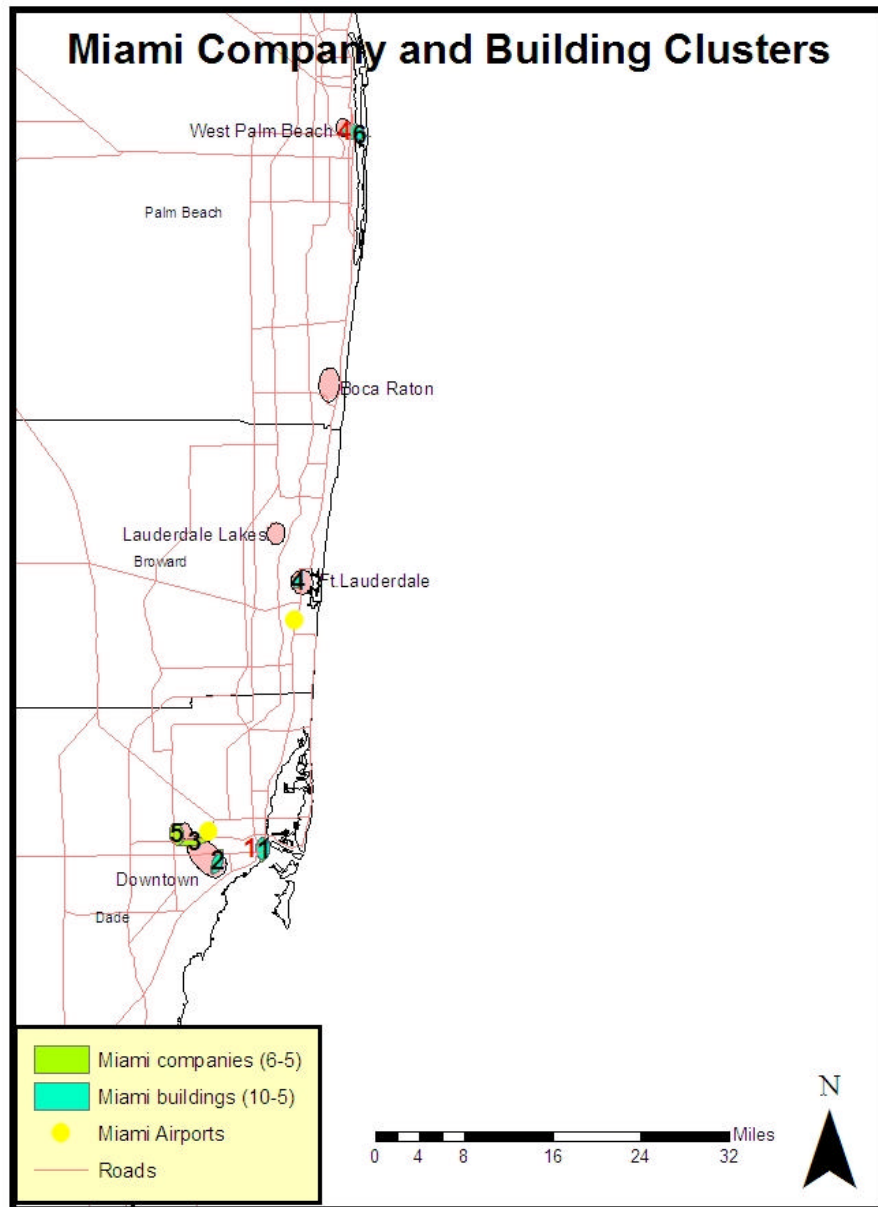
MAP 26B Miami APS TNC Clusters



MAP 27A Miami Office Buildings

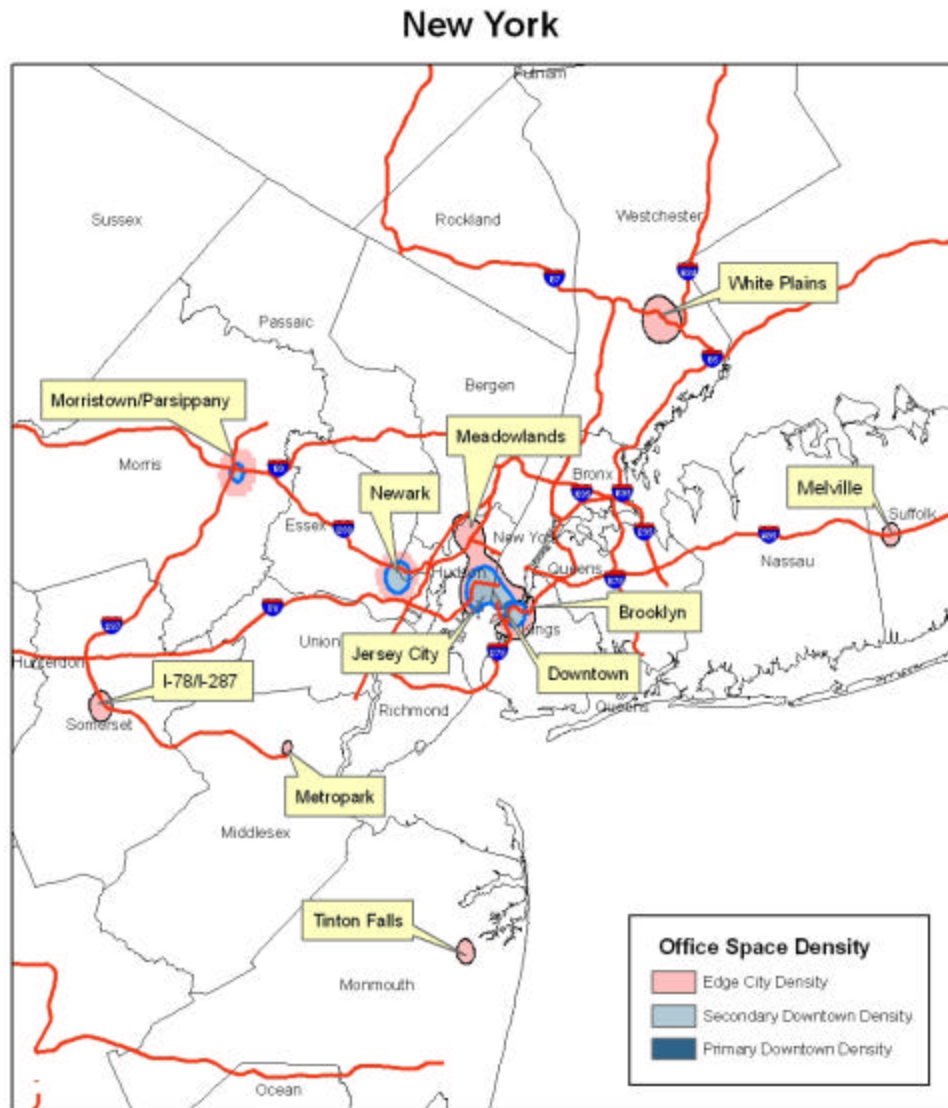


MAP 27B Miami Office Building Clusters



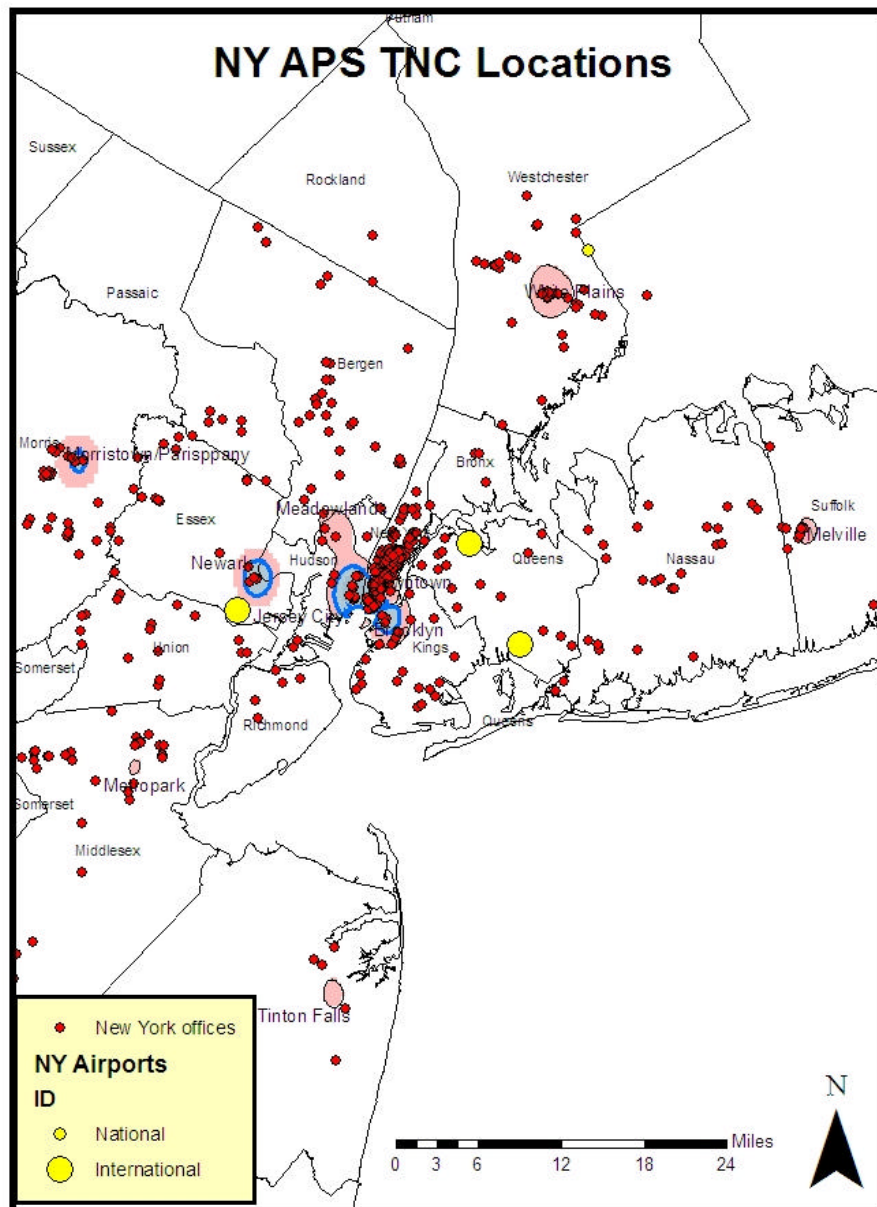
MAP 28 Miami Company-Building Clusters

NEW YORK MAPS

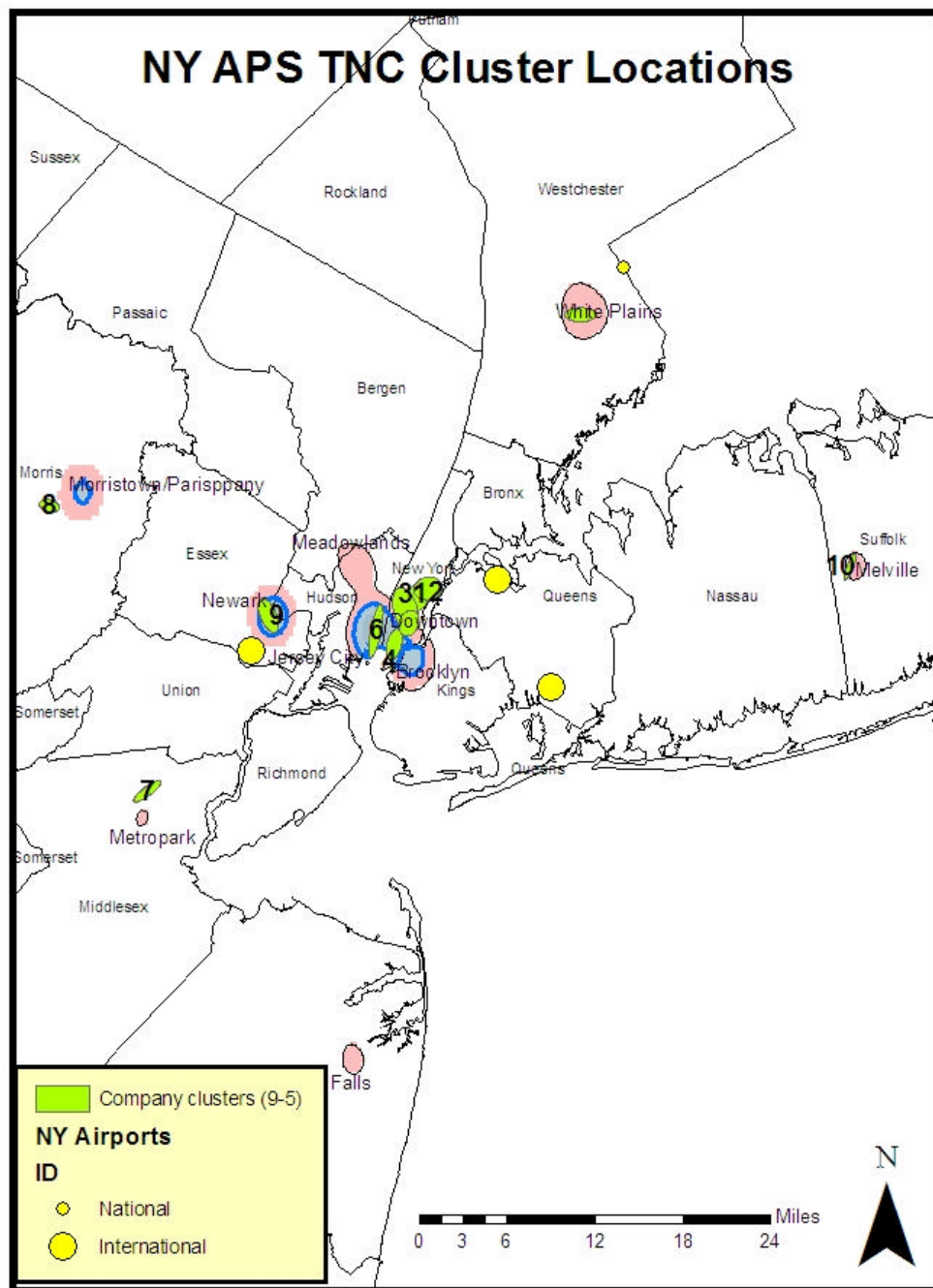


MAP 29 New York⁸

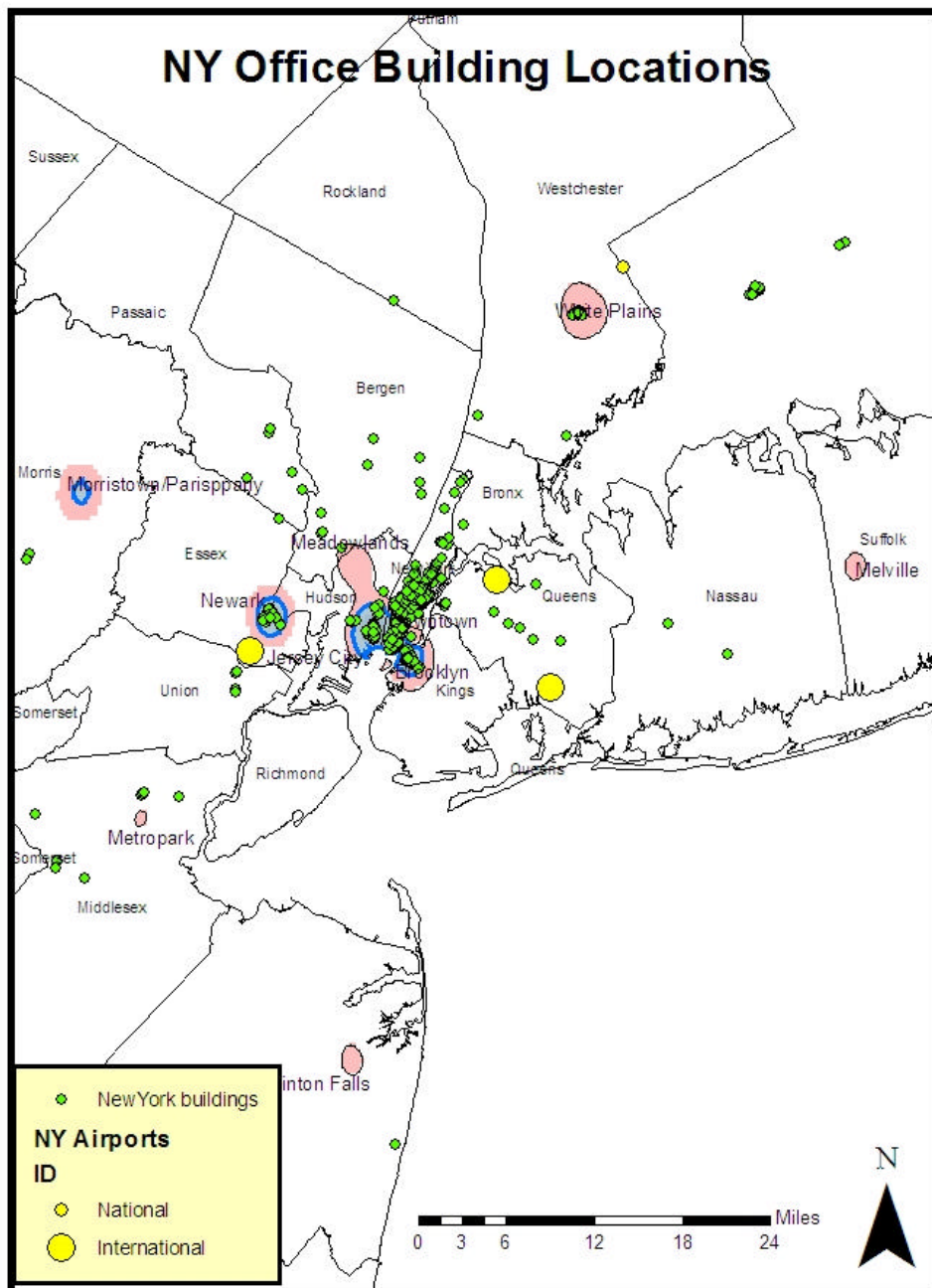
⁸ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



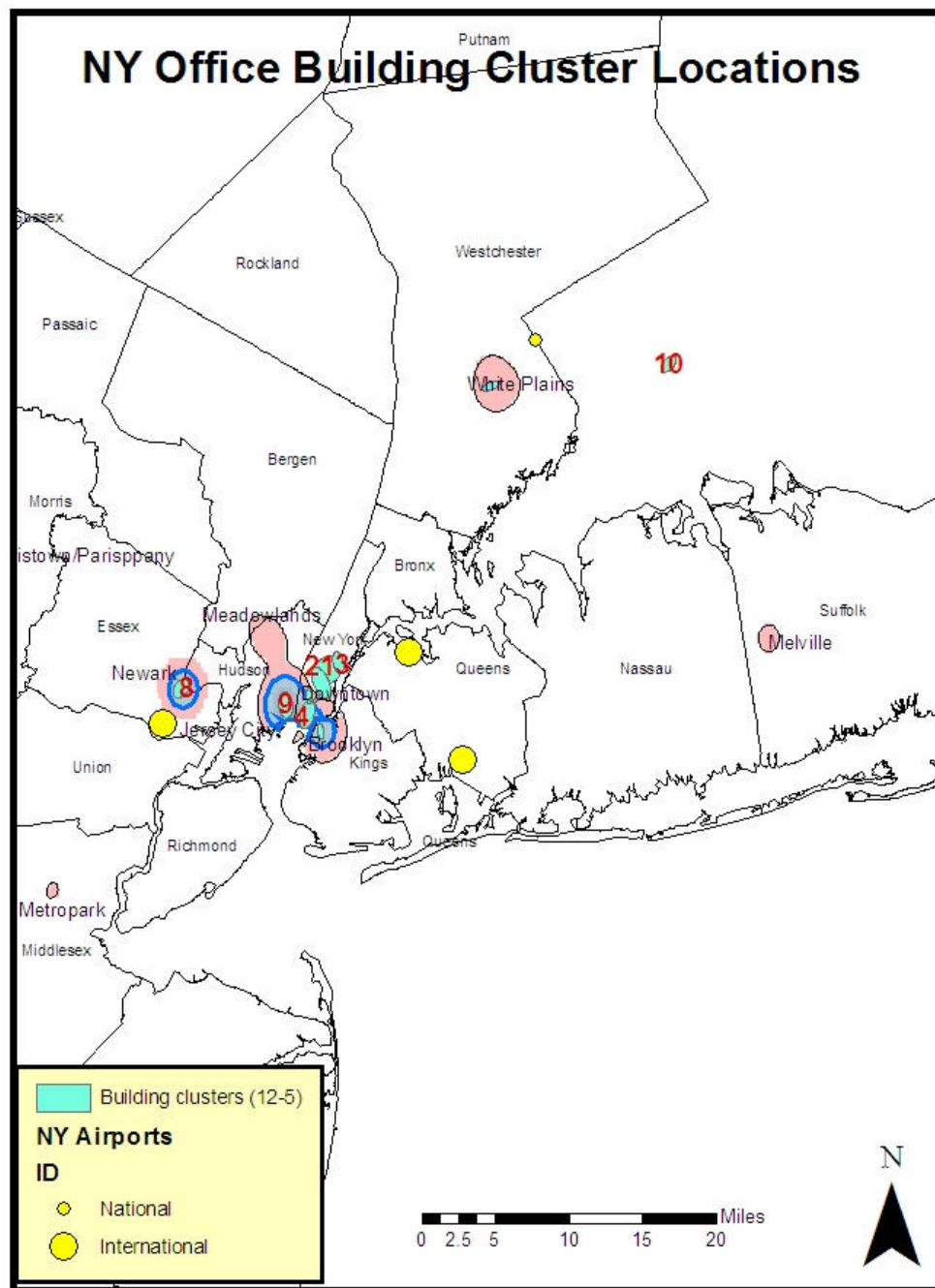
MAP 30A New York APS TNCs



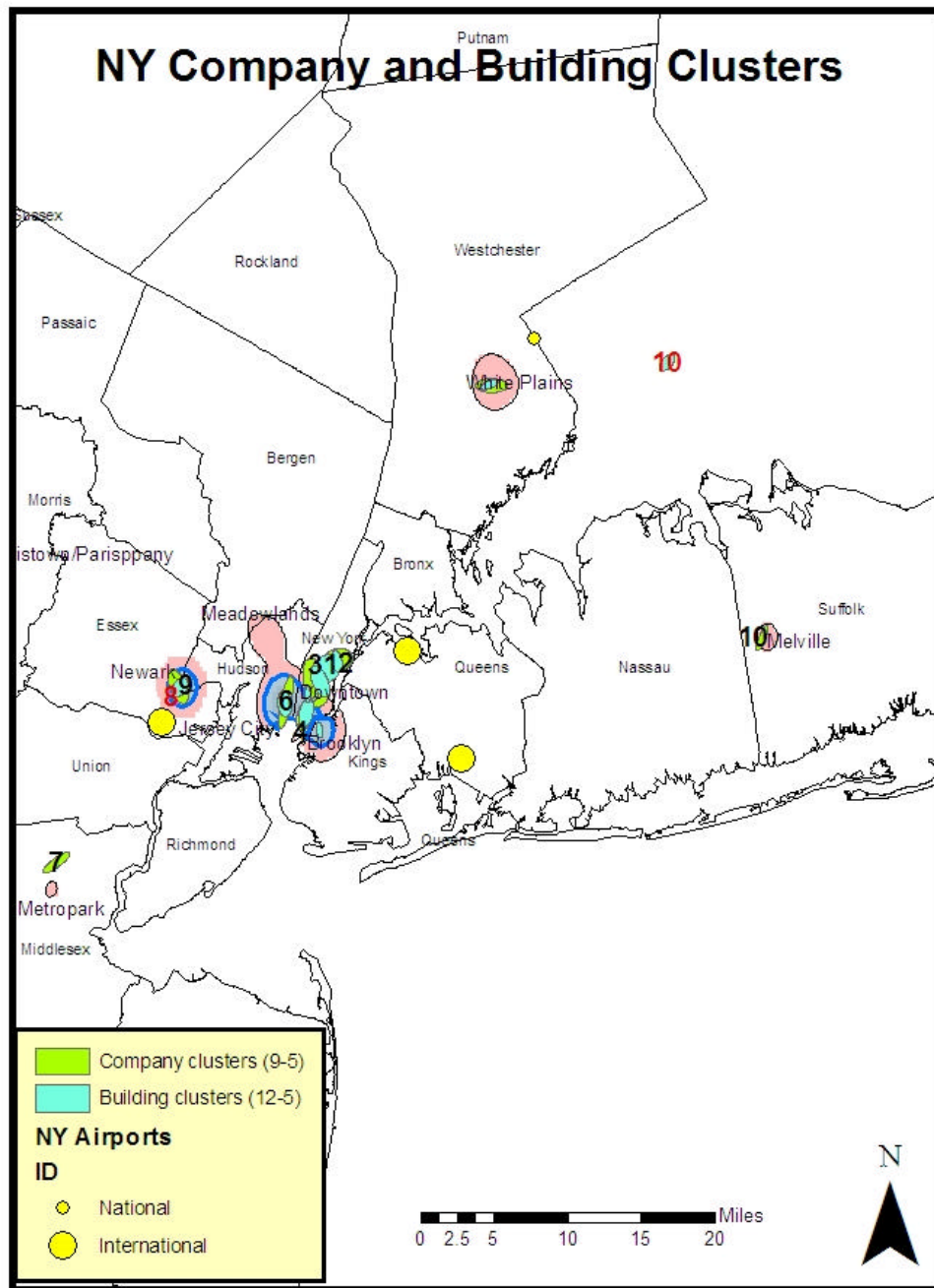
MAP 30B New York APS TNC Clusters



MAP 31A New York Office Buildings

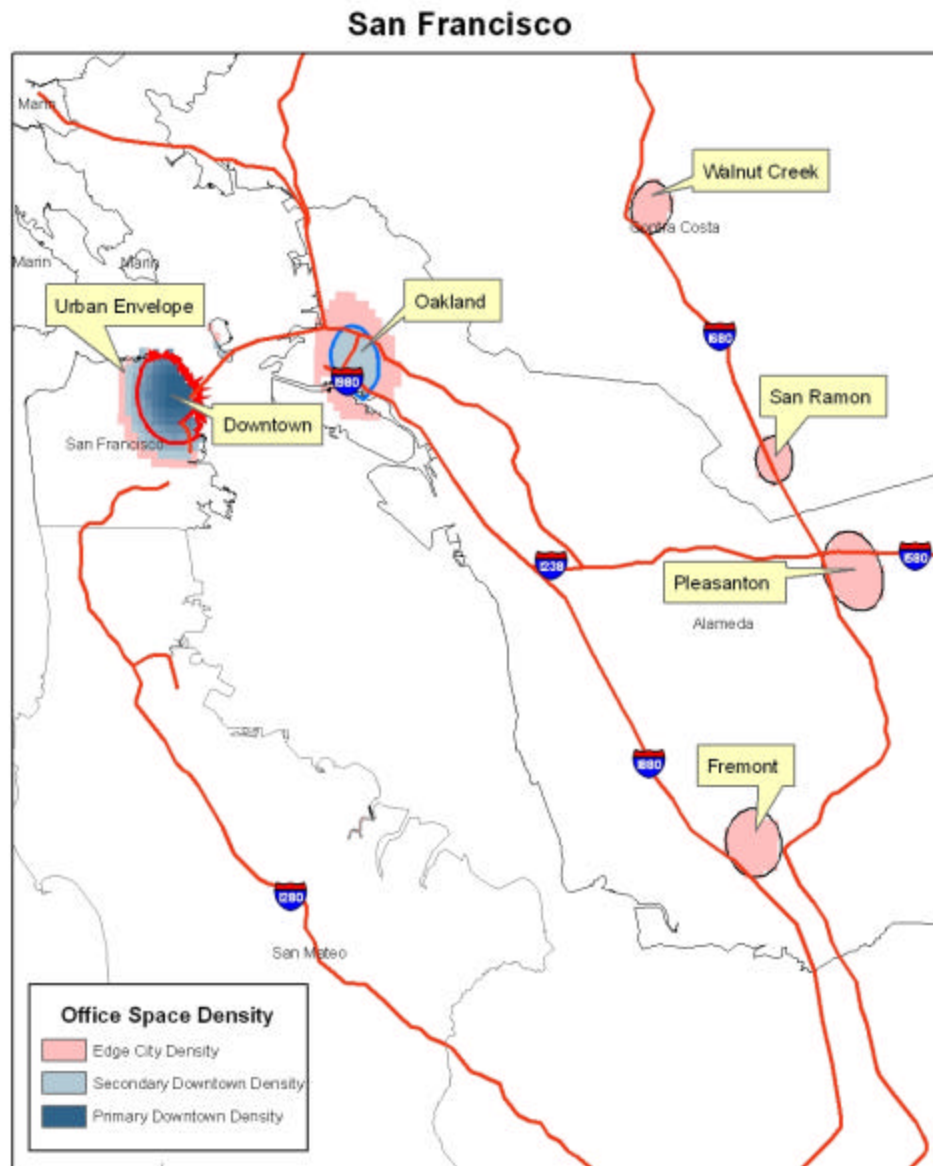


MAP 31B New York Office Building Clusters



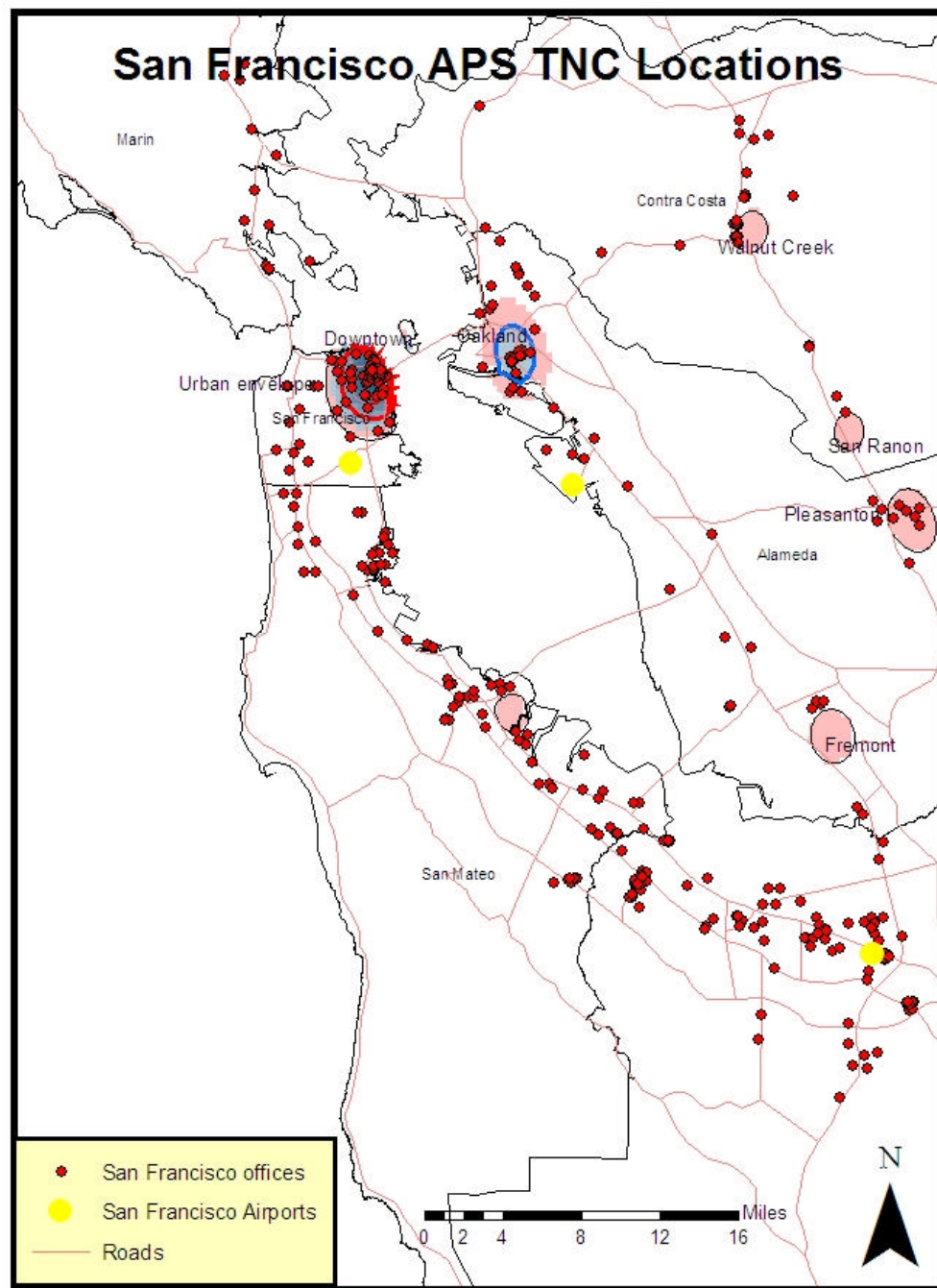
MAP 32 New York Company-Building Clusters

SAN FRANCISCO MAPS

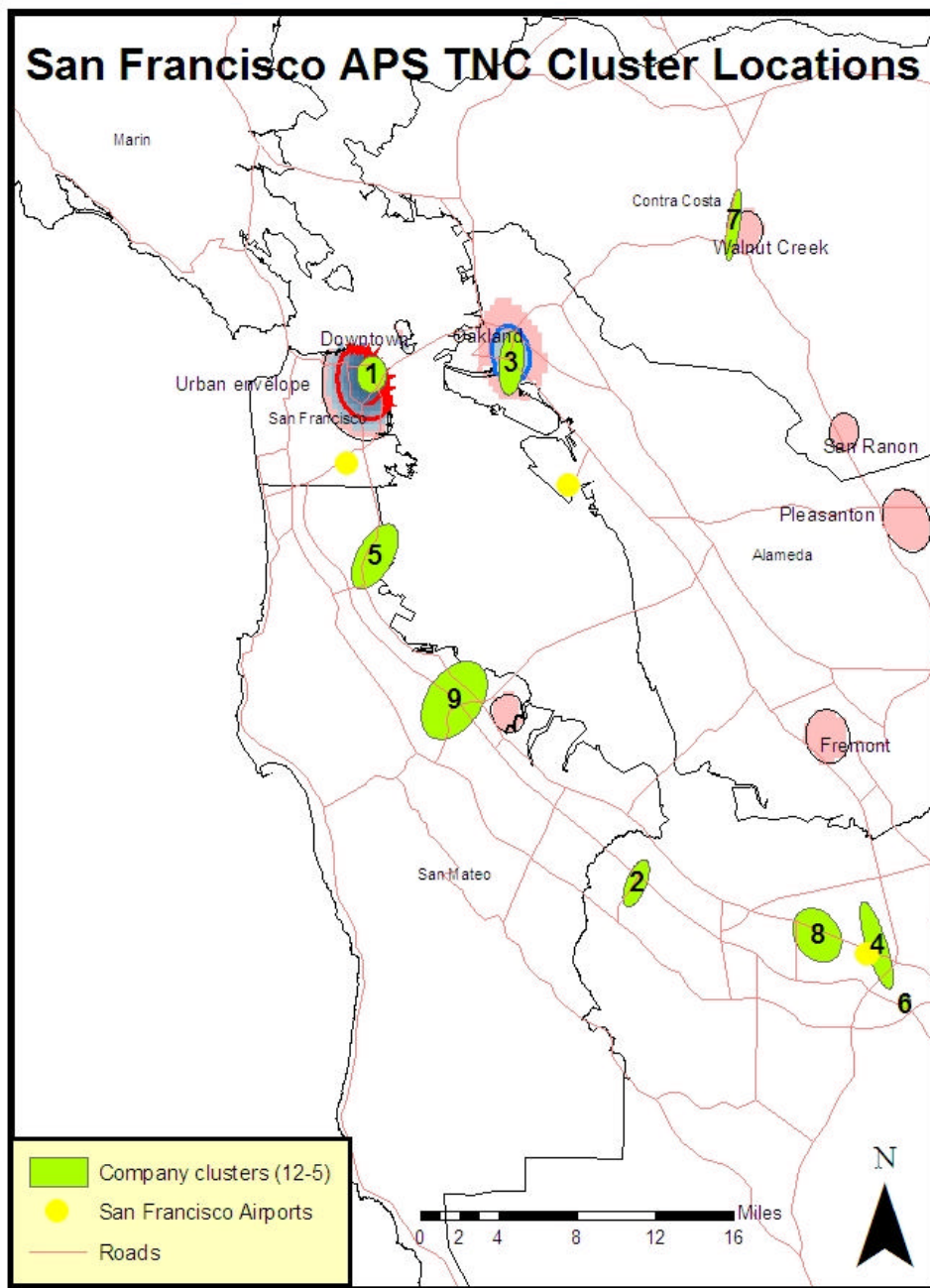


MAP 33 San Francisco⁹

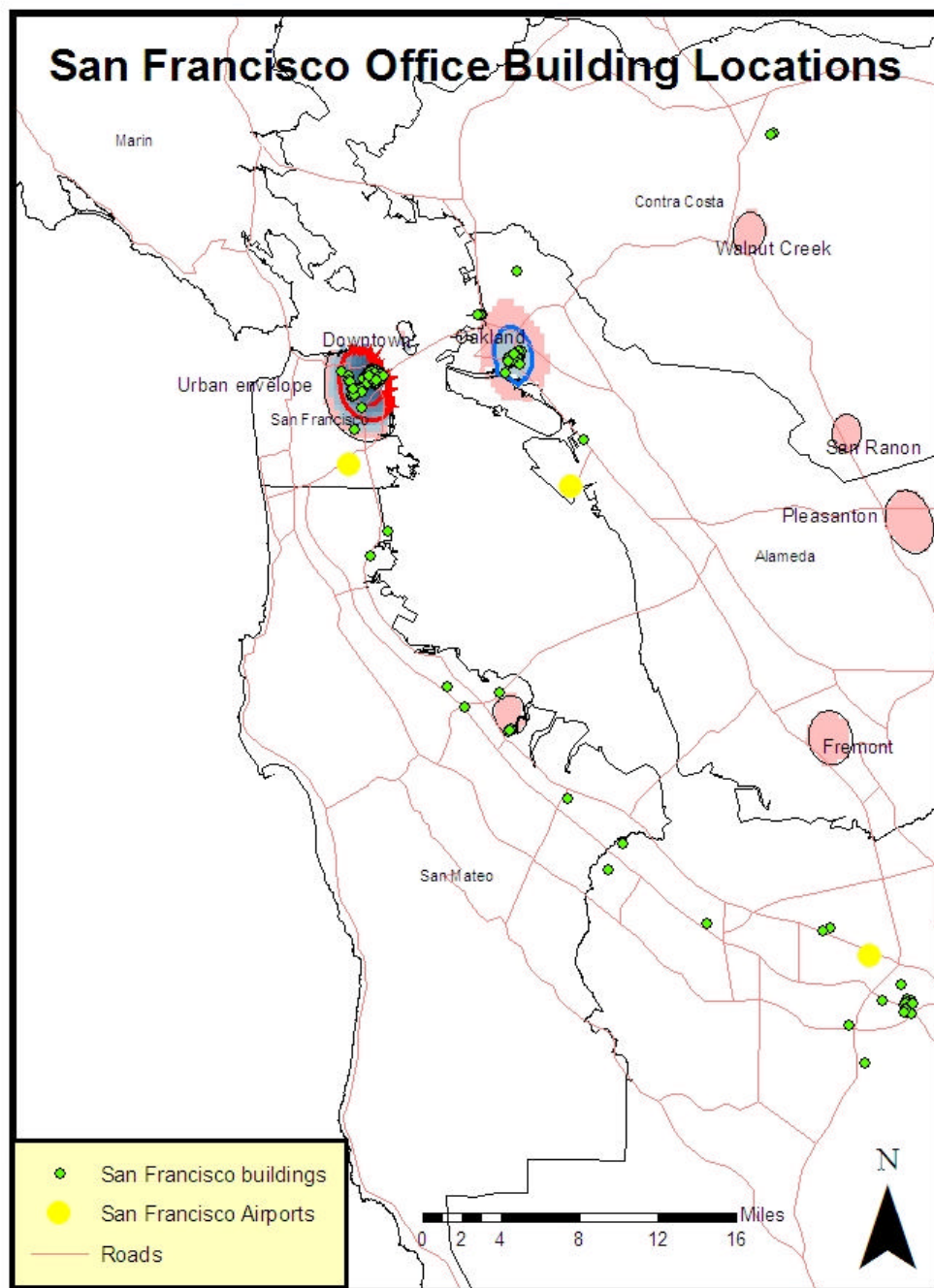
⁹ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



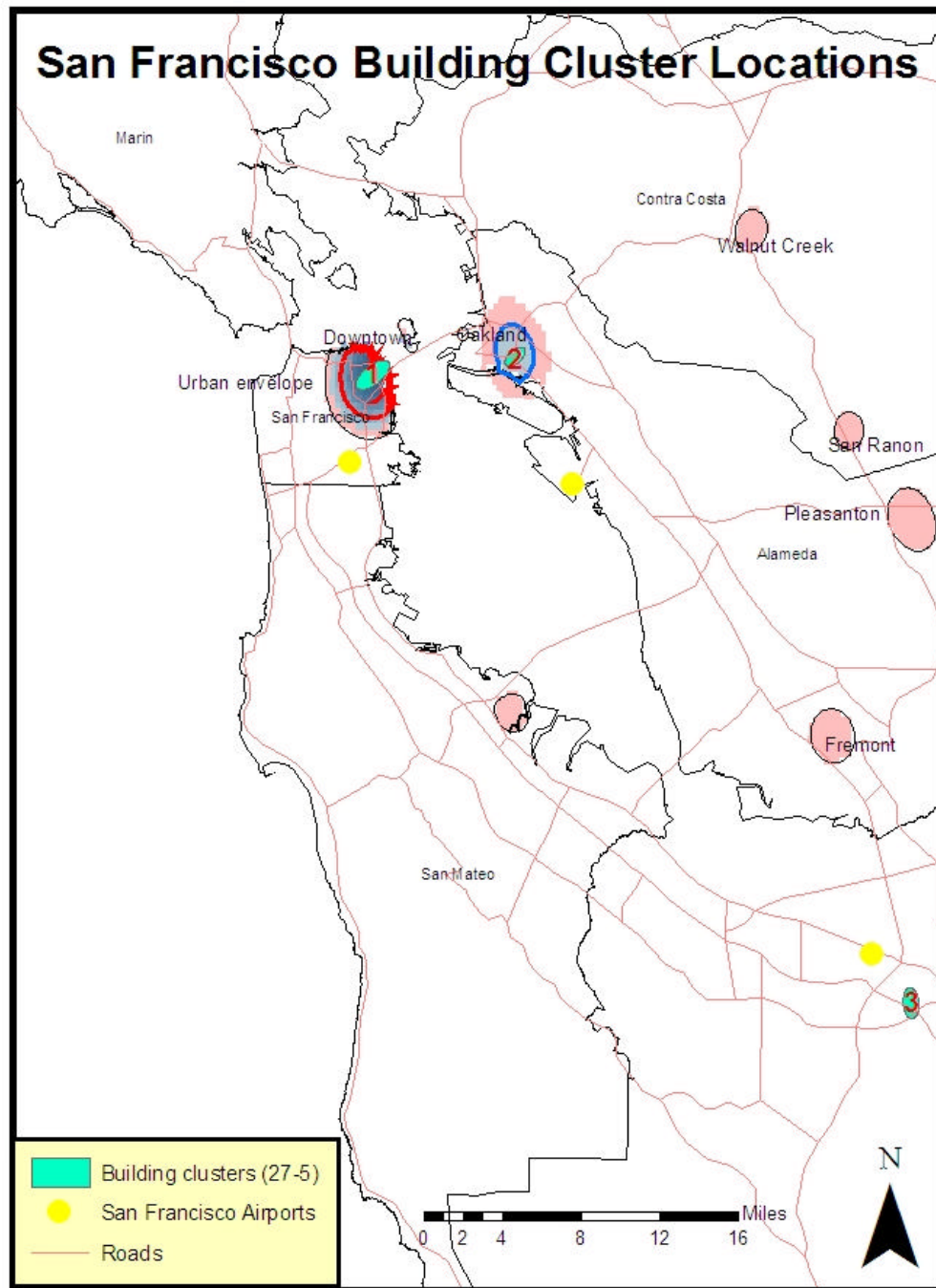
MAP 34A San Francisco APS TNCs



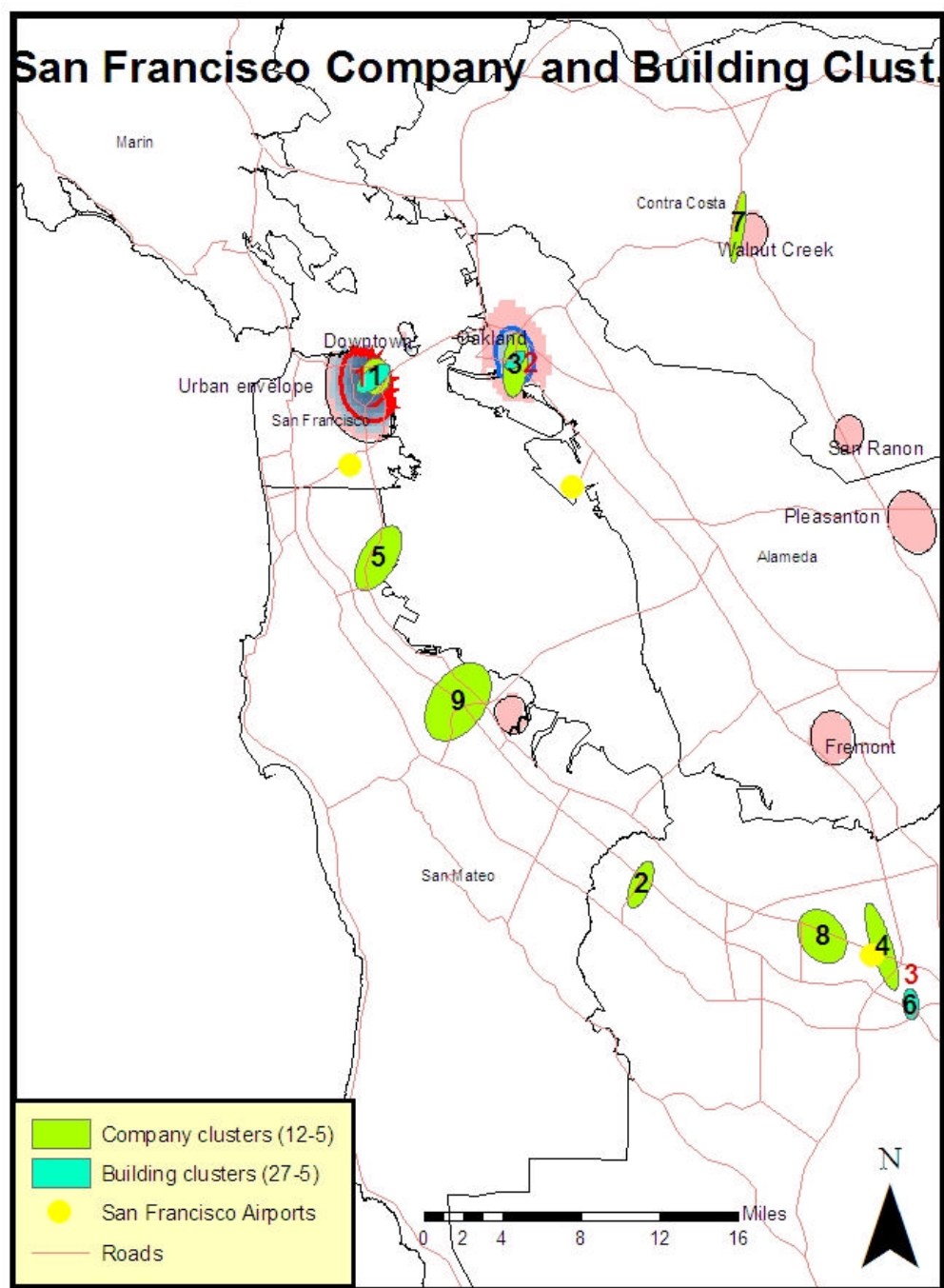
MAP 34B San Francisco APS TNC Clusters



MAP 35A San Francisco Office Buildings

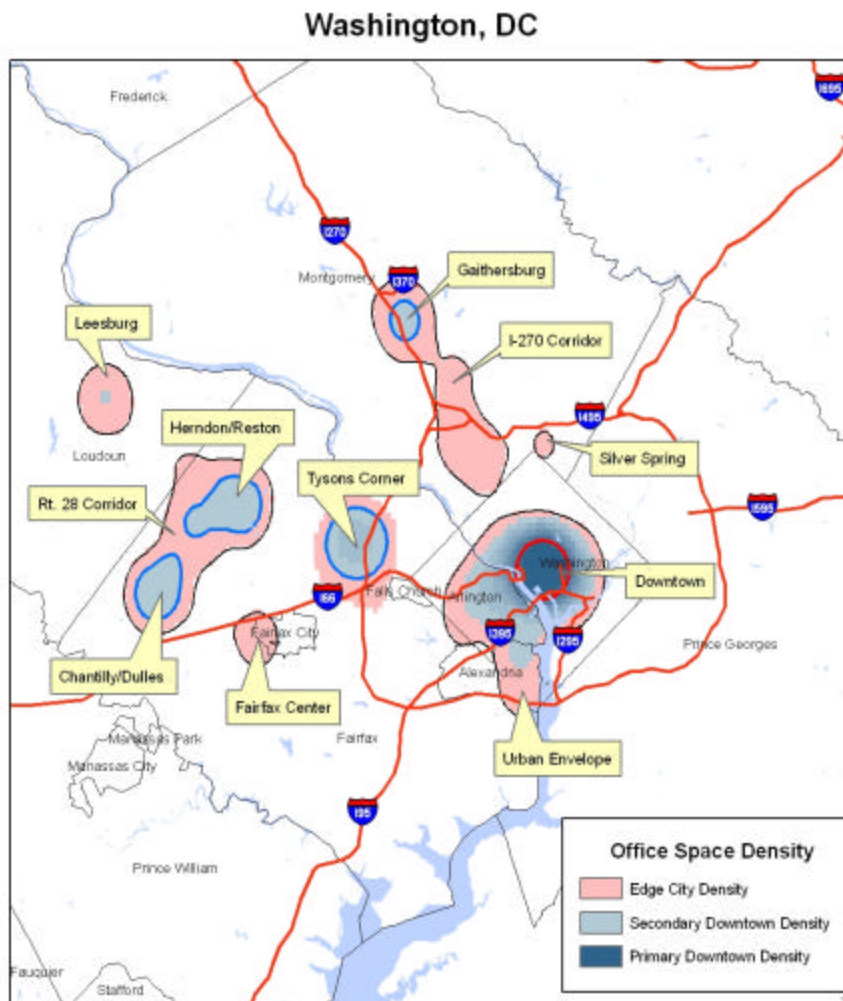


MAP 35B San Francisco Office Building Clusters



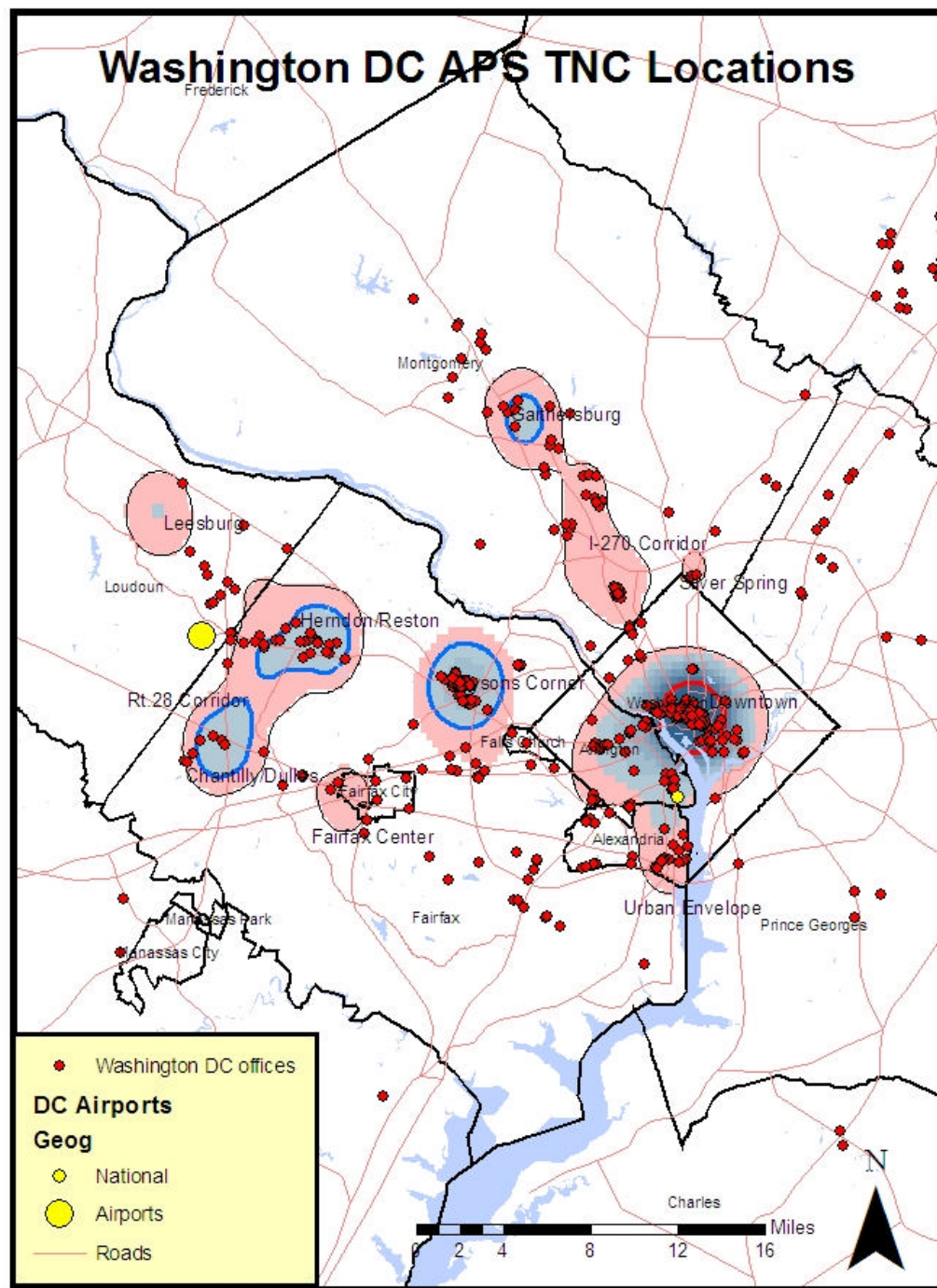
MAP 36 San Francisco Company - Building Clusters

WASHINGTON DC MAPS

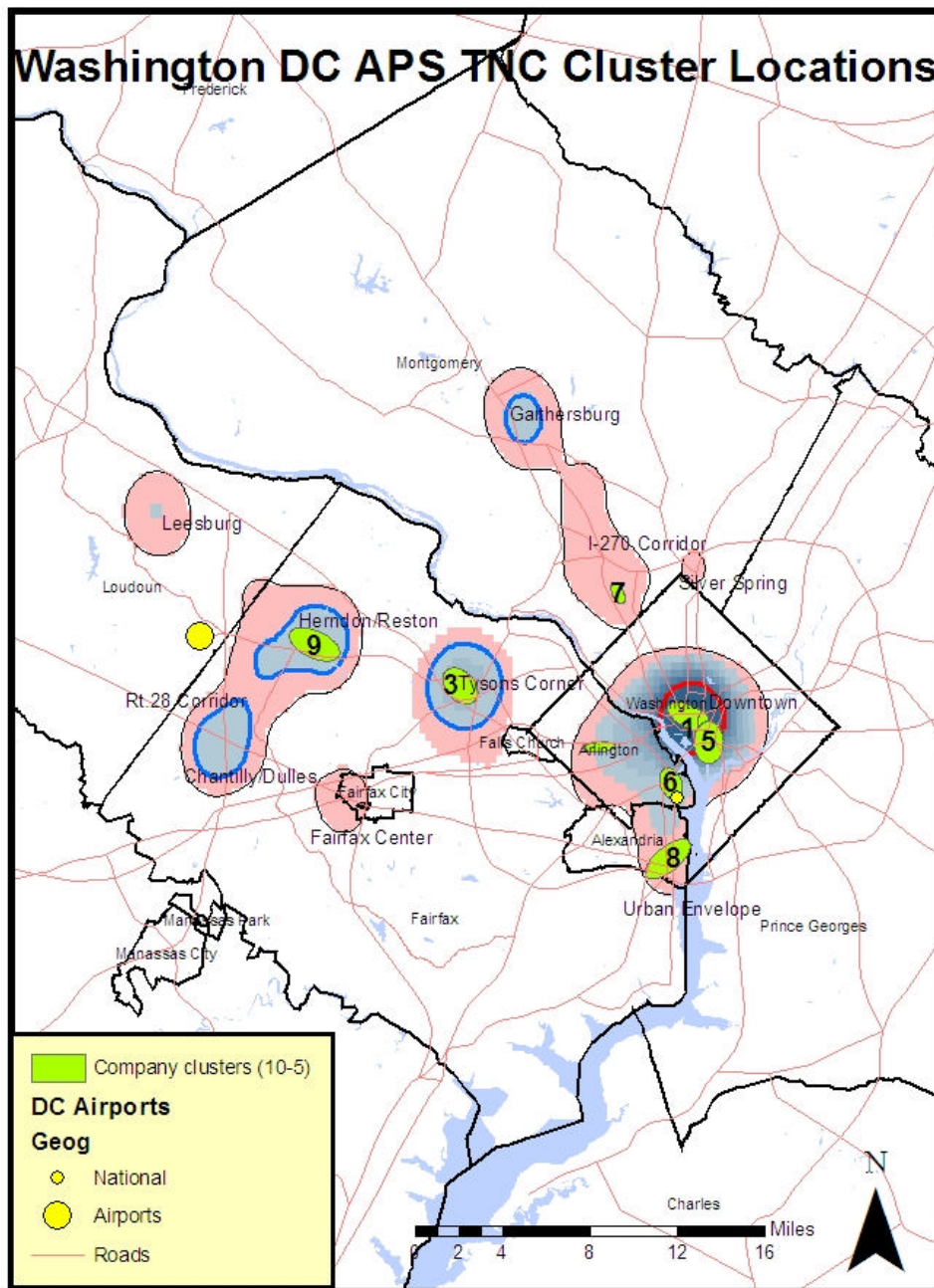


MAP 37 Washington DC¹⁰

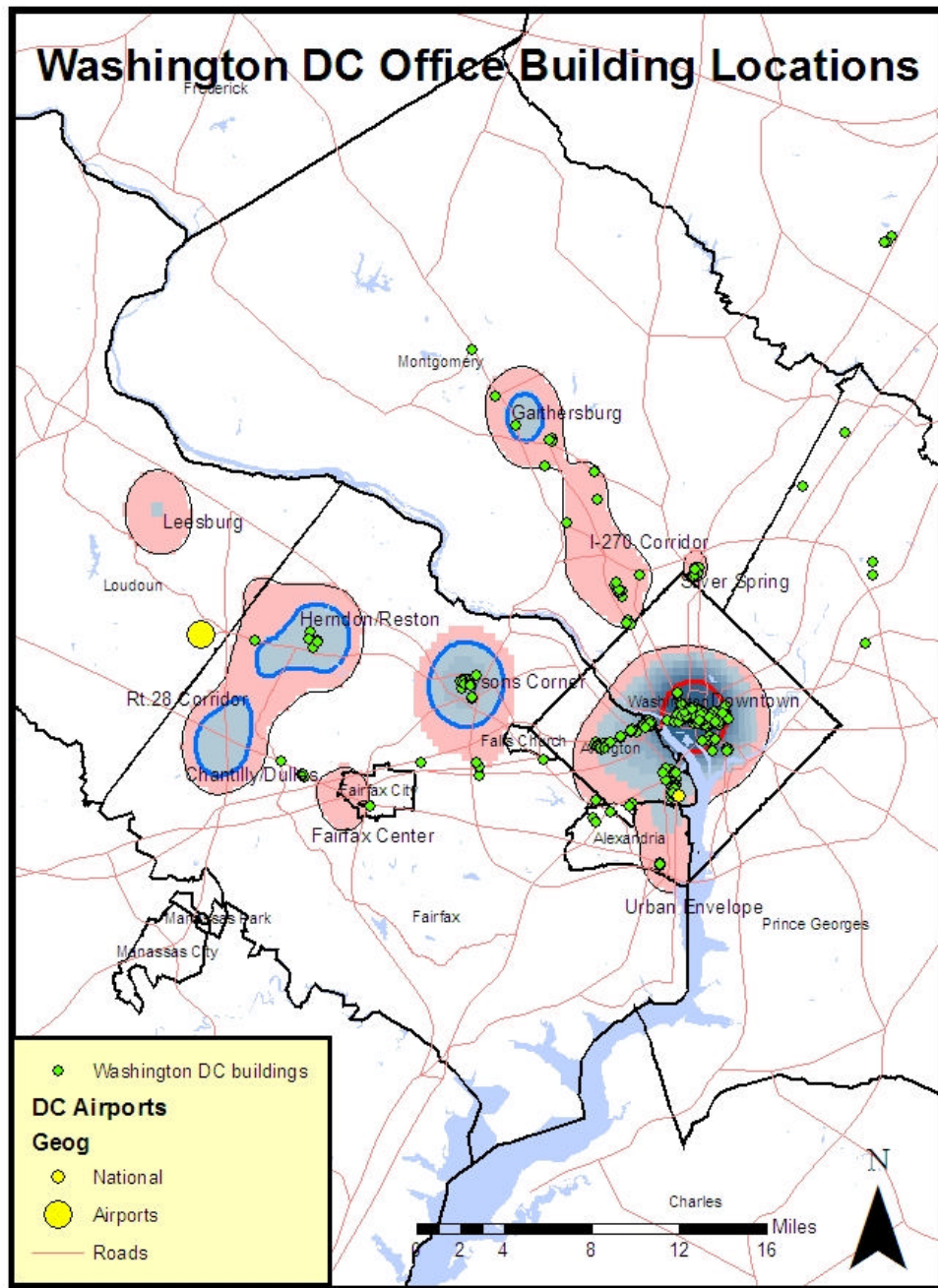
¹⁰ Source: Lang, R. E., Sanchez, T. and Oner, A. C., 2007, Beyond Edgeless Cities: Office Geography in the New Metropolis. *Urban Geography*, Vol. forthcoming



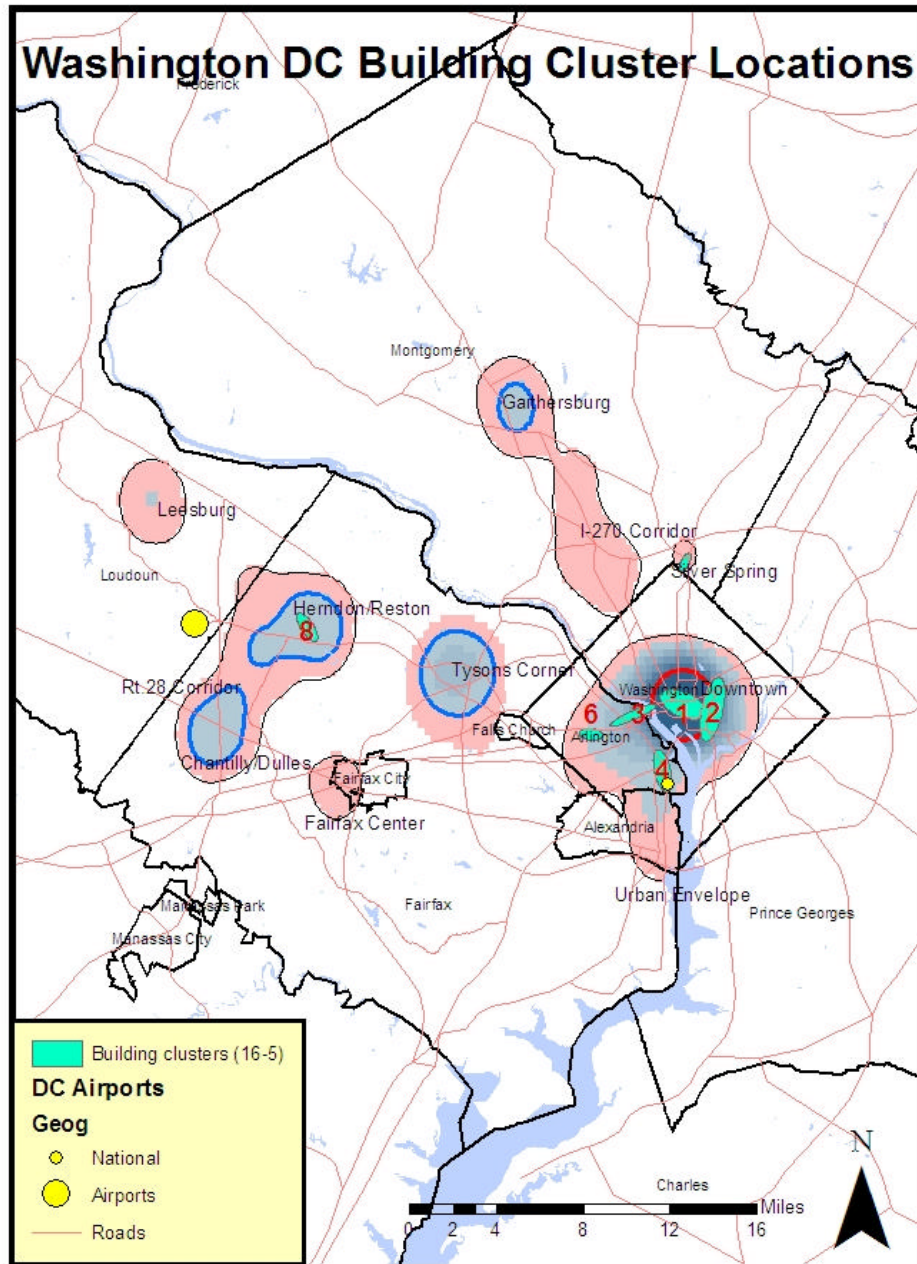
MAP 38A Washington DC APS TNCs



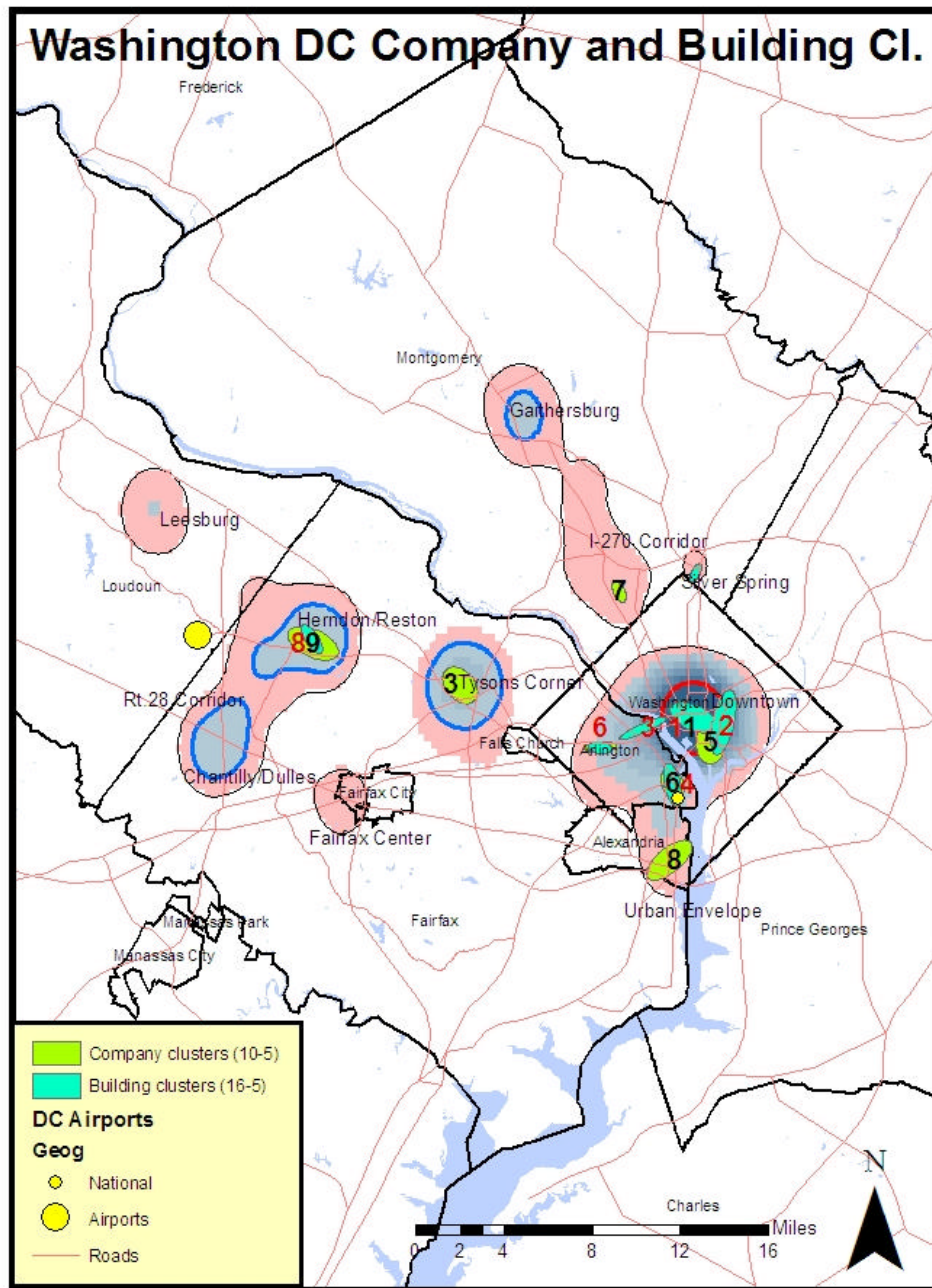
MAP 38B Washington DC APS TNC Clusters



MAP 39A Washington DC Office Buildings



MAP 39B Washington DC Office Building Clusters



MAP 40 Washington DC Company-Building Clusters

APPENDIX C

SECTORAL CLUSTERING PERCENTAGES OF APS TNCs IN DIFFERENT DENSITY AREAS OF THE POLYCENTRIC METROPOLIS

Table C.1: Number of Firms in Different Sectors of the Selected Cities

Cities	Accounting	Advertising and Marketing	Design Consultancy	Finance/Banking	Insurance	IT	Law	Logistics	Management Consultancy	Real Estate	TOTAL	Branch	HQ
Atlanta	24	20	27	26	18	67	5	119	31	48	385	368	17
Boston	19	16	21	33	14	75	9	104	43	42	376	359	17
Chicago	23	35	30	45	35	91	13	144	48	55	519	484	35
Dallas	23	0	38	19	18	62	12	144	31	29	376	364	12
Houston	14	7	42	25	9	46	16	138	27	36	360	351	9
Los Angeles	32	36	46	53	27	97	36	189	47	69	632	614	18
Miami	25	14	29	27	21	35	8	103	25	33	320	304	16
New York	49	65	54	147	72	163	58	243	96	74	1021	864	157
San Francisco	30	32	41	45	28	130	40	126	54	25	551	516	35
Washington DC	38	20	52	29	22	173	57	132	75	28	626	606	20
TOTAL	277	245	380	449	264	939	254	1442	477	439	5166	4830	336

Table C.2: BOSTON Sectoral Clustering Percentages in Different Density Areas

Boston	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	63.16%	0.00%	0.00%	0.00%	0.00%	36.84%	19
Advertising and Marketing	75.00%	0.00%	0.00%	0.00%	0.00%	25.00%	16
Design Consultancy	66.67%	0.00%	0.00%	0.00%	4.76%	28.57%	21
Finance/Banking	81.82%	0.00%	0.00%	0.00%	0.00%	18.18%	33
Insurance	50.00%	0.00%	0.00%	0.00%	14.29%	35.71%	14
IT	24.00%	0.00%	0.00%	9.33%	13.33%	53.33%	75
Law	88.89%	0.00%	0.00%	0.00%	0.00%	11.11%	9
Logistics	24.04%	6.73%	0.00%	0.00%	1.92%	67.31%	104
Management Consultancy	65.12%	0.00%	0.00%	0.00%	0.00%	34.88%	43
Real Estate	42.86%	0.00%	0.00%	0.00%	0.00%	57.14%	42

D=Downtown, UE=Urban Envelope, SD=Secondary Downtown, E=Edge City, Eless=Edgeless City

Table C.3: CHICAGO Sectoral Clustering Percentages in Different Density Areas

Chicago	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	60.87%	0.00%	0.00%	13.04%	0.00%	26.09%	23
Advertising and Marketing	88.57%	0.00%	0.00%	2.86%	0.00%	8.57%	35
Design Consultancy	60.00%	0.00%	0.00%	16.67%	3.33%	20.00%	30
Finance/Banking	73.33%	0.00%	0.00%	8.89%	2.22%	15.56%	45
Insurance	68.57%	0.00%	0.00%	17.14%	2.86%	11.43%	35
IT	32.97%	0.00%	0.00%	27.47%	14.29%	25.27%	91
Law	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13
Logistics	23.61%	4.17%	0.00%	7.64%	11.11%	53.47%	144
Management Consultancy	72.92%	0.00%	0.00%	6.25%	2.08%	18.75%	48
Real Estate	16.36%	1.82%	0.00%	12.73%	0.00%	69.09%	55

Table C.4: NEW YORK Sectoral Clustering Percentages in Different Density Areas

New York	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	57.14%	0.00%	4.08%	6.12%	6.12%	26.53%	49
Advertising and Marketing	76.92%	0.00%	0.00%	4.62%	1.54%	16.92%	65
Design Consultancy	48.15%	0.00%	5.56%	1.85%	5.56%	38.89%	54
Finance/Banking	79.59%	0.00%	3.40%	2.04%	5.44%	9.52%	147
Insurance	62.50%	0.00%	2.78%	1.39%	0.00%	33.33%	72
IT	51.53%	0.00%	3.68%	2.45%	1.84%	40.49%	163
Law	84.48%	0.00%	6.90%	1.72%	3.45%	3.45%	58
Logistics	43.62%	0.00%	2.06%	0.41%	1.23%	52.67%	243
Management Consultancy	57.29%	0.00%	3.13%	2.08%	2.08%	35.42%	96
Real Estate	41.89%	0.00%	1.35%	1.35%	4.05%	51.35%	74

Table C.5: WASHINGTON DC Sectoral Clustering Percentages in Different Density Areas

Washington DC	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	18.42%	5.26%	15.79%	26.32%	0.00%	34.21%	38
Advertising and Marketing	55.00%	0.00%	0.00%	25.00%	0.00%	20.00%	20
Design Consultancy	21.15%	9.62%	5.77%	3.85%	0.00%	59.62%	52
Finance/Banking	51.72%	0.00%	17.24%	17.24%	0.00%	13.79%	29
Insurance	13.64%	0.00%	22.73%	9.09%	0.00%	54.55%	22
IT	12.14%	12.14%	0.00%	11.56%	0.00%	64.16%	173
Law	63.16%	0.00%	7.02%	8.77%	0.00%	21.05%	57
Logistics	17.42%	6.06%	0.76%	3.79%	0.00%	71.97%	132
Management Consultancy	24.00%	9.33%	8.00%	18.67%	0.00%	40.00%	75
Real Estate	14.29%	0.00%	14.29%	25.00%	0.00%	46.43%	28

D=Downtown, UE=Urban Envelope, SD=Secondary Downtown, E=Edge City, Eless=Edgeless City

Table C.6: ATLANTA Sectoral Clustering Percentages in Different Density Areas

Atlanta	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	41.67%	29.17%	0.00%	4.17%	0.00%	25.00%	24
Advertising and Marketing	25.00%	45.00%	0.00%	0.00%	10.00%	20.00%	20
Design Consultancy	11.11%	33.33%	0.00%	0.00%	3.70%	51.85%	27
Finance/Banking	26.92%	53.85%	0.00%	0.00%	3.85%	15.38%	26
Insurance	0.00%	61.11%	0.00%	11.11%	5.56%	22.22%	18
IT	1.49%	28.36%	0.00%	14.93%	16.42%	38.81%	67
Law	0.00%	80.00%	0.00%	0.00%	0.00%	20.00%	5
Logistics	3.36%	5.88%	0.00%	4.20%	2.52%	84.03%	119
Management Consultancy	35.48%	58.06%	0.00%	3.23%	0.00%	3.23%	31
Real Estate	4.17%	14.58%	0.00%	0.00%	4.17%	77.08%	48

Table C.7: DALLAS Sectoral Clustering Percentages in Different Density Areas

Dallas	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	34.78%	0.00%	30.43%	21.74%	0.00%	13.04%	23
Advertising and Marketing	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0
Design Consultancy	28.95%	0.00%	5.26%	18.42%	0.00%	47.37%	38
Finance/Banking	42.11%	0.00%	5.26%	26.32%	15.79%	10.53%	19
Insurance	44.44%	0.00%	5.56%	22.22%	0.00%	27.78%	18
IT	6.45%	0.00%	1.61%	37.10%	11.29%	43.55%	62
Law	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12
Logistics	4.86%	0.00%	0.00%	9.03%	6.94%	79.17%	144
Management Consultancy	38.71%	0.00%	6.45%	38.71%	0.00%	16.13%	31
Real Estate	6.90%	0.00%	3.45%	13.79%	0.00%	75.86%	29

Table C.8: HOUSTON Sectoral Clustering Percentages in Different Density Areas

Houston	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	57.14%	0.00%	0.00%	42.86%	0.00%	0.00%	14
Advertising and Marketing	42.86%	0.00%	0.00%	14.29%	14.29%	28.57%	7
Design Consultancy	4.76%	0.00%	0.00%	28.57%	2.38%	64.29%	42
Finance/Banking	48.00%	0.00%	0.00%	36.00%	0.00%	16.00%	25
Insurance	22.22%	0.00%	0.00%	44.44%	33.33%	0.00%	9
IT	10.87%	0.00%	0.00%	32.61%	2.17%	54.35%	46
Law	93.75%	0.00%	0.00%	6.25%	0.00%	0.00%	16
Logistics	3.62%	0.00%	0.00%	10.87%	7.25%	78.26%	138
Management Consultancy	62.96%	0.00%	0.00%	14.81%	0.00%	22.22%	27
Real Estate	8.33%	0.00%	0.00%	19.44%	0.00%	72.22%	36

D=Downtown, UE=Urban Envelope, SD=Secondary Downtown, E=Edge City, Eless=Edgeless City

Table C.9: LOS ANGELES Sectoral Clustering Percentages in Different Density Areas

Los Angeles	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	21.88%	0.00%	18.75%	31.25	3.13	25.00	32
Advertising and Marketing	11.11%	0.00%	2.78%	11.11	13.89	61.11	36
Design Consultancy	19.57%	0.00%	10.87%	10.87	6.52	52.17	46
Finance/Banking	33.96%	0.00%	30.19%	5.66	1.89	28.30	53
Insurance	33.33%	0.00%	7.41%	18.52	0.00	40.74	27
IT	3.09%	0.00%	4.12%	36.08	6.19	50.52	97
Law	58.33%	0.00%	13.89%	16.67	2.78	8.33	36
Logistics	5.82%	0.00%	5.29	1.59	2.12	85.19	189
Management Consultancy	29.79%	0.00%	19.15	23.40	0.00	27.66	47
Real Estate	4.35%	0.00%	14.49	1.45	1.45	78.26	69

Table C.10: MIAMI Sectoral Clustering Percentages in Different Density Areas

Los Angeles	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	21.88%	0.00%	18.75%	31.25%	3.13%	25.00%	32
Advertising and Marketing	11.11%	0.00%	2.78%	11.11%	13.89%	61.11%	36
Design Consultancy	19.57%	0.00%	10.87%	10.87%	6.52%	52.17%	46
Finance/Banking	33.96%	0.00%	30.19%	5.66%	1.89%	28.30%	53
Insurance	33.33%	0.00%	7.41%	18.52%	0.00%	40.74%	27
IT	3.09%	0.00%	4.12%	36.08%	6.19%	50.52%	97
Law	58.33%	0.00%	13.89%	16.67%	2.78%	8.33%	36
Logistics	5.82%	0.00%	5.29%	1.59%	2.12%	85.19%	189
Management Consultancy	29.79%	0.00%	19.15%	23.40%	0.00%	27.66%	47
Real Estate	4.35%	0.00%	14.49%	1.45%	1.45%	78.26%	69

Table C.11: SAN FRANCISCO Sectoral Clustering Percentages in Different Density Areas

San Francisco	D	UE	SD	E	Eless	Non-clustered	# of companies
Accounting	46.67%	0.00%	33.33%	0.00%	0.00%	6.67%	30
Advertising and Marketing	68.75%	0.00%	0.00%	0.00%	6.25%	25.00%	32
Design Consultancy	43.90%	0.00%	26.83%	12.20%	2.44%	14.63%	41
Finance/Banking	55.56%	0.00%	2.22%	8.89%	4.44%	28.89%	45
Insurance	50.00%	0.00%	7.14%	25.00%	7.14%	10.71%	28
IT	18.46%	0.00%	6.15%	20.77%	9.23%	45.38%	130
Law	47.50%	0.00%	2.50%	0.00%	27.50%	22.50%	40
Logistics	20.63%	0.00%	4.76%	0.79%	12.70%	61.11%	126
Management Consultancy	51.85%	0.00%	5.56%	11.11%	11.11%	20.37%	54
Real Estate	20.00%	0.00%	8.00%	4.00%	4.00%	64.00%	25

D=Downtown, UE=Urban Envelope, SD=Secondary Downtown, E=Edge City, Eless=Edgeless City

APPENDIX D

CLUSTERING PERCENTAGES OF HIGH-RISE OFFICE BUILDINGS IN DIFFERENT DENSITY AREAS ACCORDING TO BUILDING TIME INTERVALS

Former Manufacturing Belt Cities:

Table D.1: BOSTON Building Clustering Percentages in Different Density Areas

Boston	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
Pre 1970	92.86%	0.00%	0.00%	0.00%	3.57%	3.57%	56	41.18%
1970-1980	72.73%	0.00%	0.00%	0.00%	5.36%	13.64%	22	16.18%
1980-1990	93.75%	0.00%	0.00%	0.00%	0.00%	6.25%	32	23.53%
1990-2000	90.00%	0.00%	0.00%	0.00%	0.00%	10.00%	10	7.35%
2000-2010	87.50%	0.00%	0.00%	0.00%	0.00%	12.50%	16	11.76%

Table D.2: CHICAGO Building Clustering Percentages in Different Density Areas

Chicago	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
Pre 1970	92.97%	0.00%	0.00%	0.00%	0.00%	7.03%	128	46.21%
1970-1980	75.00%	0.00%	0.00%	0.00%	0.00%	25.00%	36	13.00%
1980-1990	69.49%	0.00%	0.00%	0.00%	8.47%	22.03%	59	21.30%
1990-2000	86.36%	0.00%	0.00%	0.00%	0.00%	13.64%	22	7.94%
2000-2010	96.88%	0.00%	0.00%	0.00%	0.00%	3.13%	32	11.55%

Table D.3: NEW YORK Building Clustering Percentages in Different Density Areas

New York	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
Pre 1970	86.14%	0.00%	5.10%	0.20%	0.00%	8.56%	981	74.94%
1970-1980	70.11%	0.00%	8.05%	5.75%	3.45%	12.64%	87	6.65%
1980-1990	66.14%	0.00%	8.66%	3.94%	4.72%	16.54%	127	9.70%
1990-2000	61.54%	0.00%	15.38%	0.00%	7.69%	15.38%	39	2.98%
2000-2010	33.33%	0.00%	26.67%	1.33%	5.33%	33.33%	75	5.73%

Table D.4: WASHINGTON DC Building Clustering Percentages in Different Density Areas

Washington DC	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
Pre 1970	44.13%	30.73%	18.99%	0.00%	0.00%	6.15%	179	25.46%
1970-1980	35.53%	39.47%	9.21%	0.00%	0.00%	15.79%	76	10.81%
1980-1990	40.48%	39.05%	3.33%	0.48%	0.00%	16.67%	210	29.87%
1990-2000	50.94%	16.98%	9.43%	11.32%	0.00%	11.32%	106	15.08%
2000-2010	45.45%	15.15%	5.30%	3.03%	0.00%	31.06%	132	18.78%

D=Downtown, UE=Urban Envelope, SD=Secondary Downtown, E=Edge City, Eless=Edgeless City

Sunbelt Cities:

Table D.5: ATLANTA Building Clustering Percentages in Different Density Areas

Atlanta	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
pre 1970	86.36%	4.55%	0.00%	0.00%	0.00%	9.09%	22	13.58%
1970-1980	83.33%	8.33%	0.00%	0.00%	0.00%	8.33%	12	7.41%
1980-1990	41.03%	30.77%	0.00%	15.38%	0.00%	12.82%	39	24.07%
1990-2000	22.22%	29.63%	0.00%	14.81%	0.00%	33.33%	27	16.67%
2000-2010	32.26%	32.26%	0.00%	8.06%	0.00%	27.42%	62	38.27%

Table D.6: DALLAS Building Clustering Percentages in Different Density Areas

Dallas	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
pre 1970	46.51%	0.00%	30.23%	0.00%	0.00%	23.26%	43	20.19%
1970-1980	24.00%	0.00%	8.00%	28.00%	0.00%	40.00%	25	11.74%
1980-1990	25.23%	0.00%	2.80%	38.32%	0.00%	31.78%	107	50.23%
1990-2000	25.00%	0.00%	0.00%	50.00%	0.00%	25.00%	16	7.51%
2000-2010	31.82%	0.00%	9.09%	50.00%	0.00%	9.09%	22	10.33%

Table D.7: HOUSTON Building Clustering Percentages in Different Density Areas

Houston	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
pre 1970	76.92%	0.00%	0.00%	12.82%	0.00%	10.26%	39	18.84%
1970-1980	35.00%	0.00%	0.00%	50.00%	0.00%	15.00%	40	19.32%
1980-1990	18.09%	0.00%	0.00%	55.32%	5.32%	21.28%	94	45.41%
1990-2000	22.22%	0.00%	0.00%	44.44%	11.11%	22.22%	9	4.35%
2000-2010	28.00%	0.00%	0.00%	36.00%	12.00%	24.00%	25	12.08%

Table D.8: LOS ANGELES Building Clustering Percentages in Different Density Areas

Los Angeles	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
pre 1970	52.78%	0.00%	15.28%	4.17%	3.47%	24.31%	144	37.50%
1970-1980	15.15%	0.00%	30.30%	6.06%	3.03%	45.45%	66	17.19%
1980-1990	17.92%	0.00%	18.87%	4.55%	4.72%	55.66%	106	27.60%
1990-2000	26.32%	0.00%	15.79%	23.68%	2.63%	31.58%	38	9.90%
2000-2010	3.33%	0.00%	6.67%	26.67%	3.33%	60.00%	30	7.81%

D=Downtown, UE=Urban Envelope, SD=Secondary Downtown, E=Edge City, Eless=Edgeless City

Table D.9: MIAMI Building Clustering Percentages in Different Density Areas

Miami	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
pre 1970	73.91%	0.00%	0.00%	8.70%	0.00%	17.39%	23	17.97%
1970-1980	41.67%	0.00%	8.33%	41.67%	0.00%	8.33%	12	9.38%
1980-1990	40.91%	0.00%	11.36%	27.27%	0.00%	20.45%	44	34.38%
1990-2000	0.00%	0.00%	26.32%	42.11%	0.00%	31.58%	19	14.84%
2000-2010	36.67%	0.00%	13.33%	13.33%	0.00%	36.67%	30	23.44%

Table D.10: SAN FRANCISCO Building Clustering Percentages in Different Density Areas

San Francisco	D	UE	SD	E	Eless	Non-clustered	# of buildings	% of total
pre 1970	77.50%	0.00%	13.33%	0.00%	4.17%	5.00%	120	43.17%
1970-1980	65.00%	0.00%	7.50%	0.00%	12.50%	15.00%	40	14.39%
1980-1990	63.08%	0.00%	9.23%	0.00%	13.85%	13.85%	65	23.38%
1990-2000	36.84%	0.00%	42.11%	0.00%	15.79%	5.26%	19	6.83%
2000-2010	38.24%	0.00%	17.65%	0.00%	17.65%	26.47%	34	12.23%

D=Downtown, UE=Urban Envelope, SD=Secondary Downtown, E=Edge City, Eless=Edgeless City