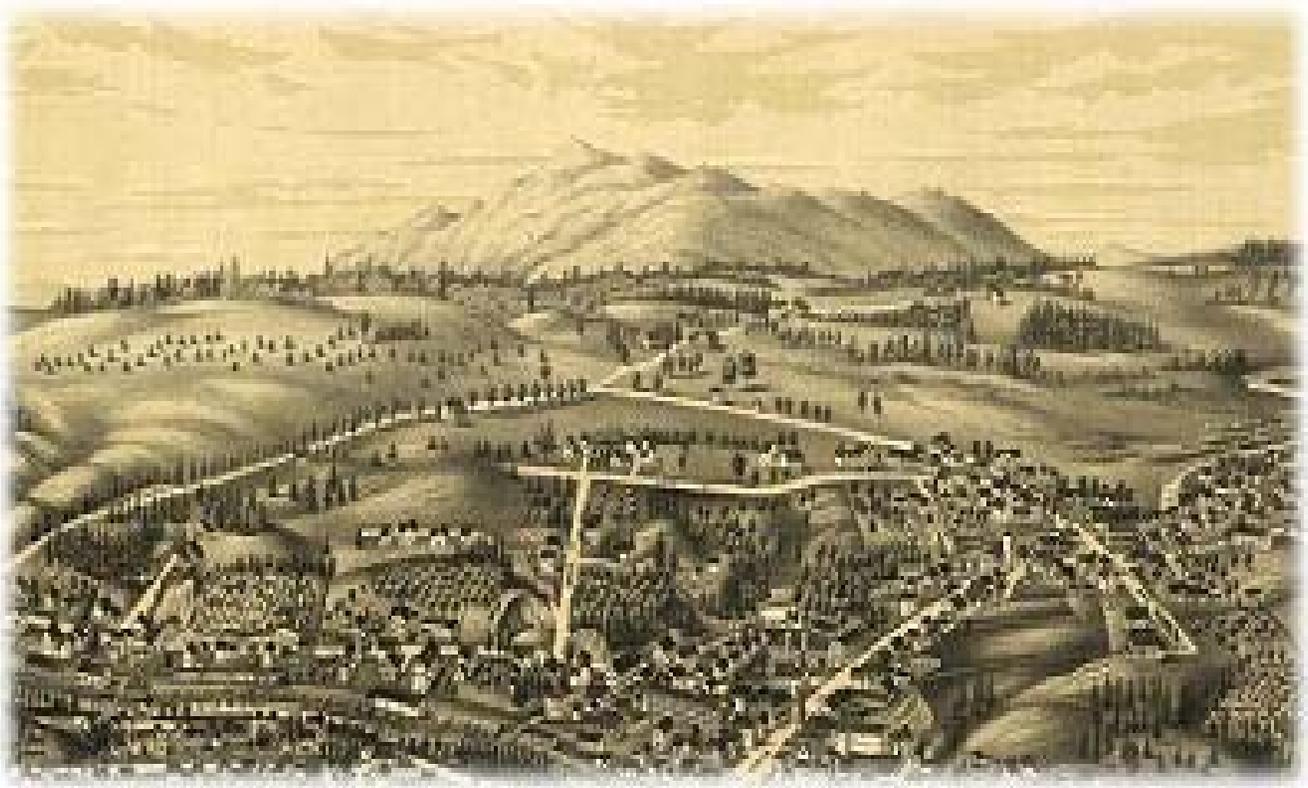


Master Plan



Peterborough,
New Hampshire

Appendices

Appendices

Chapter 1: Economic Vitality

- “Economic Impact Analysis: A Case Study; Local Merchants vs. Chain Retailers”
- Yellow Pages Directory of Businesses: 1985 & 2003
- “Commercial Development and Its Effect on the Tax Rate”

Chapter 4: Open Space

- “The Economic Impact of Open Space in New Hampshire”
- Cost of Community Services Study, Peterborough 1996-97
- Conservation Lands in Peterborough
- Open Space Questionnaire
- Links to References for Open Space Chapter

Chapter 6: Traffic & Transportation

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- Access Management Techniques
- NH DOT Suggested Minimum Design Standards for Rural Subdivision Streets
- Summary of Various Traffic and Transportation Studies for Peterborough
- Links to Traffic and Transportation Information

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- Comprehensive Smart Growth Audit Checklist
- 2003 Master Plan Survey Results

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- Relationship of the State Statutes to the Peterborough Master Plan
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- Funding Sources for Historic Preservation

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- Monadnock Region Arts and Economic Prosperity (Full Report)
- Art-Speak/Portsmouth, NH

Chapter 1: Economic Vitality

- “Economic Impact Analysis: A Case Study; Local Merchants vs. Chain Retailers”
- Yellow Pages Directory of Businesses: 1985 & 2003
- “Commercial Development and Its Effect on the Tax Rate”

Economic Impact Analysis: A Case Study

Local Merchants
vs.
Chain Retailers

EXECUTIVE SUMMARY

Prepared for

liveablecity

&



by

CIVIC **ECONOMICS**

CREATIVITY · OPPORTUNITY · PROSPERITY

December 2002

EXECUTIVE SUMMARY - ECONOMIC IMPACT ANALYSIS

Local Merchants vs. Chain Retailers

EXECUTIVE SUMMARY

Civic Economics (CivEc) is pleased to present this Economic Impact Analysis assessing the economic activity generated by local merchants relative to a chain merchant carrying comparable lines of goods. Economic impact, for the purposes of this case study, is based on locally focused expenditures of the merchants, including such items as labor, profits, goods, and services.

The Context

American communities from coast to coast have wrestled with the implications of national chain retail. Despite national interest, however, CivEc has identified a near absence of objective, fact-based analysis of the phenomenon. This report is designed to enhance the discussion by providing a credible and quantifiable analysis.

The area of Sixth Street and Lamar Boulevard in central Austin provides an outstanding opportunity to study the dynamics of retail competition. The following analyses are put forth as a case study of the interaction among co-locating chain and local merchants in similar lines of goods.

Schlosser Development Corp. presently controls the two blocks between Fifth and Sixth to the east of Lamar as well as the previously developed block to the south, containing Office Max, Starbucks, and an AT&T Phone Store.

Under the present proposal, the offices and flagship store of Whole Foods Market will occupy the prime block of the Schlosser site. Schlosser proposes to anchor the eastern block with a Borders Books & Music store. Should the development proceed as presently structured, Schlosser will additionally take on leasing responsibilities at the present Whole Foods and BookPeople complex.

According to published sources, the combined Schlosser properties have been granted incentives with a total value of over \$2.1 Million. These include fee waivers, water and wastewater infrastructure reimbursements, drainage improvements, and a temporary use of right-of-way fee waiver. The projects have thus far received approximately \$710,000 of these incentives. Additionally, the developers have entered into an agreement with Austin Energy for the provision of a chilled water facility valued at approximately \$3.5 Million.

EXECUTIVE SUMMARY - ECONOMIC IMPACT ANALYSIS

Local Merchants vs. Chain Retailers

PRINCIPAL FINDINGS: THREE ESSENTIAL FACTS

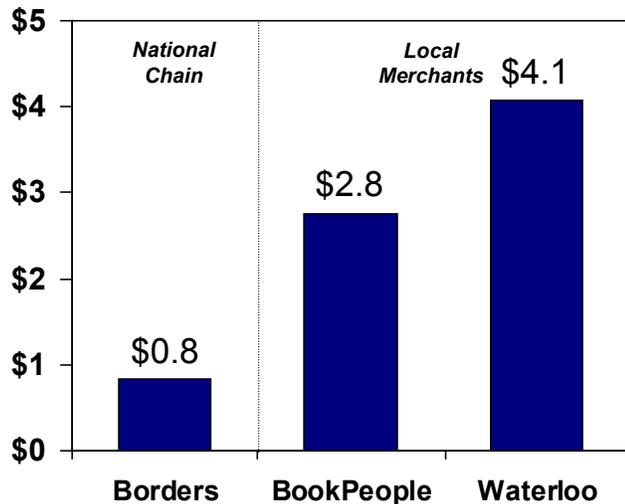
FACT: Local merchants generate substantially greater economic impact than chain retailers.

CivEc initially compared the local economic impact of three freestanding stores, a typical Borders, and the existing and known quantities of BookPeople and Waterloo.

Three distinctions account for the dramatic difference seen in the chart at right:

1. Local merchants spend a much larger portion of total revenue on local labor to run the enterprise and sell the merchandise.
2. Local merchants keep their modest profits in the local economy.
3. Local merchants provide strong support for local artists and authors, creating further local economic impact.

Annual Economic Impact per Store
(millions in 2002)



FACT: Development of urban sites with directly competitive chain merchants will reduce the overall vigor of the local economy.

Development of a Borders store at Sixth and Lamar will reduce the vigor of the Austin economy. In this analysis, CivEc reviewed three scenarios to account for the range of impacts possible. In all three, Borders triggers a decline in local economic activity despite increasing total sales of books and music at the corner.

Competitive Effects:
Borders Impact over Five Years
Total book and music sales **increase**
Economic returns **decrease**

CivEc puts forth two alternative outcomes in which the neighborhood and the Austin economy will be enhanced:

1. New merchants bring a new line of goods to the market, attracting additional consumer traffic to the area to the benefit of neighboring merchants. For example, former plans called for a cinema at the site. This would have offered a product previously unavailable at Sixth and Lamar, drawing additional prospective customers for all neighboring merchants.

EXECUTIVE SUMMARY - ECONOMIC IMPACT ANALYSIS

Local Merchants vs. Chain Retailers

2. New merchants bring a complementary line of goods to the market, leading to increased browsing among merchants with similar but unique lines of goods. For example, there exists in the neighborhood a cluster of antiques and home goods shops. Shoppers for these goods are induced to visit several merchants, as unique yet related items are offered in each shop.

As presently configured, the City of Austin is asked to subsidize a development that actually does damage to the local economy.

FACT: Modest changes in consumer spending habits can generate substantial local economic impact.

For every \$100 in consumer spending at Borders, the total local economic impact is only \$13. The same amount spent with a local merchant yields more than three times the local economic impact.

If each household in Travis County simply redirected just \$100 of planned holiday spending from chain stores to locally owned merchants, the local economic impact would reach approximately \$10 Million.



EXECUTIVE SUMMARY - ECONOMIC IMPACT ANALYSIS

Local Merchants vs. Chain Retailers

ABOUT THE PROJECT PARTICIPANTS

LiveableCity Austin is an inclusive network of individuals working together to create a community consensus to promote policies that address the long term social, environmental and economic needs of the people of Austin.



Civic Economics (CivEc) is an economic analysis and strategic planning consultancy with offices in Austin and Chicago.

BookPeople and Waterloo Records and Video provided additional funding and research support for this study with support from the Austin Independent Business Alliance.

For further information about the project participants or this Economic Impact Assessment, please contact:

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www.LiveableCity.org

YELLOW PAGES DIRECTORY

<u>1985-1986</u>	<u>2003</u>
	20 Grove St. Partners LLC
	21 Grove St., LLC
	A&B video
A&P	
	Above & Beyond- Human Resources tng.
	Abracadabra Family Learning Ctr.
ACO Leasing Co.	
Across The Board Graphics	
	Acupuncture & Asian Medicine of Peterborough
	Advanstar Communications
	Aesop's Table-restaurant
	Agway Lawn and Garden
Alan Melad Design Assoc-interior dec. (AMDA)	
Alcor Office Supplies	
Alling & Cory - pappering	
	Alrox LLC
Amanda's - Bridal etc.	
American National Insurance	
American Power Conversion	
	America's Mattress
Ames Dept. Store	
Amherst Systems, Inc.	
	Animal Care Clinic-JONES, MARTHA TRUSTEE
Annie's Book Shop	Annie's Book Shop
	Antique shop- Sam Hackler
Antiques at Peteridge	
	Appropriate Solutions, Inc.- Cote,Raymond
	Apt/Office- Moberg, Carl R.
	Aqua Bistro-Peterborough Depot Sq., LTD
Area Property Protection	
Arnold, J - lawyer	
Art Basics	
	Artisan's Nosh-gift shop
	Asthma and Allergy Care
	At Web Site Publicity Inc-mkt. Consult.
	At Wits' End-greeting cards
	Atkins Law Offices PC-lawyers
	Aubuchon Hardware
Audio Amateur Corp	Audio Amateur Corp
	Austrian Riding Club- Salburg Inn

YELLOW PAGES DIRECTORY

Bates, Richard PA-tax returns	Bates, Richard PA-tax returns
	Battle Road Press- puzzles
	Baum D H Associates-mgt. Consult.
Baybutt Const.	
	Bean, Wiliam A. Jr.- surveyor
Bean, William - Forester	
Beck Mfg.	
Beer Store, The	
Bellettes Inc True Value Bldg Supplies	Bellettes Inc True Value Bldg Supplies
Bellows-Nichols Agency	Bellows-Nichols Agency
Benoit Chiro...	
Bern HK & Assoc.	
Bill's Barber Shop	
Birch Circle Traveling Camp	
Bishops E A Co., Inc.- realtor	Bishops E A Co., Inc.- realtor
BIZ-BIZ Magazine	
	Black Swan- Voss, Gary
Blodgett Makechnie & Vetne	Blodgett Makechnie & Vetne
Blogett - lawyer	
Bloomin Bee, The	
Boiler house, The	
	Bourdeau Physical Therapy Associations
	Boutwell, garage
Bowling Acres	Bowling Acres
Bowling Acres Sandwich Shoppe	
Boxer, Dr.	Boxer, Dr.
	Bradley Jackson Excavating Contractor
	Brady's Bar & Grill
Brick Mills Studios	
Brighton & Runyon PA- lawyers	
Brighton, KA - lawyer	
Brighton, KC - lawyer	
	Broad Oak Tree & Shrub Care
Brodkin, Dr.	
	Brooks Pharmacy
Brookstone	
Brother's Supermarket	
Brown Way - Peterborough, Inc.	
Brown, Glen - septic pumping	Brown Glenn -plumbing
Brum's Scale Models	
	BTCF LLC Future Diesel Mill

YELLOW PAGES DIRECTORY

Campbell Communications	
	Campbell, Laura A. Design Associates.
	Cappy's Peggy Medical Hypnotherapy Office
	Caradonna Dawn E-lawyer
	Carroll Concrete Co.
	Cauthorne Cathrine G-Psychologist
	Cemetary- Northgate
	Center
	Century 21/Thacksten Co.
	CERRONI, PETER M
CFH Assoc.	
Chapman Appraisal Co.	
Charlie's Home Center	
	Charter Trust Co-investment advisors
	Christian book
	Church & Offices -Congregational
	CIM Industries
	Cleveland Health & Fitness
Clothes Closet, Inc. The	
	Cobblestone Pub.
Cobbs, The Antiques	Cobbs, The Antiques
	Cognitra.com-mgt. consultants
Colonial Mortgage, Inc.	
	Colonial Moving & Storage
	Comm. Rental -Chas. Cobb
Common The Retreat house	
Community Sanitation Ser.	
	Compuare, Inc.-computer support
Computer Electronic News	
Conecticut Mutual Life Insur.	
Conelec Corp. - Elec. equip	
	Connell Communications, Inc.
	Conrad Ira L- lawyer
Control Design Corp.	Control Design Corp. - Billard Equip. &Supp.
	Cook's Complements -kitchen accessories
	Copies & More-shipping services
Cornerstone Real Estate	
Counseling Center of S NH	
Country Garden	
Countrywide Plumbing & Heating	

YELLOW PAGES DIRECTORY

Custom Mailing Services	
	Cutter Construction Inc.
	Cutter Construction Inc.
	Cutter Construction, Inc.
CW Communications	
	Dahle USA-Paper shredding mach.
	Darrow Louise Child Adolescents & Family
	DeBonis Gerald M
	Debonis, Theodore
Depot Sharpening Ser.	
Depres and Assoc.	
Derby's - Depot Traders	
	Designs Online website design
	Despres Edw L Insurance & Financial Services
	Discovery toys
	Dodds, Wayne
	Dolan, Edna
Donovan, Francis - life insur.	
Dr. Benson's horse Pharm.	
	Dr. Khow- Wilson, Robert O.
	DRT Mastering- recording services
	Dufresne, Karen Shea-Psychotherapists
Duhaime Appliance Center	
Duhaime Robt. B Prof Assoc., Dentists	
Duncan Direct Mail	Duncan Direct Mail
	Dunkin Donuts
Dyer's Drugs	
	East Mountain Tree Co-landscapers
	Eastern Mountain Sports
	Eclectic Bicycle- Crews, Mathew
	Edward Depres Insurance & Fin. Serv.
	Edward Jones- investment serv.
Elite Laundry	
	Ellerkamp W G Inc-Packaging Mat.
Ellwood, CR - Appraiser	
Elm St. Mini Mart	
Eneguess Advt.	
Eneguess, Daniel F. Assoc. - mod. homes	
English Gallery	
	Enterprise Car Rental
	Episcopal Church
	FDA Meiselle Group, TFCO LLC

YELLOW PAGES DIRECTORY

	Fezette Trust
	Fletcher & Wilder(media buying) -Cornell, Eliz.
Folkway, The	
	Forssell Peter
	FORSSELL, PETER L
Four Star Catering	
	Framing Studio
Franklin, H - lawyer	
	Friend of a Gardener-garden furnishings
Idlenot Farm Rest.- now Friendly's	Friendly's
Fry Shoppe	
	Garage - Sage, Taylor
	Gas Station- Rymes, James T.
	Gas station-Cumberland Farms
	Gates Mfg.- Tilsno Capital Mgt. Group
Gearhart Microcomputer Syst.	
Gebhardt & Garland - decorators	
General Business Services	General Business Services
	Gentleman's Choice-barber
Giuseppe's Lunch & Lounge	
Golden Gate Nursery	
Gollan Comp. Inc.	
	Goodeve, Barton D. -tax consultant
	Gordon Michael -Optometrist
	Grace & Flavor -gift shop
	Grace Evangelical Church
	Gracie's Grain- Robson's Ventures
Gram Corp. - cleaning	
Granite Bank was FNBP and Peterborough Savings	
	Granite Block Corp.
	Granite State Rainbow Play System-playground equip.
	Granite State Swiss-Therault, Barbara
	GRAVES MARY T
Graves, Jonathan & Assoc. Advt	
	Great Shapes-Women's Fitness
Greend and Things	
	Guyette Stacey Roofing
GW Plastics	
	H&R Block-tax prep.
Hafeli Fuels- now part of AW Peters	
Hairsmith, The	
Halvick Wallpaper & Decorating	

YELLOW PAGES DIRECTORY

	Harvest Marketing -consultants
Health Economics Mgt. Syst.	
Heddrick-Cobbs Auctioneers	
Hedstrom and Jane- dentists	Hedstrom and Jane- dentists
	Helmers Publishing, Inc.
	Henderson Associates-promotion prod.
	Hendrickson Logistics Management
	Heritage Apartments-RNW/JNJ
	Herz Investments
Hobbs Jewelers	Hobbs Jewelers
Home Health Care & Comm Ser.	
Hopkins Garage	
	Howard Susan-lawyer
Hughes Jenny Lee Fine Landscapes	
	Hunter, Bruce - Comm.Rental
	Hutchinson, Constance
	I S & S- mkt. consult.
	Ice Cream Shop- Graves, Mary T.
	Ideal Compost Co-soil conditioners
	IDG Reality Inc.
	Independent Financial Services-insur.
Invest	
J & J Trophy	
	J P Furniture Assembly-leasing
Jack Daniels Motor Inn	Jack Daniels Motor Inn
	Jane's In Stitches-tailor
Jan's Hairshack	
Jellison Funeral Home	Jellison Funeral Home
	Jenfield Inc.
	John Brown LTD.
	Johnson, Donald
Johnson, Donald - Dr.	
Johnson's Gulf	
	Johnson's Towing
	Jones Rebecca M
Joseph's Coat	Joseph's Coat
	Journeys in Education Realty Group
	Joyce Kabut Electrologist
Junie Blaisdell Sport-a-rama	
	K & S Concepts financial services

YELLOW PAGES DIRECTORY

	Lafleur, Lee A.
	Laidlaw- Loeb,John O.
	Laroche, Joseph A.
	LaRose Marketing & Commun.-cons.
	Lawrence Jane R - lawyer
Lawrence, Chas. - Dr.	
	Lee-Roberts Barb-massage Therapists
	Lenski & Associates mediation serv.
	Levene David R
	Life Safety Fire Protection Inc
Lifestyles, Inc.	
	Lincyncar, LLC
	Little Roy' Market
Little, S - lawyer	Little, S - lawyer
	Lofgren Donna Dr
Logos Graphic	
	Lynn Boudreau-Physical Therapy
M C Day Care C	
Mac William, William Accountant	
	MacDonald,Scott
Maggie's Market Place-Health Food	Maggie's Market Place-Health Food
MAH Vending Co	
	Main Street Title Ser. LLC
Makechnie - lawyer	MAKECHNIE, NORMAN- Lawyer
	Makris Kim - Homeopaths
	Manfre, Brian State Farm Insurance
	Manhattan East Hair Design
	Maplewood Manse Inc.
	Mariposa Museum
	Masiello Insurance Peterborough
	Mc Donough, Alan T.
	McCullough Paul-mkt. Consult.
McPherson Electric	
Meaningful Pursuits - resumes etc.	
	Media Passport
	Mediation Center of Peterborough-lawyers
	Medical Facility-Traffie,Alvan
	Medical Facility-Two-of-Two Holdings Corp.
Meehan, Greg B.- Dr.	
Alan Melad - woodworking	Alan Melad
Menard, Marc Acct	
	MOR Design Inc. interior consulting

YELLOW PAGES DIRECTORY

	Monad. Plaza- Ashford Peterb. Corp
	Monadnock Adult Care Center
Monadnock Bank, The	
	Monadnock Bus. Ventures
Monadnock Cablevision Co.	
	Monadnock Community Bank
	Monadnock Community Day Center
Monadnock Community Hospital	Monadnock Community Hospital
Monadnock Country Club	Monadnock Country Club
Monadnock Countryside Real Estate	
	Monadnock Eye Associates
Monadnock Family & Mental Health	
	Monadnock Family Services
	Monadnock Internists
Monadnock Ledger	
	Monadnock Medical Arts LLC
Monadnock Music	
	Monadnock Ob-Gyn Assocs PA
	Monadnock Optical
	Monadnock Orthopedic Associates
	Monadnock Sch. for Natural cooking &
	Monadnock Seal Coating-paving
	Monadnock Tennis
	Monadnock Tennis
Monadnock Title & Settlement Ser.	
Monadnock Video Library	
	Monadnock Workforce
Monadnock Workshop	Monadnock Worksource-was Workshop
	Monadnock Yard & Garden (Deere equip.)
Monahon Architects	Monahon Architects
Montgomery Wards	
Morgan's Way	Morgan's Way
	Morning Glory Massage
	Morris, Ruth E.
	Morrison, Arria Tr.
Moto's Mobile Service	Moto's Mobile Service
Mountain View Day Center	
	Mr. Mike's- Lincyncar,LLC
	Mult. Retail-Peterborough Depot Sq., LTD
Multiple List Ser. CVB of R	
Mun Alvin - Optician	
Murphy John - Bus. Consult	

YELLOW PAGES DIRECTORY

Neiskens, John - Dr.	
	New Eng.Wood Des.- Second Story Inv.
New England mut life insur	
	NEW ENGLAND TEL & TEL
New England Tex Book, Inc.	
New England Yearly Meeting Young Friends	
	Newcott Edward P
	NH Sports & Fitness-Cleveland
	NH State Liquor Comm
NH State Liquor Store	
NHBB	NHBB
Nonie's	Nonie's
	Noone Falls,LLC
North Gallery at Tewksbury's, The	North Gallery at Tewksbury's, The
	Northeast Inspection Services Inc
	Northern Tropics Tanning Salon
	NORTHGATE -Bay Acquisition
Northolab - Ortodontics	
Northpack Development Co., Inc.	
	Nuby Manufacturing
NY Life Ins. Co	
Office of Judy Burke, The	
	Omnisort International-mailing serv.
	Open Door Consulting-mgt. Consult.
	Osmonics-Hytrex-water filtration
Ouellette Opticians	
	Our Town Kennel-Leclair,Susan
Our Town Realty Inc.	Our Town Realty Inc.
P&E Hardware	
	Palmer Lynn Anne-massage therapist
Paper Chase, The - gifts	
	Parent Guidance Center
	Parent Guidance Center-social serv.
Partridge - Reproductions	
	Patterson John L
	Patton's For Life Tattoo
Peg's Aerobic Fitness & Peirce Co. - appliances	
	Pennington Richard L - lawyer
	Penske Truck Rental
Perry Motors, Inc.	
	Perry, William F. (see car dealer)

YELLOW PAGES DIRECTORY

Peterborough Car Wash	Peterborough Car Wash
Peterborough Chamber of Comm.	Peterborough Chamber of Comm.
	Peterborough Clinical Associates
	Peterborough Commercial Assoc.
	Peterborough Community Theater
	Peterborough Depot Square, LTD
Peterborough Diner	Peterborough Diner
Peterborough Dry Cleaners	
Peterborough Fish Market	
Peterborough Ford Mercury	
Peterborough Historical Society	Peterborough Historical Society
	Peterborough House of Pizza
Peterborough Industrial Dev. Corp.	
	Peterborough Manor B&B-Harrison
Peterborough Oil co.	
	Peterborough Paints
Peterborough Pizza Barn	Peterborough Pizza Barn
Peterborough Players- theater	Peterborough Players- theater
Peterborough Press	
	Peterborough Reality (next to GraniteBank)
Peterborough Screen Printing Inc.	
Peterborough Shoe Store	Peterborough Shoe Store
	Peterborough Taxi
	Peterborough Technology Group
Peterborough Texaco	
Peterborough Therapy Group	
Peterborough Transcript	Peterborough Transcript
Peters A W Inc	Peters A W Inc
Petersons, Inc., The-realtors	Petersons, Inc., The-realtors
Pets Plus	
Pheasant Wood Health Care	Pheasant Wood Health Care
	Phillips William J - lawyer
	Phoenix Lane LLC- Gurnsey Bldg.
	Pinnacle Towers
	Pinnacle Towers
	Pinney Plumbing & Heating
	Pioneer Laundramat & Cleaners
	Pizza By Grappelli's
Pocketful of Rye - gifts	
	Post Office- Cormack, Robert H.
Post, Chas. - Dr.	
	Reception Center, childrens toys, clothing

YELLOW PAGES DIRECTORY

	PT Dogs
	PUBLIC SERVICE COMPANY
Pumpelly ridge Ski shop	
	Pure Flow- water treatment
	Pure Flow- water treatment
	Puzzle House
	Puzzle House- puzzles
	Queen Bee Puppetry- puppets
	R A Greenwood & son LLC-elec. Generators
	R. A. Gatto's-restaurant
	RadiEssence-R Reed-massage therapists
	Radio Shack
	Raindrops On Roses-florist
Raynsford, Carol - massaage	
	RBC Dain Rauscher-investments adv.
Reade Insur. Agency	
	Reflections West - nail salon
Region Income Tax Ser.	
	Region Income Tax Service
Reho, Richard - therapy	
	Renaissance Commun.-Tech Manual prep.
	RENNA THEODORE
	RENNA, THEODORE
	Rensaissance Room
	Resources for Harmony & Invention-music instr.
	Retired Senior Voluteer Program
	Richardson, Robert
Ricnick's Fitness Center	
	Rite Aid Pharmacies- Morse,Michael
	Rivermead
Riverside Paving & Excavation	
	Riverside Paving & Excavation
	Roberts Chrysler- Jabil Inc.
	Robin Hill Farm-social, human serv.
	Roland's Texaco
Rolling In Dough	
	Rosaly's Farmstand
Roy's Market	
	Roy's Market
	Roy's Market Parking Lot
	Runyon Co.- garden & lawn furnishings
Runyon, L. Phil - Judge	
	Runyon, L. Phil - lawyer
Russell Electric	
	Russell Electric
Russell Heating Oil Inc	
	Russell Heating Oil Inc

YELLOW PAGES DIRECTORY

	School Bus Pking/ garage- Warpula,Robt. E.
	Scott-Farrar Retirement Home
Scully, Daniel Arch.	
	SDE triangle w/ Sharon Rd.
	SDE, Inc.
Sears - Calalog Store-now Rindge	
	Secretariat Reality Co.
	Seigel Charles J
	Senior Focus-seniors serv. organ.
Sentry Business-tax return prep.	Sentry Business-tax return prep.
	Sequoia Technology
ServiceMaster	
	Sharon Arts Center
	Shaws- ex. Ames Dept. Store
Shear Performance	
	Simpson J E Picture Framer
Sim's Press	Sim's Press
	Smythe, Sherry
Soughegan Child dev. Ctr.	
South Village Restoration	
	Southfield VillageApartments
	Southfield VillageApartments
Special Additions	
SPITZFADEN, GREGORY(was Dr.'s office)	
	Sporting Auction-Inter. Serv
	Springfield Reality Co.
	Springfield Reality Co.
Sprink-Fab Inc. - pipe fabricators	
St. Joseph's Monestary	
	Stanek Home Builders
	Startup Legal -lawyers
Steele's- stationers	Steele's- stationers
Sterling Bus. corp. - ans ser.	
Sterling Business Print & Mail	Sterling Business Print & Mail
Sterling Quality Cleaners	Sterling Quality Cleaners
Stevenson Timber Frames	
	Steve's Lettering-signs
Stoops, Ward - Dr. - now Jaffrey	
	Stop & Shop
	Storage Rental - 202 N-Wolf Creek Inv.
	Suley's Soccer Center
Summerhill Res. Ass. Living	Summerhill Res. Ass. Living

YELLOW PAGES DIRECTORY

Taylor Geoffrey Designs - cabinets	
TC's Hallmark - gifts	
Teates, Jim TV	
	Technicare Biomedical Services-med. equip.
	Temple Mountain
Tenney Fritz, and Combs-veterinarians	Tenney Fritz, and Combs-veterinarians
	The Eating Place
	Tiffany Beauty Salon
	TimberPeg- Schaal-Given Contracting
	Time Frame - promotional products
	Tires Unlimited -Bussier
TJ's small Engine Repair - now Antrim	
Toadstool, The	Toadstool, The
	Top EndSportswear-T Shirts, Sweatsh.
Top Notch Cleaners	
	Tower Ventures LLC -land
	Town Hall Press-printers
Toy Balloon, The	
	TRAFFIE, ALVAN A
	Transcendental Mediation -instruction
Transcript, The	Transcript, The
Travel Consultants, LTD	
Travel New Horizons-travel agency	Travel New Horizons-travel agency
	Trinity Christian Academy- school
	Trinity Graphix
Tucker Anthony-investment serv.	Tucker Anthony-investment serv.
	Turner, John E. CPA- tax prep.
	Twelve Pine-Peterborough Depot Sq., LTD
	Two RiversMusic Studio- Ruschenbach,Thomas
	U B S PaineWebber-invest. adv.
	U-Haul Rental
	Under Pressure Pump & Filter-plumbing
United Sales Agency	
Up Country Kitchen & Bath	
Upland Farm Stanley Orchards	
	Upland Farms Orchard
	Urology Associates of Monadnock Region PC
	US Cellular
Valley Automotive	Valley Automotive
	Valley Quest Trust
Valley Ready Mix-part of Harris Const.	
Valley Services	

YELLOW PAGES DIRECTORY

Wayne Greene Enterprises, Inc.	
Wayne Greene Intl.	
Weathers, Robt. - Dr.	
	Welch Cathryn L
Well School, The	Well School, The
	Wes's Discount
Weston Parker, Advt	
	Wheeler's -deli / conv. store
	Whelark Construction- roofing
Whitcomb Arthur, Inc.	
Whitcomb Fire & Saftey	
Whitney Assoc	
	Whitney, Christy
	Whiton Douglas- locksmith
Wickham, Acct	
	Wilder Jeff Plumbing & Heating
	Willette's Furniture
Willis, Barbara	
	Wilson Fletcher R
	Wimpory, Robert
	Wireless Zone-wireless teleph. equip.
WMDK/WRPT - radio	
Woodbury and Son Funeral Service Inc	Woodbury and Son Funeral Service Inc
Woodman's Florist-Palmer, Stephen	Woodman's Florist-Palmer, Stephen
Woodmere Apts	
Yankee Auto Parts	
Yankee Crane Service	
	Yen Yen
Yingling, Thos - Dr.	

Commercial Development and Its Effect on the Tax Rate

By Kurt Gotthardt
Enfield, New Hampshire
2003

Commercial Development and Its Effect on the Tax Rate

PURPOSE

There seems to be a common belief which is often stated that “commercial development will lower your tax rate.” Is this statement true? Or is it a myth. (If stated often enough, it must be true.)

A common method for comparing tax revenues to town expenses is to perform a Cost of Community Services (COSC) study. This method compares residential, commercial and open-space land use in each community being studied.

A fiscal analysis is done for a given year using all the revenues and expenses by line item of a community’s budget. These are assigned proportionately to the town’s residential, commercial and open-space land use components.

These studies have consistently shown that residential tax expenditures are higher than tax revenues collected and commercial and open-space land tax expenditures are lower than tax revenues collected.

The reasons stated for these differences are residential houses use community services, roads and schools. The commercial businesses use few services and do not send children to school. The open-space land, use few if any services and do not send children to school.

(Reference: Does Open Space Pay
By Philip A. Auger, UNH, Coop. Extension)

Because the Cost of Community Services studies only use a one-year time period, it does not answer the question asked.

“What is the long term effect on a towns tax rate, if that town increases its commercial tax base?”

To answer this question, eight New Hampshire towns were selected that are in close proximity to Enfield, NH. The towns selected have the following demographics: an Ivy League college town, a commercial/retail hub town, bedroom community towns, and low-density rural towns.

The names of the towns selected are Canaan, Dorchester, Enfield, Grafton, Hanover, Lebanon, Lyme, and Orange.

The sources for the data are, the NH Office of State Planning, the Economic and Labor Market Information Bureau, NH Employment Security, and Lebanon 1761 to 1994, by Roger Carroll.

FULL VALUE TAX RATE PER \$1,000, BY TOWN, PER YEAR

From 1970 to 2000

Full Value Tax Rate: Tax rate if all the property was assessed at 100% fair market value.

(The actual tax rate for any given year may be different than the Full Value Tax Rate.)

Rank: How each town's Full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value Tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year.

Year	1970		1971		1972		1973	
Town	Tax Rate	Rank						
Canaan	\$32.40	3	X	X	\$28.10	3	X	X
Dorchester	\$23.30	6	X	X	\$16.60	6	X	X
Enfield	\$29.80	4	X	X	\$28.80	2	X	X
Grafton	\$20.20	7	X	X	\$15.20	7	X	X
Hanover	\$33.30	1	X	X	\$31.10	1	X	X
Lebanon	\$33.00	2	X	X	\$25.60	4	X	X
Lyme	\$27.60	5	X	X	\$17.30	5	X	X
Orange	\$13.70	8	X	X	\$11.00	8	X	X

“FULL VALUE TAX RATE PER \$1,000, BY TOWN, PER YEAR CONTINUED”

Year	1974		1975		1976		1977	
Town	Tax Rate	Rank						
Canaan	\$16.60	5	X	X	\$20.20	6	X	X
Dorchester	\$17.20	4	X	X	\$22.50	2	X	X
Enfield	\$19.80	3	X	X	\$20.80	4	X	X
Grafton	\$15.10	7	X	X	\$17.20	7	X	X
Hanover	\$26.90	1	X	X	\$22.40	3	X	X
Lebanon	\$25.10	2	X	X	\$26.60	1	X	X
Lyme	\$16.20	6	X	X	\$20.30	5	X	X
Orange	\$7.70	8	X	X	\$7.40	8	X	X

Year	1978		1979		1980		1981	
Town	Tax Rate	Rank						
Canaan	\$22.40	3	\$18.70	4	\$23.20	2	\$17.50	6
Dorchester	\$8.60	8	\$11.10	8	\$16.90	6	\$11.70	7
Enfield	\$22.30	4	\$19.00	3	\$20.60	3	\$21.80	2
Grafton	\$16.80	6	\$12.90	7	\$13.00	8	\$18.10	4
Hanover	\$25.20	2	\$19.60	2	\$17.88	4	\$19.10	3
Lebanon	\$27.00	1	\$23.60	1	\$24.90	1	\$24.70	1
Lyme	\$19.60	5	\$14.60	5	\$16.10	7	\$18.10	4
Orange	\$14.60	7	\$13.50	6	\$17.20	5	\$17.90	5

“FULL VALUE TAX RATE PER \$1,000, BY TOWN, PER YEAR CONTINUED”

Year	1982		1983		1984		1985	
Town	Tax Rate	Rank						
Canaan	\$21.90	4	\$28.78	1	\$26.62	1	\$25.77	2
Dorchester	\$20.60	6	\$17.33	8	\$19.53	8	\$16.56	8
Enfield	\$26.20	1	\$22.42	5	\$25.22	3	\$24.26	3
Grafton	\$16.40	8	\$23.44	4	\$25.12	4	\$17.32	6
Hanover	\$20.80	5	\$19.28	7	\$20.25	6	\$18.14	5
Lebanon	\$24.10	2	\$26.05	2	\$25.59	2	\$26.34	1
Lyme	\$18.60	7	\$19.95	6	\$21.66	5	\$18.77	4
Orange	\$22.10	3	\$24.77	3	\$20.08	7	\$16.92	7

Year	1986		1987		1988		1989	
Town	Tax Rate	Rank						
Canaan	\$26.50	1	\$24.00	1	\$23.34	1	X	X
Dorchester	\$20.06	5	\$18.94	6	\$21.22	2	X	X
Enfield	\$21.63	4	\$21.84	3	\$19.99	4	X	X
Grafton	\$19.54	6	\$19.24	5	\$19.72	5	X	X
Hanover	\$17.36	7	\$16.92	7	\$14.87	6	X	X
Lebanon	\$22.74	2	\$22.26	2	\$20.30	3	X	X
Lyme	\$17.12	8	\$16.65	8	\$14.22	8	X	X
Orange	\$21.74	3	\$19.90	4	\$14.83	7	X	X

“FULL VALUE TAX RATE PER \$1,000, BY TOWN, PER YEAR CONTINUED”

Year	1990		1991		1992		1993	
Town	Tax Rate	Rank						
Canaan	\$24.26	1	X	X	\$27.56	1	\$32.16	1
Dorchester	\$20.48	3	X	X	\$20.22	6	\$26.63	3
Enfield	\$16.23	7	X	X	\$22.78	4	\$23.80	6
Grafton	\$19.01	4	X	X	\$23.78	3	\$24.97	4
Hanover	\$18.18	5	X	X	\$19.38	8	\$19.97	8
Lebanon	\$23.91	2	X	X	\$27.32	2	\$29.19	2
Lyme	\$16.45	6	X	X	\$21.72	5	\$23.99	5
Orange	\$13.43	8	X	X	\$19.47	7	\$21.37	7

Year	1994		1995		1996		1997	
Town	Tax Rate	Rank						
Canaan	\$31.90	1	\$33.45	2	\$31.97	1	\$34.11	1
Dorchester	\$30.19	2	\$34.65	1	\$21.89	6	\$21.01	8
Enfield	\$26.70	5	\$30.89	3	\$29.14	3	\$27.47	3
Grafton	\$26.82	4	\$27.96	5	\$29.81	2	\$27.01	4
Hanover	\$20.29	8	\$20.74	8	\$20.35	8	\$20.59	7
Lebanon	\$29.20	3	\$29.63	4	\$27.71	4	\$28.66	2
Lyme	\$23.14	6	\$22.56	7	\$20.93	7	\$21.86	6
Orange	\$22.38	7	\$23.49	6	\$23.31	5	\$23.67	5

“FULL VALUE TAX RATE PER \$1,000, BY TOWN, PER YEAR CONTINUED”

Year	1998		1999		2000			
Town	Tax Rate	Rank						
Canaan	\$33.81	1	\$21.23	5	\$21.28	4		
Dorchester	\$20.44	7	\$16.54	8	\$19.80	7		
Enfield	\$26.26	4	\$20.47	7	\$22.46	2		
Grafton	\$28.93	2	\$22.48	2	\$19.40	8		
Hanover	\$19.73	8	\$21.26	3	\$20.37	6		
Lebanon	\$28.20	3	\$26.26	1	\$27.40	1		
Lyme	\$23.40	5	\$21.90	4	\$22.11	3		
Orange	\$22.68	6	\$20.72	6	\$21.09	5		

Population Density: Number of persons per square mile of land area.

Full Value Tax Rate Per \$1,000: Tax rate if all the property was assessed at 100% fair market value.

(The actual tax rate for any given year may be different than the Full Value tax rate.)

Percent Commercial: Percent of tax revenue collected from commercial property.

Percent Residential: Percent of tax revenue collected from residential property.

Percent Other: Percent of tax revenue collected from undeveloped land.

Percent Current Use: Percent of tax revenue collected from land taxed at current use rates.

1970	Canaan	Dorchester	Enfield	Grafton	Hanover	Lebanon	Lyme	Orange
Population	1,923	141	2,345	370	8,494	9,725	1,112	103
Population density	36	3	58	9	173	242	21	4
Full value tax rate per \$1,000	\$32.40	\$23.30	\$29.80	\$20.20	\$33.30	\$33.00	\$27.60	\$13.70
Percent commercial	0%	0%	0%	0%	0%	6%	0%	1%
Percent residential	68%	52%	71%	68%	79%	81%	63%	70%
Percent other	32%	48%	29%	32%	21%	13%	37%	29%

1980	Canaan	Dorchester	Enfield	Grafton	Hanover	Lebanon	Lyme	Orange
Population	2,456	244	3,175	738	9,119	11,134	1,289	197
Population density	46	5	79	18	186	276	24	9
Full value tax rate per \$1,000	\$23.20	\$16.90	\$20.60	\$13.00	\$17.88	\$24.90	\$16.10	\$17.20
Percent commercial	0%	0%	0%	0%	1%	4%	0%	0%
Percent residential	57%	54%	56%	76%	69%	73%	51%	50%
Percent other	43%	46%	44%	24%	30%	23%	49%	50%

Population Density: Number of persons per square mile of land area.

Full Value Tax Rate Per \$1,000: Tax rate if all the property was assessed at 100% fair market value.

(The actual tax rate for any given year may be different than the Full Value tax rate.)

Percent Commercial: percent of tax revenue collected from commercial property.

Percent Residential: Percent of tax revenue collected from residential property.

Percent Other: Percent of tax revenue collected from undeveloped land.

Percent Current Use: Percent of tax revenue collected from land taxed at current use rates.

1990	Canaan	Dorchester	Enfield	Grafton	Hanover	Lebanon	Lyme	Orange
Population	3,045	392	3,978	923	9,212	12,183	1,496	237
Population density	57	9	99	22	188	302	28	10
Full value tax rate per \$1,000	\$24.26	\$20.48	\$16.23	\$19.01	\$18.18	\$23.91	\$16.45	\$13.43
Percent commercial	8%	0%	8%	0%	18%	39%	8%	0%
Percent residential	92%	95%	92%	99%	81%	60%	91%	95%
Percent current use	0%	5%	0%	1%	1%	1%	1%	5%

2000	Canaan	Dorchester	Enfield	Grafton	Hanover	Lebanon	Lyme	Orange
Population	3,319	353	4,618	1,138	10,850	12,568	1,679	299
Population density	62	8	115	27	221	312	31	13
Full value tax rate per \$1,000	\$21.28	\$19.80	\$22.46	\$19.40	\$20.37	\$27.40	\$22.11	\$21.09
Percent commercial	6%	0%	7%	1%	20%	55%	8%	0%
Percent residential	92%	93%	92%	96%	80%	45%	91%	90%
Percent current use	2%	7%	1%	3%	0%	0%	1%	10%

Canaan

Canaan	1970	1980	1990	2000
Population	1,923	2,456	3,045	3,319
Population density	36	46	57	62
Full value tax rate per \$1,000	\$32.40	\$23.20	\$24.26	\$21.28
Percent commercial	0%	0%	8%	6%
Percent residential	68%	57%	92%	92%
Percent other	32%	43%	X	X
Percent current use	X	X	0%	2%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year.

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Canaan	#1	12 years	#5	2 years
	#2	3 years	#6	2 years
	#3	3 years	#7	0 years
	#4	3 years	#8	0 years
TOTAL		21 years		4 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$97,900.

For the Year 2000 the number of town employees was 56.

For the Year 2000 the number of school employees was 241.

¹ (Mascoma Valley Regional School District)

Of the eight towns selected, Canaan placed second highest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Canaan has a medium population density, some commercial development and low housing value. (Less than \$100,00)

¹ The Mascoma Valley Regional School District serves the towns of Canaan, Dorchester, Enfield, Grafton and Orange.

Dorchester

Dorchester	1970	1980	1990	2000
Population	141	244	392	353
Population density	3	5	9	8
Full value tax rate per \$1,000	\$23.30	\$16.90	\$20.48	\$19.80
Percent commercial	0%	0%	0%	0%
Percent residential	52%	54%	95%	93%
Percent other	48%	46%	X	X
Percent current use	X	X	5%	7%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Dorchester	#1	1 year	#5	1 year
	#2	3 years	#6	7 years
	#3	2 years	#7	3 years
	#4	1 year	#8	7 years
TOTAL		7 years		18 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$84,600.

For the Year 2000 the number of town employees was 2 full time (ft.), 6 part time (pt.)

For the Year 2000 the number of school employees was 241.

¹ (Mascoma Valley Regional School District)

Of the eight towns selected, Dorchester placed sixth highest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Dorchester has a low population density, zero commercial development and low housing value. (Less than \$100,00)

Enfield

Enfield	1970	1980	1990	2000
Population	2,345	3,175	3,979	4,618
Population density	58	79	99	115
Full value tax rate per \$1,000	\$29.80	\$20.60	\$16.23	\$22.46
Percent commercial	0%	0%	8%	7%
Percent residential	71%	56%	92%	92%
Percent other	29%	44%	X	X
Percent current use	X	X	0%	1%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Enfield	#1	1 year	#5	2 years
	#2	3 years	#6	1 year
	#3	9 years	#7	2 years
	#4	7 years	#8	0 years
TOTAL		20 years		5 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$112,600.

For the Year 2000 the number of town employees was 42.

For the Year 2000 the number of school employees was 241.

¹ (Mascoma Valley Regional School District)

Of the eight towns selected, Enfield placed third highest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Enfield has a medium population density, some commercial development and medium housing value. (Between \$100,00 and \$150,000)

Grafton

Grafton	1970	1980	1990	2000
Population	370	739	923	1,138
Population density	9	18	22	27
Full value tax rate per \$1,000	\$20.20	\$13.00	\$19.01	\$19.40
Percent commercial	0%	0%	0%	1%
Percent residential	68%	76%	99%	96%
Percent other	32%	24%	X	X
Percent current use	X	X	1%	3%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Grafton	#1	0 years	#5	3 years
	#2	3 years	#6	3 years
	#3	1 year	#7	5 years
	#4	7 years	#8	3 years
TOTAL		11 years		14 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$81,300.

For the Year 2000 the number of town employees was 35.

For the Year 2000 the number of school employees was 241.

¹ (Mascoma Valley Regional School District)

Of the eight towns selected, Grafton placed forth highest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Grafton has low population density, zero commercial development and low housing value. (Less than \$100,00)

Hanover

Hanover	1970	1980	1990	2000
Population ²	8,494	9,119	9,212	10,850
Population density	173	186	188	221
Full value tax rate per \$1,000	\$33.30	\$17.88	\$18.18	\$20.37
Percent commercial ³	0%	1%	18%	20%
Percent residential	79%	69%	81%	80%
Percent other	21%	30%	X	X
Percent current use	X	X	1%	0%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Hanover	#1	3 years	#5	3 years
	#2	2 years	#6	3 years
	#3	3 years	#7	4 years
	#4	1 year	#8	6 years
TOTAL		9 years		16 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$262,200.

For the Year 2000 the number of town employees was 110.

For the Year 2000 the number of school employees was 345.

² The population count for Hanover includes the Dartmouth College student population, about 4,000 students per year.

³ The Dartmouth College dormitories, kitchens and dinning hall buildings are taxed as commercial uses.

Of the eight towns selected, Hanover placed fifth highest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Hanover has a high population density, high commercial development and high housing value. (More than \$150,000)

Lebanon

Lebanon	1970	1980	1990	2000
Population	9,725	11,134	12,183	12,568
Population density	242	276	302	312
Full value tax rate per \$1,000	\$33.00	\$24.90	\$23.91	\$27.40
Percent commercial	6%	4%	39%	55%
Percent residential	81%	73%	60%	45%
Percent other	13%	23%	X	X
Percent current use	X	X	1%	0%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Lebanon	#1	8 years	#5	0 years
	#2	11 years	#6	0 years
	#3	3 years	#7	0 years
	#4	3 years	#8	0 years
TOTAL		25 years		0 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$123,100.

For the Year 2000 the number of town employees was 171.

For the Year 2000 the number of school employees was 450.

Of the eight towns selected, Lebanon placed highest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Lebanon has a high population density, high commercial development and medium housing value. (Between \$100,000 and \$150,000)

Lyme

Lyme	1970	1980	1990	2000
Population	1,112	1,289	1,496	1,679
Population density	21	24	28	31
Full value tax rate per \$1,000	\$27.60	\$16.10	\$16.45	\$22.11
Percent commercial	0%	0%	8%	8%
Percent residential	63%	51%	91%	91%
Percent other	37%	49%	X	X
Percent current use	X	X	1%	1%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Lyme	#1	0 years	#5	9 years
	#2	0 years	#6	5 years
	#3	1 year	#7	4 years
	#4	3 years	#8	3 years
TOTAL		4 years		21 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$168,300.

For the Year 2000 the number of town employees was 84 pt.

For the Year 2000 the number of school employees was 44 pt.

Of the eight towns selected, Lyme, (tied with Orange) placed lowest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Lyme has a low population density, some commercial development and high housing value. (Greater than \$150,000)

Orange

Orange	1970	1980	1990	2000
Population	103	197	237	299
Population density	4	9	10	13
Full value tax rate per \$1,000	\$13.70	\$17.20	\$13.43	\$21.09
Percent commercial	1%	0%	0%	0%
Percent residential	70%	50%	95%	90%
Percent other	29%	50%	X	X
Percent current use	X	X	5%	10%

Rank: How each town's full Value Tax Rate compared to the other towns.

A rank of one equals the highest Full Value tax Rate for that year.

A rank of eight equals the lowest Full Value Tax Rate for that year

TOWN	RANK	NUMBER OF YEARS	RANK	NUMBER OF YEARS
Orange	#1	0 years	#5	5 years
	#2	0 years	#6	4 years
	#3	3 years	#7	7 years
	#4	1 year	#8	5 years
TOTAL		4 years		21 years

For the Year 2000 the Median Value, Owner-Occupied Housing was \$105,900.

For the Year 2000 the number of town employees was 9 pt.

For the Year 2000 the number of school employees was 241.

¹ (Mascoma Valley Regional School District)

Of the eight towns selected, Orange, (tied with Lyme) placed lowest for number of years with a Full Value Tax Rank of one to four.

As compared to the other towns in this analysis, Orange has low population density, zero commercial development and medium housing values. (Between \$100,000 and \$150,000)

Appendix A

Summary Of Largest Employers Per Town (Year 2000)

Canaan

Employers	Product/Service	Employees
Mascoma Regional High & Middle School ¹	Education	140
Canaan Elementary School	Education	54
Cardigan School	Education	50
Barker Steel	Steel fabrication	40
CLE	Race track	25
Town of Canaan	Municipality	56

Dorchester

Employers	Product/Service	Employees
Town of Dorchester	Municipality	2 ft, 6 pt

Enfield

Employers	Product/Service	Employees
Enfield Village School & SAU Office 62 ²	Education	47
Shaker Valley Auto	Auto dealership	40
Town of Enfield	Municipality	42
Evans Fuel	Convenience store, fuel	22
Dana Robes	Furniture	20
George's Super- Value	Grocery Store	12

Grafton

Employers	Product/Service	Employees
Town of Grafton	Municipality	35
Ruggles Mine	Tourist attraction	10

Hanover

Employers	Product/Service	Employees
Dartmouth College	Education	3,200
Hypertherm	Plasma arch cutting	400
Dresden School District	Education	345
Dartmouth Printing Co.	Printing	242
Spectra	Inkjet print heads	130
Trumbull Nelson	Construction	120
Hanover Inn	Lodging	112
Town of Hanover	Municipality	110
Creare	Research & Development	83

Lebanon

Employers	Product/Service	Employees
Dartmouth Hitchcock Medical Center (DHMC)	Medical center, clinic	5,000
Timkin Aerospace	Ball & roller bearings	647
Alice Peck Day	Hospital	474
Lebanon School District	Education	450
Thermal Dynamics	Plasma cutting torches	270
Fluent, OMI	Software	177
City of Lebanon	Municipality	171
Luminescent System, Inc.	Electro luminescent lighting	167
New Jersey Machine of NH		73
Logic Associates		68

Lyme

Employers	Product/Service	Employees
Dartmouth Skiway	Ski area	119 pt
Town of Lyme	Municipality	84 pt
Dowd's Country Inn	Hotel	81 pt
Lyme School District	Education	44 pt
Loch Lyme Lodge	Hotel	42 pt
Estates & Gallup	General contractors	36 pt
Alden Country Inn	Hotel	35 pt
Cross Roads Academy	Education	28 pt
Green Mountain Studios	Mail order wholesaler	26 pt
Wagner Forest Management Ltd.	Forest management	24 pt

Orange

Employers	Product/Service	Employees
FC Hammond & Sons	Lumber	14
Town of Orange	Municipality	9 pt

¹ The Mascoma Valley Regional High School and Middle School serve the towns of Canaan, Dorchester, Enfield, Grafton and Orange.

² SAU 62 serves the Mascoma High School, Middle School, Canaan Elementary School and Enfield Village School.

Appendix B

Commercial Development History of RT 12A and RT 120 Lebanon, NH

- 1965** Etna Road Industrial Park opens off of rt. 120
- 1966** I 89 opens to traffic in Lebanon
- 1968** Upper Valley Shopping Center opens on rt.12A, I 89, exit 20
- 1971** First fast food restaurant opens on rt.12A, I 89, exit 20
- 1976** K-mart Plaza opens on rt.12A, I 89, exit 20
- 1976** Colonial Plaza opens on rt.12A, I 89, exit 20
- 1978** Sheraton North Country Inn opens on rt.12A, I 89, exit 20
- 1983** Airport Industrial Park Opens on rt. 12A, I 89, exit 20
- 1986** Powerhouse Plaza opens on rt.12A, I 89, exit 20
- 1991** Dartmouth Hitchcock Medical Center [DHMC] moves to rt.120
- 1991** Centerra Business Park opens on rt.120, near DHMC
- 1993** Powerhouse Mall Opens on rt.12A, I 89, exit 20
- 1999** Wal-Mart Shopping Center opens on rt.12A, I 89, exit 20

DHMC payments to City of Lebanon

- 1991** \$2 million to Fiscal Impact Fund, no effect on tax rate

CONCLUSION

The percent of commercial tax revenue collected by Lebanon ranged from 6% in 1970 to 55% in 2000. During this same time period, Lebanon had the highest number of years with a Full Value Tax Rank of one to four.

The percent of commercial tax revenue collected by Orange ranged from 1% in 1970 to 0% in 2000. During this same time period, Orange, (tied with Lyme) had the lowest number of years with a Full Value Tax Rank of one to four.

The towns that have low commercial development and low populations tend to have low Full Value Tax Rates. The two towns that have low Full Value Tax Rates, but high populations and a high amount of commercial development are Hanover and Lyme. These towns have high Median Value Owner-Occupied Housing, (greater than \$150,000). Hanover and Lyme are able to offset the negative effect of a high population and high commercial development with more tax dollars collected per house. For example, a house located in Hanover or Lyme will generate more tax dollars than the same house located in Dorchester, Grafton, or Orange, (median value owner-occupied housing less than \$100,000.)

Why does a town with the largest commercial tax base also have the highest Full Value Tax Rate? A possible answer to this question is, commercial businesses need employees, and employees want to live close to where they work, "In Town". A small business or an individual person moving into a town will not have an impact on the tax rate, but a large business or a large number of people moving into a town will have an impact. The larger the population, the greater the demand for town and school services. An increase in town and school services will result in an increase in the town's tax rate over time. Or put another way **"No services required, no tax dollars needed; more services required, more tax dollars needed."**

How can a town maintain a low tax rate compared to other towns over time?

If commercial development increases a town's population and a large population increases the demand for town and school services. The best option for a town is to promote and encourage open-space. Even though open-space pays the least amount of tax dollars, it requires few if any town services, and no school services.

Chapter 4: Open Space

- [“The Economic Impact of Open Space in New Hampshire”](#)
- [Cost of Community Services Study, Peterborough 1996-97](#)
- [Conservation Lands in Peterborough](#)
- [Open Space Questionnaire](#)
- [Links to References for Open Space Chapter](#)



The Economic Impact of Open Space in New Hampshire

Prepared for:

The Society for the Protection of New Hampshire Forests

January 1999



EXECUTIVE SUMMARY

The Society for the Protection of New Hampshire Forests requested Resource Systems Group to provide an independent analysis of the economic impacts of open space on the economy of the State of New Hampshire. The purpose of this assessment is to provide a factual basis for informing the public and conservation organizations about the value of open space to the New Hampshire economy. Open space is defined in this study as areas that are not built up, excavated, or developed. Wild areas, forests, tree farms, open productive agricultural land, grassland, pasture, wetlands, lakes, natural seashores, and the non-built up parts of state and municipal parks are all included. Open space does not need to be completely natural or pristine to be included under this definition. At present, approximately 89% of New Hampshire can be classified as open space.

Open space is a direct underpinning of four economic sectors: agriculture, forestry, tourism and recreation, and second homes used for vacations and recreation. For each sector, the availability of open space is a significant factor, and often the critical one, in determining the income, jobs, and taxes derived from those sectors. In addition, the study recognized that there were other important economic contributions to the state economy which cannot be quantified, including the value of open space in attracting and retaining business and industry and making New Hampshire an attractive place for retirement. This study collected data primarily from state and federal government sources, which were then used to evaluate and quantify the contribution of open space to the New Hampshire economy from each of the four sectors. An input/output economic model of New Hampshire was used to determine the indirect impacts of open space related economic activities. The economic impacts of open space are summarized in the following table.

Summary of the Economic Impacts Related to Open Space Activities in New Hampshire 1996/97

	Gross Direct Income	Average % Attributed to Open Space	Attributed Direct Income	Attributed Direct Jobs	Attributed Direct & Indirect Income	Attributed Direct & Indirect Jobs	Attributed State & Local Tax Revenues
Agriculture Related	\$413,400,000	56%	\$230,900,000	3,669	\$376,915,800	5,467	\$30,907,096
Forest Related	\$1,198,214,000	100%	\$1,198,214,000	6,487	\$3,921,182,894	16,675	\$325,300,797
Tourism and Recreation	\$3,178,480,000	54%	\$1,732,261,600	41,661	\$3,067,152,265	64,002	\$249,417,502
Vacation Homes	\$478,783,000	100%	\$478,783,000	8,648	\$816,983,565	15,029	\$285,855,786
Total	\$5,268,877,000	69%	\$3,640,158,600	60,465	\$8,182,234,524	101,173	\$891,481,182

The results of the analysis show that open space based economic activities contributed \$8.2 billion per year to the New Hampshire economy in 1996/97. This amounts to over 25% of



civilian jobs, which were dependent on open space. The open space based economy is larger than the whole tourist industry and it is second only to manufacturing in terms of both income and employment. With an estimated \$891 million in state and local revenue generated, the open space based economy provided over 35 % of the total state and local tax revenues in 1996/97. The 5,265,000 acres of open space in the state contributed an average of over \$1,500 per acre in total state income.

The major quantifiable components of the open space based economy are as follows:

- 1 Agriculture related activities have annual gross revenues of \$413 million. Of this total, \$231 million, or 56% of the total revenue, is dependent on open space as defined in this study. Greenhouse production, ornamental horticulture, landscaping and the processing of food that is produced primarily outside the state are not considered to be open space related. The total direct and indirect impact on the state economy from agriculture is \$377 million and this sector generates over 5,400 jobs.
- 2 Forestry based activities, including primary forest products, saw milling and paper manufacturing, generate almost \$1.2 billion in gross revenues, all of which is open space based. When the indirect impacts are added, the total direct and indirect contribution to the state economy is \$3.9 billion making it the largest contributing sector in terms of total income. The forest sector generates over 16,600 jobs.
- 3 Tourism and recreation spending by residents and visitors was almost \$3.2 billion in 1996/97, including associated eating, drinking, and accommodation. Of the \$3.2 billion it is estimated that 54% of the total expenditure, or \$1.7 billion, is based on open space related activities such as hunting, fishing, bird watching, hiking, skiing, and camping. When the indirect impacts are added, the total direct and indirect impact on the state economy is over \$3 billion and the sector generates over 64,000 jobs.
- 4 Second homes in New Hampshire that are primarily for vacation and recreational use generate \$479 million in annual spending, all of which is open space related. This includes property tax payments, utilities, construction, repair, and renovation but not the tourism or recreation related expenditures of the owners or renters, as these expenditures are included in the tourism and recreation sector. The total direct and indirect impact on the state economy is \$817 million and the sector generates over 15,000 jobs.

Overall, the estimates in this study are conservative because they do not include the contribution of open space in attracting and retaining businesses and retirees, or the



increase in property values that may occur in proximity to open space. The four sectors that have been quantified together produce \$3.5 billion in direct expenditures and generate a total direct and indirect impact of \$8.2 billion. Of this total, about \$4.4 billion is generated by primary open space activity, such as agricultural crop production, timber production, and outdoor recreation. About \$3.8 billion is generated by secondary activities such as saw milling, paper manufacture, and agricultural food processing, based principally on New Hampshire-grown raw materials.

The magnitude of the contribution of open space to the state economy demonstrates how important open space is to the well being of the people of New Hampshire and why open space should be a continuing issue of public policy concern.

BACKGROUND AND PURPOSE

The Society for the Protection of New Hampshire Forests requested Resources Systems Group to provide an independent analysis of the economic impacts of open space on the economy of the State of New Hampshire. The purpose of this assessment is to provide a factual basis for informing the public and conservation organizations about the value of open space to the New Hampshire economy.

Open space comes in many forms, from municipal parks to the great wilderness areas of the White Mountain National Forest and includes thousands of acres of productive farm and forest lands as well as wilderness and wildlife reserves. Some of this land is public or in conserved private ownership that is protected permanently from development. Some is in multiple use or is primarily used for the production of food or fiber. Whatever its primary designation, there is little doubt that open space is an important factor in the economic well being of the state, and that it is a defining characteristic of the place that resonates with both residents and visitors. The value of the open space is widely recognized both by those who wish to extend open space greater protection and those who wish to develop open space. Indeed, it is often the proximity to open space that makes New Hampshire such an attractive place for tourism, recreation, retirement, and for the location of industries whose owners and employees value the quality of life that open space provides.

The conflict between open space and development is not new. The factors of production (land, capital, and labor) that are necessary for economic development have always included open space as a natural resource to be used for production or development. In the late 19th century, with the development of mass tourism and outdoor recreation, open space as a non-consumptive resource took on new meaning as tourism and recreation became an important part of the state's economy. Whenever a resource is used up, the production that is dependent upon it is in jeopardy, and that is true today of the industries that are directly or indirectly dependent on open space.



When resources are depleted, technology finds substitutes. In New England, wood fuel was replaced by coal and oil, as wood resources became scarce. Plastics and fiber composites replaced wood and metals and composite wood products are replacing sawed timber in home construction. Outdoor recreation and tourism could be replaced with indoor sports or urban culture based tourism. Similarly, forest products and open space based agriculture may to some extent be replaced by wood substitutes and industrial agriculture. Without expressing judgements on the relative values of these activities, there is little doubt that if New Hampshire were to see a decline in open space based economic activities the transition to substitutes would probably not be to New Hampshire's long term advantage. This is because while New Hampshire enjoys a natural advantage in open space based economic activities, it does not have an advantage in urban or cultural tourism, indoor recreation or in the oil based materials industries. Therefore, given the natural advantage that the state enjoys in open space based economic activity, it is important to understand and quantify the value that is created by open space resources.

The purpose of this study therefore is to attempt to provide a quantitative assessment of economic activities in the state that are based on open space, so that these economic values may be better understood in the process of public policy formation.

REVIEW OF THE METHODOLOGY FOR ECONOMIC VALUATION OF OPEN SPACE

The methodology for the economic valuation of open space can be considered as a special case of the more general problem of the valuation of natural resources which may have both market and non-market values and in addition include consumptive and non-consumptive uses.

Open space is defined here as areas that are not built up, excavated, or developed. Wild areas, forests, tree farms, open productive agricultural land, grassland, pasture, wetlands, lakes, natural seashores, and the non-built up parts of state and municipal parks are all included. Open space does not need to be completely natural or pristine to be included under this definition. Excavated areas, unless fully reclaimed, playing fields, landfills, waste lagoons, industrial agriculture and horticulture facilities, and greenhouses are excluded. For practical reasons, small areas of open space such as back yards, home gardens, and landscaping around commercial developments are also excluded. Under this definition, almost all open space could revert to the natural state if left alone.

The need for the measurement of the economic value of open space occurs because open space, like other non-consumptive natural resources, is not well represented in the market place. Some values such as standing timber, soil quality, and clean water may be factors in the sale price of private land. But the more general values such as the life supporting services of natural ecosystems and the value for outdoor recreation are often not reflected in selling prices or rents. This does not mean that they cannot be given market place values and today there are attempts through access fees, hunting and fishing licenses, and pollution trading credits to bring natural resource values into the market place. As a result, there has been an increased emphasis on market based policy.



The study of the economics of natural resources has been very active in the last two or three decades. It is an outgrowth of classical economics and it has become of greater importance in part because of the rise of the environmental movement and in part because of the growing desire to quantify intangible values and environmental externalities. As a result, a wide variety of techniques have been developed for placing values on non-consumptive uses of natural resources for which market pricing is not available or inappropriate. The variety of approaches taken by resource analysts are not mutually exclusive and some methodologies can be used in combination with one another, depending upon the intended use of the analysis. Each approach has a particular application and the choice of methodology should be governed by the intended use of the analysis.

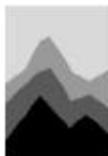
There are at least five approaches that can be taken to the valuation of open space. These are

- 1 Value of services provided by natural ecosystems
- 2 Enhancement of property values in proximity to open space
- 3 Value of time and goods used by people using open space resources
- 4 Benefit cost analysis of developing versus protecting open space
- 5 Economic impact of open space related economic activity

VALUE OF SERVICES APPROACH

Open space valuation can be considered as a special case of the valuation of natural ecosystems. The value of services provided by nature can be used as a measure of the value that natural ecosystems provide to the human economy. The value of natural services is established by the cost of replacing those services with human technology. Therefore, the value of a forest lies not only in the value of the timber but in the purification of air and water that would have to be provided at enormous cost by human engineering if it were not present. This approach has been used in a landmark paper by Robert Costanza, in which the value of all the global ecosystems was valued at \$16 to \$54 trillion per year¹. This compares with the estimated global gross economic production of \$18 trillion per year. The approach recognizes that human existence is critically dependent on natural ecosystems and leads to a recognition, if any were needed, that we cannot survive without nature. However, the approach does not relate directly to public policy at the state or local level. The values that are provided by nature, enormous though they are, are outside the money economy at present. The valuation derived from this approach does not translate into the economic terms of jobs, income, and taxes that are best understood in the political process.

¹ Costanza, Robert et al: The value of the world's ecosystem services and natural capital
Nature 387, 253-260 (1997) Article



ENHANCEMENT OF PROPERTY VALUES IN PROXIMITY TO OPEN SPACE

A room with a view is more valuable than one without. This seems to be a value derived from art, but it is never-the-less a real economic effect, especially where the open space is at the water front. Measuring the differences in selling prices for property at varying distances from open space gives a surrogate value for the open space itself. In addition, it provides a measure of the effects of open space on the economy, to the extent that the enhanced values are translated into transactions at higher values. Higher values also increase property tax revenues. Property values provide a useful localized measure of open space values, however, they relate to only one impact associated with open space. There are many other economic effects of open space such as recreation and community-wide aesthetic values that are not reflected in individual property values. Furthermore open space may have direct productive value such as on farms and forest that are not included in property values. Thus property values are a very incomplete measure of the economic value of open space.

ALUE OF TIME AND GOODS USED IN RELATION TO OPEN SPACE

Open space is used for a variety of activities, some of which are incorporated in the market economy and some of which are not. Those goods and services provided by open space which enter into the market economy, such as agricultural and forest production, can be valued by the market price of the goods produced. Similarly, the price paid for access to open space where fees are charged for recreational use can also be used. However, in the case where the actual use of the open space is free, such as boating or swimming in lakes or hiking trails, some economists have used surrogate prices to value the resource. These surrogate values include the value of time used in recreation, and/or the value of goods such as boats, fishing tackle, skis etc. which are used for recreation. The problem with this approach is that it uses two fundamentally different measures of value that cannot be easily combined. Furthermore, the actual values of time used are highly controversial and the valuation of goods and services purchased may not always directly relate to the state or place in which the open space is located.

COST BENEFIT ANALYSIS OF DEVELOPING VERSUS PROTECTING OPEN SPACE

Cost benefit analysis is a comprehensive approach to decision making based on comparing the economic costs and benefits of specific courses of action. Usually the costs and benefits of an action are specified in dollar terms and the ratio of benefits to costs is determined over the lifetime of the action. It is most commonly used to determine if the benefits exceed the costs for a specific action such as building a dam or constructing a highway. A comprehensive cost benefit analysis would take into consideration all costs including externalities, such as pollution, and loss of wildlife and open space. Therefore, cost benefit analysis is an appropriate tool for making development versus protection decisions. It has been widely used by the U.S. Army Corp of Engineers in decision making in dam construction and flood protection programs.

Cost benefit analysis is a decision-making methodology. It does not specify exactly how the costs are to be determined. The methodology has been highly controversial when applied to



natural resource decision making primarily because of a lack of agreement on how the costs of the loss of natural resources can be accounted for. Typically, cost benefit studies have used one or more of the other approaches described in this section in order to evaluate costs and therefore cost benefit analysis is not a complete substitute for other methods.

ECONOMIC IMPACT ANALYSIS

Economic impact analysis is a set of techniques for measuring the effect of specific economic activities on other parts of the economy. In the case of open space, the methodology should begin with the collection of data on those parts of the economy that are dependent upon open space and then making an assessment of the contribution of open space to that activity in dollars terms. The economic impact of that activity can then be estimated by the use of an input/output model of the state economy. Through the use of input/output models the indirect and induced effects can be characterized in terms of income, employment, and tax revenues.

Economic impact analysis has the advantage that it provides measures of economic activity in terms of income, employment, and taxes that are very relevant as a basis for public policy making. However, economic impact analysis is not in itself a decision-making tool, although it can be used as a comparative method for evaluating the merits of alternative courses of action.

In this study, economic impact methods were used to assess the economic importance of open space on the New Hampshire economy, mainly because the method provides the most relevant measure of the economic value of open space that is most easily understood by policy makers. A more complete description of the methods used is given in the following sections of the report.

DESCRIPTION OF THE METHODOLOGY USED

INTRODUCTION

Economic impact analysis is used to determine how a specific economic activity will affect the economy of a community, state, region, or nation in which the activity takes place. The usual measures that are used for this analysis are income, employment, and taxes paid. The expenditure of any business becomes the income of other businesses and individuals, which in turn is re-spent in the economy to provide more income for others. Thus any initial economic activity has a multiplier effect that ripples through the economy. Economic impact analysis measures these economic effects in the area where the activity takes place.

The method used in this report calculates the economic impact of open space related economic activities on the State of New Hampshire. The method is dependent upon statewide multipliers derived from IMPLAN, a national economic input/output model used



in this study.¹ Not all the impacts of an economic activity are confined to the home state. Purchases of fuel, raw materials, equipment, and services may occur out of state. Some purchases, such as fuel oil, may be imported, which means that there would be an economic impact abroad. The analysis presented here is limited to the economic impact in New Hampshire.

DIRECT EXPENDITURE AND EMPLOYMENT

The direct expenditure made by open space related economic activities is the sum of all the direct payments which are made by those activities, such as agriculture, forestry, tourism, recreation, and second home use. The expenditures made by the purchasers of these goods and services become the income of the producers. This includes salaries and wages paid to workers, payments to landowners, and profits or compensation to owners and managers. These data come from published and unpublished state and federal data, surveys, and industry sources. This is the primary input to the analysis. Some sectors of the economy, for example tourism and recreation, include economic activities, such as hunting and fishing, which are attributable to open space, and some, such as visiting museums, which are not. Therefore, the expenditure data must be adjusted so that only those activities that are directly related to open space are counted. This is discussed in the case of each sector.

The direct employment is the number of persons employed directly by those who receive the direct expenditure payments, including owners and managers. This information is obtained from the IMPLAN database that is derived from US Census data collected on all industries.

INDIRECT INCOME AND INDIRECT EMPLOYMENT

The term indirect income, as used in this analysis, is actually the sum of the indirect and induced income. It is composed of the sum of the expenditures made by the companies or individuals that act as suppliers to the sectors affected, plus the expenditures made by the employees of those businesses and their suppliers (induced income). These expenditures include such item as supplies, fuel, utilities, trucking, financial services, and the housing, transportation, retail, and other personal expenditures of employees. The estimates of indirect income are obtained by taking the direct expenditure and using the IMPLAN multipliers to determine the amount of indirect and induced income from each class of expenditure.

Indirect employment is the number of persons employed as a result of the indirect income generated by open space related economic activities. The number is derived by using the IMPLAN indirect employment multiplier expressed as the number of jobs per \$1 million of indirect income. The job estimates are provided for the same categories as indirect income.

STATE AND LOCAL TAX REVENUES

The actual amount of state and local taxes paid by open space related economic activities is very hard to estimate. The specific tax payments of individuals and businesses are usually

¹Palmer, C and E. Siverts, IMPLAN Analysis Guide, US Forest Service, Fort Collins Colorado, 1985



confidential. Tax estimates are made in two ways. In the first instance where there are specific data available, such as rooms and meals tax records and timber tax records, the data are used. The second method is to use state tax collection to income ratios, because in many cases it is impossible to calculate the actual state tax payments made by some industries. This method assumes the taxes paid by open space related economic activities are the same as the state average as a percentage of income. The average state tax rates are provided in the model.

USE OF THE IMPLAN INPUT/OUTPUT MODEL

This study uses the results of the IMPLAN input/output model in the form of a set of multipliers and expenditure fractions that have been calculated for each state. The IMPLAN model uses basic data on businesses that have been collected by the Department of Commerce for businesses by category. IMPLAN is an input/output model developed by the U.S. Forest Service for economic impact analysis of forest and natural resource based activities, although it has been used for many applications throughout the country. This model uses the IMPLAN 1995 structural matrices for New Hampshire¹. These IMPLAN results are incorporated into a computer spreadsheet model that calculates the economic impacts.

Several of the limitations of economic impact analysis stem from the characteristics of input/output models. Nevertheless, input/output models are the only practical way of assessing the indirect effects of an economic activity. In this methodology, the input/output approach is combined with direct income in a hybrid assessment. This is necessary as open space related economic activity is not classified as a separate activity by the Department of Commerce.

The hybrid model is a computer model that takes the gross direct income in each applicable sector or sub sector (e.g. agricultural crops) and the percentage of the income in that sector attributable to open space to determine the direct income attributable to open space. The number of direct jobs and the indirect and induced income and jobs are then determined by the use of the multipliers derived from the IMPLAN model of the New Hampshire economy. The state and local tax revenues are in some cases directly available or are calculated using average tax rates in the model.

To illustrate the application of the model the example of the expenditure on ground transportation by tourists can be used. Based on sample surveys of visitors, the NH Travel Economics Report for 1996 estimates that visitors spent \$228,000,000 on ground transportation in New Hampshire. (See table 3 in this report). This includes all visitors, but the number that visit primarily for open space based activities can be estimated from the responses to a survey². The survey asked what activities the visitor engaged in. In that survey approximately 42% indicate that they are participating in outdoor open space based activities.

¹ Minnesota IMPLAN Group, IMPLAN Professional Users Guide, Minnesota IMPLAN Group Stillwater, Minnesota. 1997.

² Source: *New Hampshire Visitor Surveys 1997/1998*, New Hampshire Office of Travel and Tourism Development



Therefore \$95,760,000 of the total can be attributed to open space. Now using the IMPLAN multipliers the number of direct jobs can be estimated. The direct job multiplier is 11.7 jobs per million of expenditure which means that the direct jobs from \$95,760,000 of ground transportation is 1,122 jobs.

The spending of \$95,760,000 becomes the income of people working on ground transportation who in turn spend for their own needs creating further income for others. This is calculated by the total indirect and induced income multiplier derived from IMPLAN. The multiplier is 2.114 which means that \$95,760,000 of initial income from visitor spending becomes a total of \$202,436,000 in total income in the state. Similarly the indirect and induced jobs multiplier is 26.88 jobs per \$1 million of income which, when applied to an initial income of \$95,760,000 provides an estimate of 2,574 total direct and indirect jobs in the state. State and local taxes on the \$202,436,000 of income can be estimated at \$16,600,000 based on an average state income to tax ratio of 8 cents per dollar. This is an average estimate for the state. It does not imply that the 2,574 workers whose jobs are dependent on ground transportation spending will themselves pay that much tax.

THE LIMITATIONS OF ECONOMIC IMPACT ANALYSIS

Economic impact analysis can be helpful in policy making and planning, but it is not itself a decision-making tool. Policy makers must weigh the economic impact estimates along with other factors in making decisions. One important consideration is that the analysis only deals with impacts that are easily quantifiable in dollars or employment. Environmental, health, or social impacts are not normally assessed, even though they may have economic implications. Economic impact analysis also assumes linear relationships, or fixed coefficients, between changes in demand for products and services and the resulting changes in income and employment. It therefore does not take into account how specific businesses may increase their productivity over time, or with changing local circumstances. The analysis also assumes that the response to any incremental change in demand for goods or services is at the average rather than the marginal rate, which may not always hold true. Despite these limitations input output based economic impact analysis is the best tool available for estimating the economic effects of one or more specific economic activities on a state or regional economy.

ECONOMIC SECTORS AFFECTED BY OPEN SPACE IN NEW HAMPSHIRE

Open space supports the New Hampshire economy in two distinct ways. First, open space is the fundamental resource of the land based industries. The agriculture and forestry sectors of the economy are directly dependent on open space for the primary production of food and raw materials, and in turn the agricultural and wood products processing industries are dependent on the primary production. Second, open space is a key underpinning of the recreation and tourism economy. Open space, which includes lakes, farmland, forests, mountains, and wilderness, is one of the prime reasons why people visit New Hampshire as tourists. The recreation and tourism economy includes recreation-related expenditures by residents and non-residents. Furthermore, open space is a prime motivator in the selection of



New Hampshire for second homes. Therefore open space is the basis for agriculture, forestry and forest products, recreation and tourism, and second homes in New Hampshire.

This section provides a brief description of each of these economic sectors and their dependence on open space. Each section defines the limits of the economic sector that are considered in this analysis and the estimate of economic activity within each sector that is attributable to open space. In addition, this section describes other economic impacts of open space that cannot at present be quantified.

AGRICULTURE RELATED ACTIVITIES

Based on data provided by the New Hampshire Department of Agriculture the total sales of agricultural and horticultural products and services in the state in 1996/97 was \$413 million¹. Some parts of the total can be attributed entirely to open space based activities, but in the horticulture sector greenhouses and landscaping are not open space dependent, by the definition used in this study. Greenhouse production is excluded, although some greenhouses are temporary over the ground structures, because the data are not available to distinguish between these types of production. Table 1 below shows the estimated gross sales and sales attributed to open space for the agriculture sector.

Table 1 Agriculture Related Sales 1996/97

Agriculture & Products	Gross Sales	% Open Space	Open Space Attributed Sales
Agricultural production	\$117,900,000	100%	\$117,900,000
Ornamental Horticulture	\$150,000,000	20%	\$30,000,000
Processed Agricultural Products	\$125,000,000	50%	\$62,500,000
Livestock and Poultry	\$20,500,000	100%	\$20,500,000
Total Agriculture Related	\$413,400,000	68%	\$230,900,000

For the purposes of this analysis, we attribute 100% of primary agricultural production and livestock production to open space. The processing of raw products into value added products such as apple cider, yogurt, or cheese in New Hampshire, using in-state produced raw materials, would probably not take place if there were no agriculture and so it can be considered to be open space based. The processing of food or fiber produced out of state is not included. Informal estimates indicate that approximately 50% of the agricultural processing by value is dependent on in-state production. In the ornamental horticulture sector it is estimated, very approximately and based on only anecdotal information, that about 20% of the total sales are open space based. The remaining 80% is from greenhouses or involves landscaping products and services. Horse rearing sales are not included because of a lack of any reliable data on this activity.

¹ New Hampshire Dept of Agriculture, Markets and Food, Brochure including Summary Statistics of N.H. Agriculture, February 1997.



In 1996/97 the economic activity in the agricultural sector of New Hampshire is an estimated \$413 million with approximately \$231 million attributable to open space.

FOREST RELATED ACTIVITIES

The forestry sector of the economy has a set of production activities centered on the growing and harvesting of trees, and another set of production activities centered on adding value to forest products. For the purposes of this analysis, we consider open space to directly contribute to the forestry activities involving the growing, harvesting, and delivery of raw wood to processors and users. In addition, for the same reasons applied to the processing of agricultural products, the manufacturing of forest products such as lumber, plywood, and paper are considered also to be dependent on open space to the extent that the industry is primarily processing New Hampshire-grown wood. Thus, this analysis assumes that 100% of the economic activity involving forestry, logging, and trucking of raw wood and the manufacture of those raw materials into lumber, wood products, and paper products is attributable to open space.

Table 2: Forest Related Sales and Transactions 1996/97¹

Forestry Related Activities	Gross Sales	% Open Space	Open Space Attributed Sales
Stumpage fees paid to landowners	\$36,900,000	100%	\$36,900,000
Timber Tax	\$4,100,000	100%	\$4,100,000
Logging & Trucking	\$63,814,000	100%	\$63,814,000
Syrup and Xmas trees	\$4,200,000	100%	\$4,200,000
Lumber & wood products	\$323,600,000	100%	\$323,600,000
Paper & Allied Products	\$765,600,000	100%	\$765,600,000
Total Forest Related Industry	\$1,198,214,000	100%	\$1,198,214,000

The forest related industries of New Hampshire are estimated to have total direct sales and transactions, totaling almost \$1.2 billion in 1996/97, of which over \$1 billion came from the manufacturing of wood and paper products. The manufacturing of furniture, cabinets, boats, and prefabricated building components is not included because they typically include significant amounts of material derived from out of state and are therefore not dependent on open space in New Hampshire. The sales of wood chips are included in the estimate but the added value of steam or electric power produced by burning wood chips is not included².

TOURISM AND RECREATION

Tourism and recreation are a significant component of the New Hampshire's economy, second only to manufacturing in employment. Open space and its recreational activities

¹ Sources include the American Forest and Paper Industry Association, 1997, U.S. Dept of Commerce BEA Regional Economic Database and the NH Dept of Resources and Economic Development.

² The electric power produced by wood chips is a relatively recent activity and could easily be replaced with electricity derived from other fuels. The electric power is therefore not dependent on open space.



create an environment that attracts tourists to the state and is one of the major factors in maintaining the high level of tourist and recreational spending. Tourist spending in New Hampshire is almost twice the national average¹. In 1996, tourists directly spent \$2.66 billion in New Hampshire². According to visitor surveys, on average 42 percent of tourism is based on open-space activities in New Hampshire³. Using that percentage, it is estimated that \$1.05 billion of tourist spending is attributable to open space. In addition, some recreational activities are completely dependent on open space. Hunting, angling, and wildlife viewing, for example, generated \$685 million in direct expenditures in the state in 1996⁴ of which 100% is attributable to open space. Tourism and recreation based on open space, including wildlife related recreation, had expenditures totaling \$1.73 billion dollars in 1996/97⁵. Approximately 42,000 direct jobs are attributed to these activities. Table 3 gives the breakdown of the direct spending in the tourism and recreation category and the percentage of that spending which is attributable to open space in each category.

Table 3: Tourism and Recreation⁶

Tourism & Recreation	Gross Sales	% Open Space	Open Space Attributed Sales
Eating & drinking	\$668,670,000	42%	\$280,841,400
Accommodation	\$312,480,000	42%	\$131,241,600
Wildlife Related Recreation	\$685,000,000	100%	\$685,000,000
Other Recreation	\$372,000,000	42%	\$156,240,000
Food Stores	\$206,460,000	42%	\$86,713,200
Other Retail Stores	\$443,610,000	42%	\$186,316,200
Ground Transportation	\$228,000,000	42%	\$95,760,000
Services & Other Transport	\$262,260,000	42%	\$110,149,200
State Rooms and Meals Taxes	\$84,400,000	42%	\$35,448,000
State Revenue Licenses & Fees	\$70,680,000	42%	\$29,685,600
Total Tourism & Recreation	\$3,178,480,000		\$1,732,261,600

Apart from the recreation industries themselves, the largest direct beneficiaries of open space based tourist and recreation spending are eating and drinking establishments, who receive

¹ Source: *Fiscal Year 1996 Travel Economics Report*, New Hampshire Office of Travel and Tourism Development

² Source: *Fiscal Year 1996 Travel Economics Report*, New Hampshire Office of Travel and Tourism Development

³ Source: *New Hampshire Visitor Surveys 1997/1998*, New Hampshire Office of Travel and Tourism Development

⁴ Source: U.S. Fish and Wildlife Service, *1996 National Survey of Fishing, Hunting and Wildlife Associated Recreation- New Hampshire*, U.S. Fish and Wildlife Service, Washington DC, May 1998.

⁵ Total for all tourism and recreation from the source cited are higher than the numbers given in table 3 because the data used in this study have been adjusted to avoid double counting of wildlife related spending in overlapping data sources. The data sources for wildlife recreation are more current and comprehensive than for other outdoor recreation and may be considered more reliable. Other outdoor recreation source may have been slightly underestimated and recreation related retail expenditure in some cases is included in the general retail category.

⁶ Spending categories are from *Fiscal Year 1996 Travel Economics Report*, New Hampshire Office of Travel and Tourism Development. The 42% open space dependent percentage is estimated from the *New Hampshire Visitor Surveys 1997/1998*, New Hampshire Office of Travel and Tourism Development.



over \$280 million per year. Hotels, motels and campgrounds receive \$131 million and general retail and food stores together had sales of \$273 million related to outdoor recreation and open space based tourism. In addition equipment sales, including guns and boats, to those engaged in wildlife related activities totaled \$367 million, which is included within the total of \$685 million wildlife related spending in Table 3.

VACATION AND RECREATION HOMES

There are over 60,000 rural vacation and recreational homes in New Hampshire making up approximately 11% of all the homes in the state¹. Without the beauty of the open landscape, and recreational activities resulting from open space, the primary reasons why people buy second homes in New Hampshire would not exist. Therefore, the existence of vacation and recreation homes in New Hampshire can be considered to be directly attributable to the presence of open space. Hence, 100 percent of all economic activities from rural second homes have been attributed to open space.

Table 4: Vacation and Recreation Homes

Vacation and Recreation Homes	Gross Spending	% Open Space	Open Space Attributed Sales
Property Tax	\$234,012,000	100%	\$234,012,000
Real Estate Transfer Tax	\$4,401,000	100%	\$4,401,000
Real Estate Commissions	\$14,030,000	100%	\$14,030,000
Home Construction	\$75,340,000	100%	\$75,340,000
Utility and Maintenance Expenses	\$151,000,000	100%	\$151,000,000
Total	\$478,783,000	100%	\$478,783,000

The estimated value of vacation and recreational second homes is \$5.36 billion². The economic benefits resulting from these second homes are given in table 4 above. Revenues from the spending of second-home residents when they are on vacation in New Hampshire are not included in Table 4 but the revenue is included in the tourism and recreation estimate in Table 3. The estimated 1996 value of the direct spending on second homes is \$479 million³.

OTHER ECONOMIC ACTIVITIES AFFECTED BY OPEN SPACE

Although the four sectors described above account for most of the economic activity in the state that can be directly attributed to open space, there are other important economic effects that can be indirectly attributed to open space. These include:

¹ Extrapolated from the *US Census Bureau 1990 Census of New Hampshire*.

² Based on an estimated 60,000 homes at average value of \$89,000.

³ There is no current data available on the value or spending of second homes in New Hampshire. The estimate is based on the 1990 census data extrapolated to 1996/97 based on data from the US Census Bureau, the New Hampshire Department of Revenue Administration, the New Hampshire Association of Realtors, and the *Fiscal Year 1996 Travel Economics Report*, New Hampshire Office of Travel and Tourism Development.



- 1 Attraction of businesses to the state where the quality of life is an important factor for owners or employees.
- 2 Open space and a high quality environment make New Hampshire hotels and resorts attractive for conferences and other business activities.
- 3 Less traffic congestion resulting in fewer delays, lower transportation costs and lower insurance rates.
- 4 Open space and a high quality environment make New Hampshire an attractive location for retirement.

There are not sufficient data available to quantify most of these effects at present but they should be recognized as contributing to the economy.

ECONOMIC IMPACT MODEL RESULTS AND CONCLUSIONS

The economic impact model is a hybrid model that uses data from published and unpublished sources to estimate the direct expenditures for each activity. These data are from the sources as described in the previous sections of the report. The percentage contribution from open space has been determined with reference to surveys undertaken by the state and federal governments. These data are combined with the IMPLAN input/output model that is used to estimate the indirect and induced effects of the initial direct expenditures from each activity. The implementation of the hybrid model is in the form of a spreadsheet that combines the data and the multipliers from running IMPLAN.

RESULTS OF THE ANALYSIS

Using the direct expenditure estimates described for each sector above the model has been implemented to estimate the indirect and induced income, employment and tax revenues in New Hampshire. A summary of the results is presented in table 5 below.

Table 5: Summary of the Economic Impacts Related to Open Space Activities in New Hampshire 1996/97

	Gross Direct Income	Average % Attributed to Open Space	Attributed Direct Income	Attributed Direct Jobs	Attributed Direct & Indirect Income	Attributed Direct & Indirect Jobs	Attributed State & Local Tax Revenues
Agriculture Related	\$413,400,000	56%	\$230,900,000	3,669	\$376,915,800	5,467	\$30,907,096
Forest Related	\$1,198,214,000	100%	\$1,198,214,000	6,487	\$3,921,182,894	16,675	\$325,300,797
Tourism and Recreation	\$3,178,480,000	54%	\$1,732,261,600	41,661	\$3,067,152,265	64,002	\$249,417,502
Vacation Homes	\$478,783,000	100%	\$478,783,000	8,648	\$816,983,565	15,029	\$285,855,786
Total	\$5,268,877,000	69%	\$3,640,158,600	60,465	\$8,182,234,524	101,173	\$891,481,182



CONCLUSIONS

Open space is a direct underpinning of four economic sectors: agriculture, forestry, tourism and recreation, and second homes used for vacations and recreation. For each sector the availability of open space is a significant factor, and often the critical one, in determining the income, jobs and taxes derived from those sectors. The economic impacts of open space are summarized in Table 5 above. The results of the analysis show that open space based economic activities contributed \$8.2 billion per year to the New Hampshire economy in 1996/97. This amounted to over 25% of New Hampshire's gross state product in that year. There were over 100,000 jobs dependent on open space. The open space based economy is larger than the whole tourist industry and it is second only to manufacturing in terms of both income and employment. With an estimated \$891 million in state and local revenue generated, the open space based economy provided over 35 % of the total state and local tax revenues in 1996/97¹. The 5,265,000 acres of open space that cover 89% of the state² contribute to an average over \$1,500 per acre in direct and indirect state income. Some high value agricultural land, scenic areas, wildlife reserves, and lake front properties are especially valuable and contribute very much more to the economy.

Agriculture Related

Agriculture related activities have annual gross revenues of \$413 million. Of this total, \$231 million, or 56% of the total revenue, is dependent on open space as defined in this study. Greenhouses, ornamental horticulture, landscaping, and the processing of food produced outside the state are not considered to be open space related. The total direct and indirect impact on the state economy is \$377 million and this sector generates over 5,400 jobs.

Forest Related

Forestry based activities, including primary forest products, saw milling, and paper manufacturing, generate almost \$1.2 billion in gross revenues, all of which are open space based. When the indirect impacts are added, the total direct and indirect contribution to the state economy is \$3.9 billion making it the largest contributing sector in terms of total income. The forest sector generates over 16,600 jobs.

Tourism and Recreation

Tourism and recreation spending by residents and visitors was almost \$3.2 billion in 1996/97, including associated eating, drinking and accommodation. Of the \$3.2 billion it is estimated that 54% of the total expenditure, or \$1.7 billion, is based on open space related activities such as hunting, fishing, bird watching, hiking, skiing, and camping. When the indirect impacts are added, the total direct and indirect impact on the state economy is over \$3 billion and the sector generates over 64,000 jobs.

¹ Total state and local tax revenues were approximately \$2.4 billion in 1997. NH Dept of Revenue Administration.

² Source: U.S. Department of Commerce, *Statistical Abstract of the United States.1994.*



Vacation and Recreation Homes

Second homes in New Hampshire that are primarily for vacation and recreational use generate \$479 million in annual spending, all of which is open space related. This includes property tax payments, utilities, construction, repair, and renovation, but not the tourism or recreation related expenditures of the owners or renters, as these expenditures are included in the tourism and recreation sector. The total direct and indirect impact on the state economy is \$817 million and the sector generates over 15,000 jobs.

Overall the estimates in this study are conservative because they do not include the contribution of open space in attracting and retaining businesses and retirees, or the increase in property values that may occur in proximity to open space. The four sectors that have been quantified together produce \$3.5 billion in direct expenditures and generate a total direct and indirect impact of \$8.2 billion. Of this total about \$4.4 billion is generated by primary open space activity, such as agricultural crop production, timber production, and outdoor recreation. About \$3.8 billion is generated by secondary activities such as saw milling, paper manufacture, and agricultural food processing, based principally on New Hampshire-grown raw materials.

The magnitude of the contribution of open space to the state economy demonstrates how important open space is to the well being of the people of New Hampshire and why open space should be a continuing issue of public policy concern.



**Cost of Community Services Study
Town of Peterborough, New Hampshire**

**By Scott MacFaden, Environmental Studies Graduate Student, Antioch New England
Sponsored by the Peterborough Conservation Commission and SPACE
(Statewide Program of Action to Conserve the Environment)**

Winter, 1996-97

The purpose of the Peterborough Cost of Community Services study is to provide municipal officials and town residents with an enhanced understanding of the relationships between land use types and the demands for municipal services. Developed by the American Farmland Trust, a non-profit organization dedicated to preserving the nation's agricultural resources, COCS studies reorganize a town's annual budget to reflect the demand for services generated by three major land use types: Residential, Commercial/Industrial, and Open Space. The Peterborough Cost of Community Services (COCS) study joins an expanding body of such studies in New Hampshire. A summary of their findings is provided by the chart below.

As a complement to Peterborough's COCS study, a comparison of the annual school costs with the school tax revenues for the town's Pine Ridge neighborhood is included.

N.H. COMMUNITY	LAND USE CATEGORY	REVENUE	EXPENDITURE	\$1 RATIO
Peterborough 1995	Residential	9,107,925	9,874,851	1.00 : 1.08
	Commercial/Industrial	2,706,479	835,360	1.00 : .31
	Open Space	80,482	43,649	1.00 : .54
Exeter 1996	Residential	18,381,935	19,613,525	\$ 1.00 : 1.07
	Commercial/Industrial	4,108,028	1,654,775	1.00 : .40
	Open Space	109,588	89,803	1.00 : .82
Fremont 1994	Residential	3,317,928	3,457,376	1.00 : 1.04
	Commercial/Industrial	69,798	65,325	1.00 : .94
	Open Space	19,188	6,835	1.00 : .36
Deerfield 1994	Residential	4,878,823	5,630,510	1.00 : 1.15
	Commercial/Industrial	531,547	119,209	1.00 : .22
	Open Space	57,679	20,155	1.00 : .35
Dover 1992	Residential	19,317,362	22,124,828	1.00 : 1.15
	Commercial/Industrial	6,178,059	3,905,609	1.00 : .63
	Open Space	488,628	457,661	1.00 : .94
Stratham 1994	Residential	6,939,002	7,957,296	1.00 : 1.15
	Commercial/Industrial	1,339,275	256,696	1.00 : .19
	Open Space	20,498	8,132	1.00 : .40

The results of Peterborough's Cost of Community Services study do not differ dramatically from the results of the other studies completed in New Hampshire. For all land use categories, a consistency of results is discernible. In all six studies, the costs of providing services to the Residential land use category exceed the revenues generated by this land use type. In contrast, the revenues generated by the Commercial/Industrial and Open Space land use categories exceed the costs required to provide them with services.

The revenue/expenditure ratios for the Open Space land use category in Peterborough and Dover reflect the liberal share of the public safety budget apportioned to it in both communities. In the Peterborough study, we included federal and state lands in our definition of the Open Space category; our inclusive definition of this land use type thus included the federally-owned MacDowell Dam and Reservoir, and the state-owned Miller State Park and Casalis State Forest. In the other five COCS studies, the Open Space land use category encompassed only those lands currently enrolled, or eligible to be enrolled, in the Current Use Program.

In Dover, 15% of the entire fire department budget was apportioned to the Open Space land use category for the year analyzed; other COCS studies have found much lower percentages for similar expenditures (Annett et al., 1993). In Exeter, the revenue/expenditure ratio for Open Space was inflated by the extensive use of "fallback expenditures" in apportioning expenditures for this land use category (Niebling, 1997). Fallback percentages are based on the portion of property tax revenues raised by each land use category and are employed when a lack of information precludes the accurate apportionment of expenditures and revenues across land use categories. It is likely that many of the expenditures attributed to open space in Exeter were overstated the by reliance on fallback percentages.

Based purely on the findings of five of the six COCS studies completed thus far in New Hampshire, it would appear that communities should actively promote Commercial/Industrial development. With the exception of Fremont, the revenue/expenditure ratios for this land use category indicate that the direct costs of providing it with services are significantly exceeded by the revenues generated.

Research conducted in both New England and the Midwest, however, strongly suggests that the cumulative, longer-term impacts of Commercial/Industrial development are not reflected in the short-term context of a COCS study. Ad-Hoc Associates' comprehensive investigation of all New Hampshire and Vermont towns discovered that the tax bill on the median-value house is more likely to be higher rather than lower in towns that have more commercial and industrial taxable property (Ad-Hoc Associates, 1994). This is primarily attributable to the increased Residential growth that is spawned by Commercial/Industrial development.

In Illinois, the DuPage County Regional Planning Commission found that the largest single contributor to personal property tax increases throughout the county is new non-residential development. The Commission's study found that non-residential development has three times more impact on increasing property tax levies than does Residential development. This is primarily due to the increasing demands for services that accompany Commercial/Industrial growth (DuPage Regional Planning Commission, 1991).

It has also been found that Commercial/Industrial developments do not appreciate in value as rapidly as Residential or Open Space properties. A commercial development which represented 10% of the tax base initially may, over time, represent only 5% of the tax base--attributable only to differences in rates of appreciation (Ad-Hoc Associates, 1994).

This is not to suggest that Commercial/Industrial development should be evaluated solely on the basis of tax considerations. In the broad spectrum of planning decisions, a multitude of non-tax variables also determines the ultimate value of Commercial/Industrial development to a community.

Open Space lands, conversely, have been found to provide a net economic benefit to communities. The modest tax revenues generated by Open Space lands have consistently exceeded the expenditures required to provide them with the limited services they demand. In addition, Open Space lands help to stabilize property tax rates; in communities with more undeveloped land per year-round resident, it has been demonstrated that the tax bill for the median-value house is lower, on average (Ad-Hoc Associates, 1994).

In addition, when considered in a non-tax context, the benefits of Open Space lands are many. The most obvious include providing essential habitat for wildlife as well as the scenic beauty essential to many people who live in the region. More subtle are aquifer protection, air and water quality, flood control... This list is long.

CONCLUSION

It is hoped that the collected body of Cost of Community Services studies will encourage reflection and discussion among Peterborough residents and officials. While the studies prescribe no particular course of action, and make no specific recommendations, they do provide baseline information about the direct costs and benefits attributable to different land use types. This information can be of considerable use to the community; community planners and municipal officials can incorporate the studies' findings into their planning efforts, and residents can enhance their understanding of the possible tax implications of development trends.

Population projections for Peterborough and adjoining communities foreshadow enormous changes in the demographic, economic, and social character of the region. It behooves communities in the region to be prepared for the next wave of population and economic growth.

Addendum:

Community Profile, Study Methodology and Spreadsheets; and Pine Ridge Neighborhood Study

COMMUNITY PROFILE

Peterborough is located in the Southwest Region of the state, approximately equidistant between Keene and Nashua. It is primarily residential/rural in character, with commercial uses concentrated in the downtown area. A more diverse mix of commercial and industrial uses is located along Route 202 in North and South Peterborough.

The town's total land area is 24,640 acres; in 1995, the subject year for our studies, 13,780 acres were enrolled in the Current Use Program, constituting 55% of the town's total acreage. Of the 13,780 acres enrolled in the Current Use Program, 11,727 acres were forest land, 1,050 were wetlands, 962 acres were farmland, 27 acres were held as discretionary easements, and 12 acres were classed as unproductive land. Two hundred and thirty property owners were granted the Current Use assessment.

The town's population increased from 4,895 in 1980 to 5,239 in 1990; the estimated population for 1995 was 5,614 (Peterborough Master Plan, 1992). Of the two population projections in the Master Plan, this is the more conservative estimate, based on a moderate projected growth rate. The total number of housing units in town in 1990 was 2,242; 62% of these were single-family, 36% were multi-family, and 1% were mobile homes (Master Plan, 1992).

STUDY METHODOLOGY: Cost of Community Services Study Approach

The methodology used in this study was developed by the American Farmland Trust in 1986. The AFT is a private conservation organization devoted to protecting agricultural resources. It developed the Cost of Community Services methodology in response to persistent claims that:

- (1) Residential development will lower property taxes by increasing the tax base;
- (2) Farmland and forest land receive unfair tax breaks when they are assessed at their actual uses for agriculture and forestry instead of their potential use for development;
- (3) Open lands, including productive farms and forests, are interim uses awaiting conversion to their "highest and best use" (American Farmland Trust, 1993).

COCS studies are designed to study the contribution that working lands make to the local tax base. They determine, in the context of a community's annual budget, the demands on public services by comparing annual revenues to annual expenditures. There are five steps to the completion of a COCS study:

- (1) **Meet with local sponsors and define land use categories.** The meeting initiating the Peterborough study included Francie Von Mertens of the Conservation Commission and Pam Andrade, Town Administrator. In addition to defining the land use categories to be used in the study, the applicable study year was selected -- 1995, the most recent year with closed financial records. The land use categories were defined as follows:

Residential -- property used for dwellings, including farmhouses, employee housing, and rental units;

Commercial/ Industrial -- property actively used for business purposes and wholesale production and utilities, excluding agriculture and forestry;

Open Space -- property used or designated as open space, forest, farmland, or recreational land (excluding town-owned land).

Unlike the other COCS studies conducted in New Hampshire, we included lands in the town owned by federal and state entities. Our definition of this category thus combines all lands enrolled in the Current Use Program with areas such as the federally-owned MacDowell Dam and Reservoir, Miller State Park and Casalis State Forest.

(2) **Data collection: Obtain relevant reports, contact officials, boards and departments** The 1995 Annual Town Report provided a budgetary baseline. The MS-1 Form, and Summary Inventory of Valuation, proved to be especially informative in calculating the tax revenue attributable to each land use category. This form also provided a detailed breakdown of lands enrolled in Current Use in 1995. Contact was initiated with the leaders of departments whose budgets could not be apportioned without detailed information. Departments meeting this criteria included Police, Fire and Public Works.

(3) **Allocate revenues by land use.** The amount of revenue attributable to each land use category was determined by multiplying the applicable tax rate (\$30.43) by the total assessed value for each land use type. Timber yield taxes and flood control reimbursement revenues were apportioned to the Open Space category. Revenues that could not be divided by land use, such as Income from Departments and Interest on Investments, were apportioned using "fallback percentages" (based on the portion of property tax revenues raised by each land use category).

(4) **Allocate expenditures by land use.** This phase of the study contained the most complex and time-consuming tasks. It was necessary to conduct a comprehensive examination of police and fire department records to correctly apportion their budgets to the three land use categories. The Public Works Department was contacted to determine the road mileage figures applicable to the Residential and Commercial/Industrial categories. Some department budgets required little deliberation before apportioning them; the Human Service, Culture, and Education budgets were all directly apportioned to the Residential category. As with revenues, those department budgets that could not be divided by land use were apportioned using fallback percentages.

(5) **Analyze data and calculate ratios.** The revenue/expenditure ratio for each land use category was calculated by dividing the total expenditures by the total revenues. The following three pages contain the spreadsheets detailing the Peterborough Cost of Community Services study:

Pine Ridge Neighborhood Study, Peterborough, NH; A Comparison of School Costs vs. School Tax Revenues

PURPOSE

As a complement to the Peterborough Cost of Community Services study, a comparison was made of the costs of educating one neighborhood's children with the tax revenues generated by that neighborhood. The purpose of this study is give more concrete shape to the costs of Residential development as revealed by the Cost of Community Services study. The neighborhood chosen for study was the Pine Ridge neighborhood. Located in North Peterborough, Pine Ridge consists of 118 single-family homes. In 1995, the study year, the average assessed value for properties in the neighborhood was \$125,768.

METHODOLOGY

The town tax maps and the map and lot index were used to compile the map and lot numbers and property owners for each parcel. The assessed value and total tax obligation for each property were obtained from the 1995 Tax Commitment Book. The average assessed value and the average tax obligation for the neighborhood were then calculated.

The SAU office of the Conval School District provided information on Peterborough's school enrollment. Of the 971 Peterborough students attending district schools in 1994-95, 62 were from Pine Ridge. The average number of students per single family home was calculated by dividing the total number of students in the neighborhood by the total number of households in the neighborhood. The average cost-per-pupil was determined by dividing Peterborough's total educational expenditure for 1995 (\$6,485,000) by the total number of students (971). The average cost-per-household for education was calculated by multiplying the average number of students-per-household by the average educational cost-per-student. The total costs of education for the neighborhood was then compared with the total school tax revenue produced by the neighborhood. The process is detailed as follows:

School costs per Conval district student	= \$6,678.68
(Average number of students per Pine Ridge household = .52)	
School costs per Pine Ridge household	= \$3,472.91
Average assessed value of Pine Ridge properties	= \$125,768.81
Average <u>total tax</u> revenue per Pine Ridge household	= \$ 3,827.14
Average <u>school tax</u> revenue per Pine Ridge household	= \$ 2,384.57
(Average town tax revenue = \$1,159.58; and county tax revenue = \$282.97)	
School costs vs. school revenues per household	= \$ 1,088.34 (-)
Total 1995 School Costs, Pine Ridge neighborhood	= \$409,803.38
Total 1995 School Tax Revenues " "	= \$281,379.26
Annual neighborhood school costs shortfall	= (\$128,424.12)

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Town of Peterborough Conservation Land

Parcel ID #	Owner of Record	Acres	Protection Type	Protected Acreage	Special Conditions
R011-041-000	Walcott Cons Ease (RR ROW)	7.17	Conservation Easement	0	Walcotts to Pboro
R011-035-000	Pboro Cons Land	4.21	Town Land	4	
R011-041-000	Walcott Cons Ease (RR ROW)	15.27	Conservation Easement	146	Walcotts to Pboro
R011-042-000	Walcott Cons Ease (RR ROW)	93.58	Conservation Easement	0	
R011-016-000	Daloz	38.35	Conservation Easement	40	
R011-039-000	Walcott Cons Ease R-11-39,41,42	1.68	Conservation Easement	0	Walcotts to Pboro
R011-039-000	Walcott Cons Ease R-11-39,41,42	27.98	Conservation Easement	0	Walcotts to Pboro
R011-038-000	STEPHENSON	27.40	Conservation Easement	27	
R011-016-100	Swamp Woods (Pboro Conservation land)	8.00	GIFT FROM DALOZ FOR CONSERVATION	8	
R012-015-200	PBORO LAND	8.14	PBORO CONS LAND	8	
R011-037-000	Ridgewood Hts	56.53	Conservation Easement	80	
R011-037-000	Ridgewood Hts	56.53	Conservation Easement	0	
R011-037-000	Ridgewood Hts	56.53	Conservation Easement	0	
R012-061-000	Tax Deed Land -OS?? (BABINE LOT)	47.36	Town Land	0	
R011-025-100	Pboro Cons Land	8.30	Town Land	0	
R010-012-001	Eldredge	29.26	Conservation Easement	0	
R011-025-000	Pboro Cons Land	40.16	Town Land	0	
R012-060-000	Tax Deed Land -OS?? (WHEELER LOT)	66.14	Town Land	0	
R011-055-000	D'Addamio/Jones Cons Ease	101.19	Conservation Easement	99	
R011-045-000	HARRIS CENTER	12.02	HARRIS CENTER Holding	12	
R011-011-500	Pboro Cons Land (Beaman Lumber)	21.26	PBORO CONS LAND	21	
R010-012-001	Eldredge	60.50	Conservation Easement	56	
R011-050-000	Pboro Land Associates- RESTRICTED DEED	3.38	Water Dept. (Pboro Land Associates)	3	Restricted Deed-Warranty Deed to Water Dept.
R011-049-000	POPLAR PLACE	28.00	POPLAR PLACE/PBORO CONS LAND	28	Quitclaim Deed from The Poplar Associates

Town of Peterborough Conservation Land

Parcel ID #	Owner of Record	Acres	Protection Type	Protected Acreage	Special Conditions
R011-044-000	HARRIS CENTER	1.88	HARRIS CENTER Holding	2	
R010-013-000	Green	45.73	Conservation Easement	42	
R011-004-100	BROWN/PBORO PLAYERS Cons Ease	10.81	Conservation Easement	11	BLDGS ALLOWED FOR THEATRE USE
R008-012-001	Wardwell/Cheney Cons Ease	57.50	Conservation Easement	53	
R008-010-000	Dubois	25.00	Conservation Easement	30	
R008-013-000	Simonds/Wollett Cons Ease	17.81	Conservation Easement	0	
R008-014-000	SIMONDS-DUBOIS	57.96	Agricultural Preservation Easement	0	AGRICULTURAL PRESERVATION RESTRICTION
R010-014-103	MILLON	106.40	Conservation Easement	82	
R008-013-000	Simonds/Wollett Cons Ease	43.90	Conservation Easement	39	
U008-027-000	PBORO CONS LAND	1.09	Donated for Conservation	0	No Cons Ease
U008-027-000	PBORO CONS LAND	0.06	Donated for Conservation	3	No Cons Ease
U008-027-000	PBORO CONS LAND	0.70	Donated for Conservation	0	No Cons Ease
U005-026-000	Shieling State Forest	47.89	Shieling State Forest	48	Shieling State Forest
R005-016-000	Fellows	171.78	Conservation Easement	112	Cons Easement only on 112 ac of 170ac+ parcel
R006-042-000	PETERSON expires 2014	43.00	Conservation Easement expires 2014	0	
R006-046-100	PETERSON/DEVINNE expires 2014	37.00	Conservation Easement expires 2014	0	
U027-012-000	HALL PROPERTY	56.21	PBORO CONS LAND	56	
R005-007-000	WHEELER	158.59	Conservation Easement	166	
U027-024-000	HALL PROPERTY	48.95	PBORO CONS LAND	49	
R006-046-100	PETERSON/DEVINNE expires 2014	15.04	Conservation Easement expires 2014	0	
R006-007-000	KANE	14.67	Conservation Easement	0	

Town of Peterborough Conservation Land

Parcel ID #	Owner of Record	Acres	Protection Type	Protected Acreage	Special Conditions
R006-003-000	KANE	43.03	Remarks say "Conservation Easement"	178	
R006-046-100	PETERSON/DEVINNE expires 2014	37.00	Conservation Easement expires 2014	0	
U023-024-100	HARRIS CENTER Land	2.01	HARRIS CENTER Holding	2	
R006-049-100	KANE	42.87	Conservation Easement	310	
R004-013-000	CONNARD/MONAHON	56.70	Conservation Easement	52	
R006-006-000	KANE	7.95	Conservation Easement	0	
R004-013-100	MONAHON Cons ease	33.50	Conservation Easement	0	
U023-024-000	HARRIS CENTER Land	1.35	HARRIS CENTER Holding	1	
R004-013-200	MONAHON/MACNAUGHT	32.80	Conservation Easement	30	
R004-016-000	MONAHON	91.51	Conservation Easement	71	
R005-007-000	WHEELER	6.15	Conservation Easement	0	
U002-040-000	PBORO CON LAND (NIEMELA)	22.02	PBORO CONS LAND	22	
R001-033-000	KANE	41.80	Conservation Easement	0	
R001-031-000	KANE (CONS EASE ON PART OF LAND)	79.94	Conservation Easement	0	Discretionary easement 48ac + ?
R004-032-000	MONAHON	43.23	Conservation Easement	41	
R004-015-000	MONAHON	44.80	Conservation Easement	45	
R001-029-000	PBORO CONS LAND (KANE)	120.00	PBORO CONS LAND	120	
U001-002-100	PBORO CON LAND (FERNALD)	12.90	PBORO CONS LAND	13	
U019-047-000	Pearson/Laroche Cons Ease	8.00	Conservation Easement	8	
R001-032-000	KANE	115.13	Conservation Easement	0	
R004-004-001	CUTTER Land for conservation (LCIP)	151.00	Purchased for Conservation	151	Purchased for Conservation with LCIP funds
R001-019-000	MILLER STATE PARK	87.46	MILLER STATE PARK	0	

Town of Peterborough Conservation Land

Parcel ID #	Owner of Record	Acres	Protection Type	Protected Acreage	Special Conditions
R001-030-003	MALCOLM	3.00	Conservation Easement	6	
R002-041-000	BASS #1	46.00	Conservation Easement	0	
R001-018-000	THE NATURE CONSERVANCY LAND	30.92	Nature Conservancy Holding	0	
R002-043-000	CARTER/CHOLLET	152.66	Conservation Easement	163	
R004-002-000	CARTER/CHOLLET	25.64	Conservation Easement	0	
R002-041-000	BASS #1	1.21	Conservation Easement	0	EXCEPT 20 ACRES: BLDGS, YARDS
R002-042-000	BASS #1	72.77	Conservation Easement	0	EXCEPT 20 ACRES: BLDGS, YARDS
R002-041-001	BASS #1	15.78	Conservation Easement	0	EXCEPT 20 ACRES: BLDGS, YARDS
R001-028-000	PBORO CONS LAND (KANE)	15.00	GIVEN TO TOWN UNDER CONS COMM 4/76	15	Quitclaim deed from Mrs. Kane to Pbor Cons Comm
R004-004-006	FREMONT FIELD	21.50	PBORO CONS LAND	21	FREMONT FIELD
R001-017-001	MILLER STATE PARK	5.72	MILLER STATE PARK	0	
R002-042-002	BASS #1	59.13	Conservation Easement	164	EXCEPT 20 ACRES: BLDGS, YARDS
R002-037-000	CLEMENT	141.16	Conservation Easement	19	
R002-045-000	BASS #2	51.00	Conservation Easement	51	
R002-034-000	CASALIS STATE FOREST	212.37	CASALIS STATE FOREST	212	CASALIS STATE FOREST
R002-049-000	UPLAND FARM CONS EASE	59.37	Conservation Easement	60	
R003-039-100	MOORE	4.25	Conservation restricted	5	CONSERVATION RESTRICTION
R003-007-001	MOORE FARM CONS EASE	57.94	Conservation Easement	65	
R001-017-001	MILLER STATE PARK	9.01	MILLER STATE PARK	0	
R002-052-000	MORISON	109.60	Conservation Easement	115	
R003-007-002	MOORE FARM CONS EASE	10.72	Conservation Easement	0	

Town of Peterborough Conservation Land

Parcel ID #	Owner of Record	Acres	Protection Type	Protected Acreage	Special Conditions
R002-032-000	MORISON	5.89	Conservation Easement	0	
R002-021-000	BROSS	93.75	Conservation Easement	80	100 acres in Sharon
R003-025-000	Woodmaster/Fezette	75.00	Conservation Easement	38	
R002-031-000	BROSS	13.46	Conservation Easement	0	
R003-009-200	WOODS	49.80	Conservation Easement	49	
R002-026-000	BROSS	73.23	Conservation Easement	0	
R003-047-000	LAND	9.11	Conservation Easement	0	Open to Public only on Drury/Spaulding Road
R003-043-000	LAND	102.35	Conservation Easement	0	Open to Public only on Drury/Spaulding Road
R003-046-000	LAND	52.79	Conservation Easement	0	Open to Public only on Drury/Spaulding Road
R003-044-000	LAND	38.96	Conservation Easement	198	Open to Public only on Drury/Spaulding Road
R011-057-048	Messina		PBORO CONS LAND	0	
R011-057-036	Messina		PBORO CONS LAND	0	
R011-057-037	Messina		PBORO CONS LAND	0	
R011-057-038	Messina		PBORO CONS LAND	80	
R011-057-039	Messina		PBORO CONS LAND	0	
R011-057-040	Messina		PBORO CONS LAND	0	
R011-057-041	Messina		PBORO CONS LAND	0	
R011-057-037	Messina		PBORO CONS LAND	0	
R011-057-045	Messina		PBORO CONS LAND	0	
R011-057-047	Messina		PBORO CONS LAND	0	

Town of Peterborough Conservation Land

Parcel ID #	Owner of Record	Acres	Protection Type	Protected Acreage	Special Conditions
R011-057-044	Messina		PBORO CONS LAND	0	
R011-057-043	Messina		PBORO CONS LAND	0	
R011-057-049	Messina		PBORO CONS LAND	0	
R011-057-042	Messina		PBORO CONS LAND	0	
U011-006-000	Water Dept		Water Dept	10	
U011-012-000	Water Dept		Water Dept	29	
U011-012-000	Water Dept		Water Dept	10	
U014-011-000	Water Dept		Water Dept	5	
U014-010-000	Water Dept		Water Dept	1	
R005-017-000	Reynolds Drive CD-Open Space		Water Dept	19	
R012--013-003	Brian Road Common OS		Pboro Cons Land	2	Common Area-Open Space
R001-012-000	Monadnock Conservancy Holding		Monadnock Conservancy Holding	13	
R010-016-000	MacDowell Lake		MacDowell Flood Control	338	FLOWAGE EASEMENT
R009-025-000	MacDowell Reservoir		MacDowell Reservoir	370	MacDOWELL LAKE
U002-045-000	Town Own OS		Pboro Cons Land	1	Town OS
R010-014-101	Von Mertens Cons Ease	189.53	Conservation Easement	163	
R012-049-000	Raymond Cons Ease Otter Brook		Conservation Easement	12	
U023-022-000	Enguess	1.57	Pboro Cons Land	2	
TOTALS		4,672.25		4,585	

NOTE: Acreages are calculated from tax maps. Protected lands are taken from deeds or other available evidence.

Links to References for Open Space Chapter

The Economic Importance of New Hampshire Forests

www.nefainfo.org/publications/nefanh.pdf

The Economic Impact of Open Space in New Hampshire

www.rsginc.com/resources/publications/documents/economic_impact.pdf

Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire

www.spnhf.org/explor/library/Research/goodforestry.pdf

New Hampshire Everlasting: An Initiative to Conserve Our Quality-of-Life

www.spnhf.org/explor/library/Research/nneverlasting.pdf

Chapter 6: Traffic & Transportation

- NH DOT Memorandum of Agreement for Coordinating Highway Access Management
- Access Management Techniques
- NH DOT Suggested Minimum Design Standards for Rural Subdivision Streets
- Summary of Various Traffic and Transportation Studies for Peterborough
- Links to Traffic and Transportation Information

DRAFT

**MEMORANDUM OF AGREEMENT
FOR COORDINATING HIGHWAY ACCESS MANAGEMENT BETWEEN NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION AND TOWN OF _____**

This Memorandum of Agreement is made between the State of New Hampshire, Department of Transportation (hereinafter referred to as 'DEPARTMENT') and the Town (or City) of _____ (hereinafter referred to as TOWN (or "CITY")) and entered into on (date).

The Parties to this agreement witness that;

WHEREAS, the DEPARTMENT has the statutory responsibility and permitting authority, under RSA 236, to issue driveway access permits on state highways; and

WHEREAS, the TOWN, has the statutory authority under RSA 674 to enact zoning and building ordinances, subdivision, and site plan review regulations to regulate the use and site development of property adjoining the highway; and

WHEREAS, the DEPARTMENT and the TOWN mutually recognize the necessity to plan and coordinate fixture land use and access to highways that will experience further development on adjacent land, in order to preserve highway capacity and public safety, and;

WHEREAS the DEPARTMENT and the TOWN mutually recognize and agree that the preservation of the safety and capacity of state highways is in the public interest,

THEREFORE, BE IT RESOLVED, that the following provisions of this Memorandum of Agreement are agreeable to all parties;

Article I: Statement of Purpose

The DEPARTMENT and Town of _____ enter into this agreement to promote the coordination and management of land use and access to state highways within the Town. For the purposes of this agreement, access management shall include coordination in the planning, design, limitation, control, and determination of access points to facilities, and in the issuance of driveway access permits.

Article II: Scope of Agreement -

The provisions of this agreement shall apply to all state highways or segments of state highways located within the TOWN.

Article III: Joint Responsibilities

1. It shall be the joint responsibilities of the DEPARTMENT and the TOWN to develop and adopt agreed upon procedures for the joint review of site plan approval and driveway access permits.
2. The TOWN and the DEPARTMENT may establish an Access Management Technical Review Committee for the purpose of conducting the joint review of development site plans and review of driveway access permit applications to determine their conformance to state and local access management plans and standards.

Article IV: Responsibilities of the TOWN

- I. The Town shall develop, adopt, and -enforce access management standards on state highways that conform with best practices for access management. These standards may take the form of zoning ordinances, site plan review regulations and requirements, roadway construction standards, or a combination of these, and shall be applied to all subsequent development and redevelopment of land accessing state highways. Such standards shall be developed with assistance from, and in consultation with, the DEPARTMENT. Copies of all such standards, and subsequent amendments thereto, shall be provided to the DEPARTMENT to be kept on file at the Central and District Offices.
2. Where appropriate and necessary as determined by the Town, the Town may develop, in cooperation or consultation with the DEPARTMENT, adopt, and amend site or parcel-specific access management plans for specific highway corridors or segments. Such plans shall define the number, as well as, general location and design of future access locations to be permitted on specific parcels or sites. The plans, and any subsequent amendments thereto, shall be forwarded to the DEPARTMENT to be kept on file at the Central and District Offices.
3. The Town shall notify the DEPARTMENT District Engineer upon receipt of any development proposal or change of use that will require a state driveway access permit and solicit input regarding access design.
4. The Town shall require that driveway access(es), including type, design, number, and location, be permitted only in accordance with its adopted access management standards and any applicable site-specific access plans.
5. In the event that waivers or variances to the adopted access management standards or plans are proposed, the Town shall inform the DEPARTMENT of such Waivers or variances prior to local approval of the plans. Notice will be made prior to the issuance of the local approval and with sufficient time to allow for comment from and consultation with the DEPARTMENT.

Article V: Responsibilities of the DEPARTMENT

1. **The DEPARTMENT** shall provide information, technical assistance, and advice to the TOWN in the development of local access management standards and site or parcel level access management plans.
2. **The DEPARTMENT** shall agree to abide by the adopted site specific access management requirements of the Town to the extent that they are consistent with safe and efficient highway design and with the policies of the Department. Accordingly, the DEPARTMENT shall not approve driveway permits that do not conform to local access management standards or plans, except with the consent of the TOWN.
3. **The DEPARTMENT District Engineer** shall notify the TOWN upon receipt of any application for driveway access permit and shall transmit a copy of such application to the Planning Board of the TOWN.
4. **The DEPARTMENT District Engineer** shall withhold final action on any driveway access permit application for a proposed development until the TOWN Planning Board has formally approved the access plan for that development.

5. **The DEPARTMENT District Engineer** shall notify the TOWN if there is intent to issue a driveway access permit that is not in conformance with the adopted access management standards or parcel-specific plan. Such notice will be made prior to the issuance of the permit and with sufficient time to allow for comment from and consultation with the Town.

Article VI: Effective Date and Amendments to Memorandum of Agreement

1. This Agreement shall become effective upon execution by the DEPARTMENT and the TOWN and shall remain in force until terminated under provisions of Article VII, or until superseded by a new agreement.
2. This Agreement may be amended from time-to-time as facts or circumstances warrant or as may be required by state or federal laws, administrative regulations, or other orders or guidelines having the full force and effect of law.

Article VII: Termination of Agreement

The DEPARTMENT or TOWN may terminate this Agreement by giving ninety (90) day written notice of such termination to the other party.

IN WITNESS WHEREOF, the parties have hereto caused this Agreement to be executed by their proper officers and representatives.

FOR THE TOWN OF
Planning Board
Date

FOR STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION:
District Engineer
Commissioner
Date
Chair
Board of Selectmen
Chair

ACCESS MANAGEMENT TECHNIQUES

1. Distance Between Driveways

Requiring a minimum distance between driveways limits the number of access points that a driver must be aware of and reduces the opportunities for conflicts between turning vehicles and through traffic. This issue can be addressed in Subdivision and Site Plan Review regulations with a requirement that links the distance between driveways to the posted speed limit of the adjacent road.

Posted Speed Limit	Minimum Spacing
35mph	150 feet
40 mph	185 feet
45 mph	230 feet
50 mph	275 feet

Source: "Access Management for Streets and Roads" Federal Highway Administration, 1982, as adapted by Route 16 Corridor Study.

2. Corner Lot Access

Access from corner lots should be from adjacent collector or local roads, not the adjacent arterial. Planning Boards should incorporate this requirement into both Subdivision and Site Plan Review regulations. This regulation could be waived in situations where the applicant can demonstrate that such an access to the site is unsafe, would not function properly, or is not possible due to some physical characteristic of the parcel.

3. Number of Driveways per Lot

Reducing the number of accesses to arterials reduces the number of conflict points for vehicles and gives drivers a greater opportunity to react to vehicles entering and exiting the road. This issue can be addressed in the Zoning Ordinance, Subdivision Regulation and Site Plan Review regulations. In the Zoning Ordinance a town can adopt an overlay district limiting the number of driveways per parcel. Subdivision regulations can require that access to arterials be combined wherever possible at the time of subdivision. Site Plan Review regulations can limit the number of accesses along specified arterials.

4. Shared Driveways

Combined access points for residential and non-residential sites reduces the number of points where turning vehicles and through-traffic conflict. A single access point can easily serve two lots, and can occasionally serve three or more parcels. Planning Boards should include a provision in their Subdivision and Site Plan Review regulations requiring shared driveways on selected roads in their community. The provision should include requirements for the necessary easements and maintenance agreements. This regulation could be waived if the applicant demonstrates that a shared driveway is unsafe or not feasible because of the geometry of the site.

5. Interconnections Between Developments

Interconnected non-residential sites allow employees and customers to move from site to site without repeatedly entering and exiting the arterial. Site Plan Review regulations should include language requiring developers to provide an easement across their property to an adjacent site. When the adjacent site is eventually developed, the easement can be used to connect the two sites with a service road and pedestrian facilities allowing customers to move from site to site on foot or in their vehicle. Subdivision

regulations should require that developers connect to adjacent development roads, or require that a right of way be provided to the adjacent site, so a connecting road can be constructed when the neighboring lots are permanent cul-de-sacs and “single point of entry” developments should be discouraged.

6. Driveway Throat Length

Non-residential driveway entrances should be designed to prevent vehicles on the arterial from backing up while waiting to access the site. Providing adequate depth, or “throat length”, at the driveway entrance, provides vehicles with sufficient maneuvering space on-site to move away from the entrance and allow other vehicles to efficiently enter or exit the site. Throat length is an issue that can only be addressed as part of Site Plan Review. Based on the results of a traffic impact study, an appropriate throat length can be designed to meet the specific needs of the proposed use and the adjacent arterial. Local Site Plan Review regulations should require that a traffic impact study be completed for developments that will generate high traffic volumes.

7. Right Turn Deceleration/Acceleration Lanes and Tapers

Right lanes and tapers remove turning and slow moving vehicles from the travel lane of the arterial. The need for such lanes is generally determined through information provided in a traffic impact study showing the effect of the development on the level of service of the arterial. The length and type of turning lane necessary are a function of the proposed use and volume of traffic on the arterial. Both Subdivision and Site Plan Review regulations should include the provision for requiring a traffic impact study and the mitigation of off-site traffic impacts.

8. Left Turn Pocket

A left turn pocket allows left turning vehicles to move out of the through lane, thereby reducing conflicts between through traffic and turning traffic. The pocket provides storage for a number of left turning vehicles depending on the demand created by the site. A traffic impact study will help determine if a left turn pocket is necessary and how much storage the pocket should provide.

9. Driveway Material and Opening

In situations that do not warrant a full right or, left turn lane, simple, comparatively inexpensive driveway design methods can minimize the effect of an access on the adjacent arterial. Paved driveways allow vehicles turning off an arterial to exit the road more quickly than unpaved driveways. Site Plan Review regulations should be designed to ensure that new driveways and sites undergoing a change of use provide the maximum safety for turning vehicles and maintain or improve the level of service of the arterial. In cases where a site with uncontrolled access is being redeveloped, creating a definable driveway entrance should occur.

10. One-Way In/One-Way Out

Separating traffic entering a site from traffic exiting a site may best serve a site’s on-site traffic flow needs while still minimizing the effects of two accesses to a site. This provision can be included in Site Plan Review regulations for non-residential sites.

11. Frontage/Service Road

Frontage roads are fairly uncommon in New England, but they can be a valuable tool for reducing accesses to an arterial. A frontage road is directly adjacent to and parallels the arterial. Residences and businesses access the frontage road, rather than the arterial, which intersects the arterial at two or three points:

12. Turning Radius

A large turning radius allows vehicles to make a turn at a higher speed thereby removing turning vehicles from the road more quickly. A large radius also allows vehicles entering an arterial to accelerate more rapidly. This requirement is most useful for non-residential uses and can be incorporated into a community's Site Plan Review regulations.

13. Signs

Proper signage at driveway entrances, and the avoidance of sign clutter can assist travelers using the arterial to identify the site they are trying to find and properly identify the entrance to the site. While this is an access management technique, it is best incorporated into a community's sign regulations. A reduction in sign clutter and distraction can be accomplished by limiting the size, material, illumination, location, and number of signs allowed on each lot. The height, number, type and location of signs can affect the function of an access. Signs that obscure the view of an access, multiple signs, and signs with too much information should be avoided when possible. The legal aspects of regulating signs and sign content should be fully understood and regulations should be reviewed by an attorney.

14. Corner Clearance

Accesses to a corner parcel should be far enough from the intersection of two roads that vehicles using the driveway do not interfere with the function of the intersection. Assuming a 30 mph operating speed, the ideal minimum corner clearance from a signalized arterial is 230 feet. The ideal minimum corner clearance for a stop sign controlled intersection is 115 feet. For rural and other high speed roads, clearances of 460 ft. from signalized intersections and 230 ft. from stop sign controlled intersections should be maintained.

15. Medians

The placement of raised medians along busy and developed or developing sections of an arterial road is an effective way to prevent left turning traffic entering or exiting a development. This reduces the number of potential conflict points for users of the road making the road safer and more efficient. A traffic impact study done as part of a site plan or subdivision proposal should provide the necessary information to determine if a median is warranted. Medians are particularly common near busy intersections to prevent confusing and dangerous situations if too many busy accesses are located in close proximity to each other.

16. Signalization

Busy accesses on arterial roads sometimes require signalization to ensure that the intersection does not present a hazard to the people using it. This is a requirement that must be evaluated by an engineer based on a thorough traffic impact analysis study. An access that might require signalization will also be undergoing the professional scrutiny of the NH DOT. A community's Site Plan Review regulations should inform applicants that signalization is a possible requirement of the planning board, but the board should work closely with the NH DOT and its own engineering professionals.

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION SUGGESTED MINIMUM DESIGN STANDARDS FOR RURAL SUBDIVISION STREETS

These are suggested minimum design standards to be followed in the absence of local subdivision controls. Every effort should be made to exceed these minimums whenever possible. The circumstance of topography and other physical factors may require an occasional exception to these standards; however, the Selectmen should exercise reasonable judgment before granting such variations.

1. **GENERAL STREET PLAN:** Approval of the general development street plan should be required before allowing the construction of small integral phases of the plan.
2. **STREET LAYOUT:** Streets shall be laid out so as to intersect at right angles as nearly as possible and no street shall intersect another at less than 60 degrees. Streets shall be continuous and in alignment with existing streets as far as possible.
3. **DEAD-END STREETS:** Dead-end streets, designed to be so permanently, shall not be longer than 300m (1,000 ft.) and shall be provided with a turn around having an outside roadway diameter of at least 30 m (100 ft.).
4. **STREET NAMES:** All streets shall be named to comply with the provisions of the “Enhanced 911 System” (RSA 106-H: 10, I; RSA 106-H: 7, VII).
5. **RIGHT-OF-WAY:** The minimum width of right-of-way shall be 15.5 m (50 ft). A greater width may be required for arterial and collector streets.
6. **HIGHWAY RIGHT-OF-WAY BOUNDS:** Highway bounds, of a type approved by the Board of Selectmen, shall be installed at all intersection of streets, at all points of change in direction and at any other points the Board may deem necessary to designate the street lines.
7. **ALIGNMENT:** No streets shall be constructed with a curvature of less than a 30 m (100 ft.) radius.
8. **GRADES:** Street grades, where feasible, shall not exceed 10 percent, nor shall any be less than 0.50 percent. Special care shall be taken to provide flat grades at all intersections.
9. **CONSTRUCTION SUPERVISION:** Construction of the roadway, drainage facilities, sidewalks, curbs and all other elements of the highway must be done under the supervision of and with the approval of the Board of Selectmen.
10. **CLEARING:** The entire area of each street shall be cleared of all stumps, brush, roots, boulders, and like material, and all trees not intended for preservation.
11. **SUBGRADE PREPARATION:** All loam, humus and unsuitable material such as, but not limited to, stumps, vegetation, demolition debris, and structures shall be removed from

the roadway and replaced with suitable fill material. All boulders and ledge shall be removed to a uniform cross sectional depth of not less than 300 mm (12 in.) below the subgrade and replaced with sand or gravel.

12. **DRAINAGE:** Surface water shall be disposed of by means of culverts of sufficient capacity at water courses as determined by standard hydraulic design methods and by the construction of longitudinal storm drainage systems whenever required to relieve water in the ditch sections. Construction shall be in accordance with New Hampshire Standard Specifications, 2002, Sections 603, 604 and 605.

13. **GRAVEL BASE:** All streets shall be constructed with a minimum of 300 mm (12 in.) of gravel per New Hampshire Standard Specifications, 2002, Section 304.

14. **ASPHALT SURFACE:** The asphalt surface may be a Bituminous Surface Treatment, Section 410 or Hot Bituminous Pavement, Section 403 of the New Hampshire Standard Specifications, 2002, as required by the Selectmen. The minimum traveled way width should be 6.0 m (20 ft.) for 51 to 750 vehicles per day, 6.6 m (22 ft.) for 751 to 1,500 vehicles per day and, 7.2 (24 ft.) for roads carrying over 1,501 vehicles. A 13.2 m (44 ft.) wide pavement may be required in areas where on-street parking is expected on both sides of the travel way. Angle parking shall not be allowed.

15. **GRAVEL SURFACE:** In unusual cases of low traffic volumes (up to 50 vehicles per day) where the Selectmen feel an asphalt surface is not required, the total usable roadway width shall be a minimum of 6.6 m (22 ft.). Provision for a wider section should be considered to allow for future upgrading to an asphalt surface as recommended above.

16. **GRAVEL SHOULDERS:** Gravel shoulders, equal to the base course depth, shall be constructed adjacent to all asphalt traveled way surfaces as follows: 51-200 vpd. 0.6 m (2.0 ft.); 201-1,500 vpd. 1.2 m, (4 ft.); over 1,500 vpd. 2.4 – 3.0 m (8-10 ft.).

17. **BRIDGES:** Bridges, as defined by State Law (RSA 234:2), are all structures of 3.048 m (10.0 ft.) or greater clear span, and shall be designed to MS-18 (HS-20) loading (AASHTO Specifications). The minimum roadway width shall be 7.2 m (24 ft.).

18. **SIDEWALKS:** Sidewalks of 50 mm (2 in.) thick asphalt, on a 100 mm (4 in.) gravel base, not less than 1.5 m (5 ft.) in width and no closer than 3.3 m (22 ft.) to the street centerline shall be constructed on one or both sides of the street, as directed by the Board of Selectmen, when in the opinion of the Board such sidewalks are necessary.

19. **WETLANDS:** Any work that requires impacts (fill, dredge, excavation, etc.) on wetlands or other jurisdictional areas (stream banks, undisturbed tidal buffer zones, etc.) requires coordination with the Department of Environmental Services Water Division (271-3503) to ensure that all applicable rules and regulations are adhered to.

20. **EROSION CONTROL:** A **Site Specific permit** is required from NHDES (271-3503) whenever a project proposes to disturb more than 100,000 square feet of terrain (50,000 sq. ft. if within the protected shoreland), and as of March 10, 2003, construction activity that disturbs 1 or more acre of land needs a **Federal storm water permit** (contact

EPA at 617-918-1615).. Selection and design of erosion control measures may be found in the publication “Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire”, prepared by the Rockingham County Conservation District for the New Hampshire Department of Environmental Services, August 1992 (currently being updated).

21. **ENVIRONMENTAL IMPACTS:** Environmental documentation may also be required to address the natural, socio-economic, and cultural resource impacts. Contact N.H. Department of Environmental Services (271-2975) and N.H. Division of Historic Resources (271-3483) for assistance.

22. **UTILITIES:** Utility poles should be kept close to the right-of-way line, in no case closer than the ditch line and always well back of a curb. Water and sewer mains should be constructed outside the surface area and preferable outside the ditch line.

23. **SAFETY:** Safety is an important factor on all roadway improvements. On development roads it may not be possible or practical to obtain obstacle-free roadsides but every effort should be made to provide clear areas within the maintenance limits. The use of flatter slopes, the use of guardrail where necessary, and the use of warnings signs are other safety factors to be considered. These areas are addressed in the publication “Roadside Design Guide” by AASHTO, 2002.

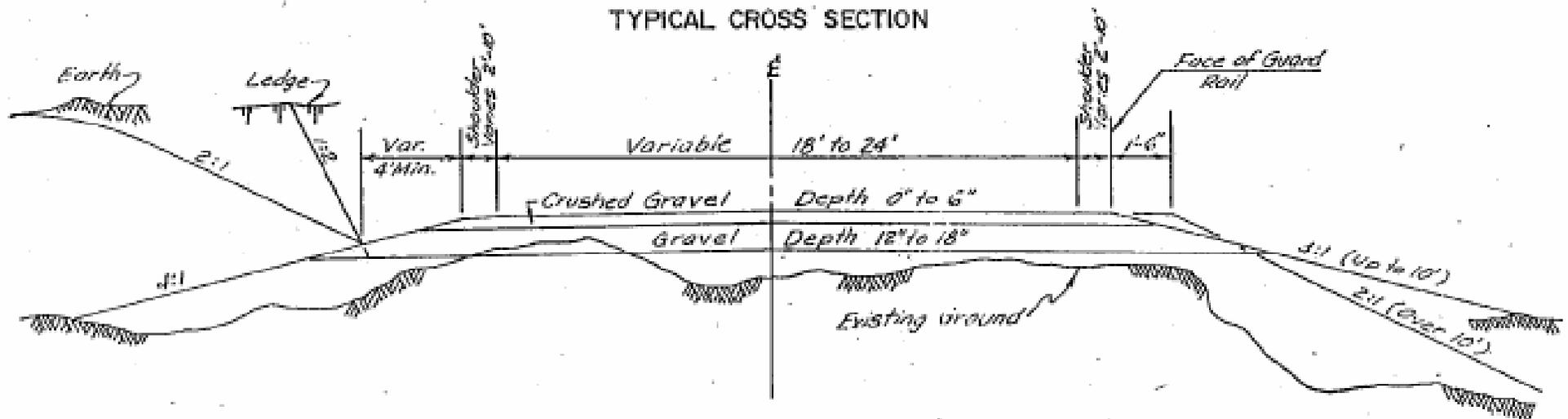
24. **MINIMUM STANDARDS:** The use of more liberal values than these minimum standards is recommended. For additional guidance and design of local development roads and streets, reference should be made to the American Association of State Highways and Transportation Officials, “Guidelines for Geometric Design of Very Low- Volume Roads” 2001, and “Policy of Geometric Design of Highways and Streets” 2001.

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
 MINIMUM GEOMETRIC & STRUCTURAL GUIDES FOR LOCAL ROADS AND STREETS

Average Daily Traffic (Veh./Day)	0-50	50-200	200-750	750-1500	1500 & OVER
Pavement Width (Feet)	18 min.	20	20	22	24
Shoulder Width (Feet)	2	2	4	4	8-10
Center of Road to Ditch Line	15	16	18	19-21	Varies
Pavement Type	Gravel	Asph. Surface Treated	Hot Bituminous	Hot Bituminous	Hot Bituminous
Slope of Roadway	1/2" per Ft.	3/8" per Ft.	1/4" per Ft.	1/4" per Ft.	1/4" per Ft.
Base Course Depth - (Gravel) (Cr. Gravel)	12" -	12" -	12" 4"	12" 6"	18" 6"

- Notes
1. Gravel Surface should be Paved where Steep Grades occur.
 2. For Average Daily Traffic over 1000 Veh./Day Paved Shoulders should be considered.
 3. Base Course Depths may need to be increased in areas of Poor Soils.

TYPICAL CROSS SECTION



SUMMARY OF TRAFFIC STUDIES

101 CORRIDOR STUDY

Historic and summer 1998 Traffic Counts:

- Average daily traffic counts were calculated in the Peterborough area using 7-day hourly automatic traffic recorder data collected during the spring and summer of 1998. Vehicle classification and speed were also collected to further establish vehicle mix and travel speed.
- Traffic volumes peak predictably, but significantly in Peterborough with 14,214 between US 202 South and US 202 North. Tractor trailer truck traffic volume, normally ranging from 4% to 9% for this road classification of “principal arterial-other” ran exceptionally high at the Peterborough-Temple town line of 11%.
- Approximately 74% of the vehicles recorded by speed exceeded posted speed limits. Excessive speeds (more than 15mph over posted speed limit) were observed for less than 10% of vehicles.

Local Official Workshop Summaries:

February 22, 1999: The Peterborough Planning Board and citizens in attendance identified several problem areas along NH 101 in Peterborough, including the intersection of NH 123 with NH 101 and the US 202 dogleg.

- There is mutual support among local officials and interested public regarding the use of access management to improve conditions on NH 101.
- There is a strong desire to "re-humanize" the NH 101 and US 202 streetscapes.
- The Office of Community Development submitted a memorandum to the Peterborough Planning Board. The memorandum included several recommendations for consideration regarding the NH 101 Corridor Study. (Note: The full memorandum appears in the technical appendices under "Public Involvement".
- The Peterborough Planning Board and citizens in attendance also expressed concern about closing Old Street Road to through traffic.

Traffic Volume:

- Average daily traffic volumes were calculated in the study using seven-day hourly automatic traffic recorder counts, during the fall of 2000. Vehicle classification and speed were collected for US 202 at town lines to establish vehicle mix and travel speed.
- Peterborough ranges from 6,810 at the Jaffrey town line to a high of 14,787 at the NH 101/US 202 dogleg, to 6,328 at the Hancock town line.
- Truck traffic volumes are in keeping with the road's classification as "Minor Arterial" and "Major Collector."
- The majority of vehicles recorded by speed were traveling at or near posted speed limits.
- Increases in traffic volumes have remained relatively stable since 1990.

U.S. 202 CORRIDOR STUDY

Turning movements were conducted at one signalized and three unsignalized intersections on US 202 in the months of October 2000, and January and October 2001 during peak travel hours of 6-9 a.m. and 3:30-6 p.m.

Signalized Intersection:

US 202 at Grove Street is pending review by NH DOT.

Unsignalized Intersections:

Location	Period	Movement	Level of Service
US 202/NH-1101 at Granite Street	A.M. Peak 7:30 - 8:30	EB Left	A
		SB Left	E
	P.M. Peak 4:30 - 5:30	SB Right	B
		EB Left	B
		SB Left	F
		SB Right	B
Granite Street at Pine Street	A.M. Peak 8:00-9:00	SB Left	A
		WB Left & Right	B
	P.M. Peak 4:15 - 5:15	SB Left	A
		WB Left & Right	B
Granite Street & Main Street	A.M. Peak 7:00 - 8:00	NB Left & Thru	A
		EB Left	E
	P.M. Peak 4:30 - 5:30	EB Right	B
		NB Left & Thru	A
		EB Left	F
		EB Right	B

Accidents:

Reportable accidents on US 202 involving property damage and those resulting in \$1,000 or more of damages for the period 1994 -1998, were obtained from the NH DOT.

Frequent Accident Locations:

Location	Number of Accidents
US 202 between Scott Mitchell Road and Vose Farm Roads	16
US 202 and NH 136	7
US 202 between Sand Hill Road and Main Street	29
US 202 between Grove Street & Grove Street Extension	22
US 202, vicinity of Sharon Road	9

Origin and Destination Surveys:

Origin and destination surveys were conducted at US 202 and NH 101 during the morning hours of 6:30 and 9:30 a.m. and afternoon hours of 3:30 and 6:30 p.m. on the days of July 11, 2001; July 25, 2001; and June 19, 2002, respectively.

- 43 % of trips had both origin and destination within the corridor.
- Daily commuter activity accounted for 43% of trips.
- 95% of the total number of vehicles surveyed were passenger vehicles.
- 74% of the vehicles surveyed were occupied by only one driver.
- The majority of the vehicles surveyed (85%) were registered in the State of New Hampshire.

2001 Business Owners Survey:

A survey of business owners along the US 202 corridor was conducted during the summer of 2001. The survey response rate was 54%.

- Approximately half of the businesses surveyed were retail (30%) and service (24%).
- In general, business owners reported that they chose to locate on US 202 due to visibility, traffic volumes and space requirements.
- About half (51%) of businesses rely on pass-by traffic for a portion of their business.
- A majority of businesses (66%) report variations in their business by season, while only 45% reported variability due to time of day or day of week.
- The majority of businesses indicated that they had no plans for change in the next five years. Of those anticipating change, 87% indicated that changes are expected to occur at their current location.
- A significant majority of the businesses responding (90%) indicated that they supported the use of shared driveways.

TRAFFIC STUDY & MODELING AT 15 INTERSECTIONS

The following fifteen intersections were utilized in this study, prepared by Edwards and Kelcey, Inc., November 2001:

- 1) Route 202 at Hunt Road
- 2) Route 202 at Route 136
- 3) Sand Hill Road at Old Street Road
- 4) Route 202 at Sand Hill Road
- 5) Main Street at High Street, Union Street, and Elm Street
- 6) Route 101 at Elm Street and Noone Avenue
- 7) Grove Street at School Street and Phoenix Hill Lane
- 8) Main Street at Grove Street and bank driveway
- 9) Main Street at Summer Street and Depot Street
- 10) Route 202 at Main Street
- 11) Route 101 at Route 202 and Grove Street (signalized)
- 12) Route 101 at Route 202
- 13) Route 202 at Grove Street and Monadnock Plaza
- 14) Route 101 at Route 123 and Old Street Road
- 15) Route 101 at the Texaco and Peterborough Plaza driveways

<u>Intersection</u>	<u>Level of Service</u>	<u>Queue #</u>
Route 202/123 @ Hunt Road (Hunt Road EB approach):	E	49
Route 202 @ Route 136 (Route 136 WB approach):	F (light suggested)	723
Route 202 @ Sand Hill Road (Sand Hill Rd. WB approach):	F	124
Grove Street @ School Street & Phoenix Hill Road: School Street WB approach:	D	81
Main Street @ Summer Street & Depot Street: Depot Street NB approach:	D	78
Summer Street SB approach:	E	99
Route 202 @ Main Street (Main Street EB approach):	F (light suggested)	595
Route 101 @ 202 & Grove Route 202 NB left turn:	D	161
Grove Street SB left turn:	D	143
Grove Street SB through:	D	251
Route 101 EB left turn:	D	63
Route 101 WB left turn:	D	223
Route 202 SB left turn:	F (light suggested)	202
Route 202 @ Grove Street & Monadnock Plaza: Monadnock Dr. EB approach:	F	63
Grove Street NB approach:	E	101
Route 101 @ Route 123 & Old Street Road: Route 123 NB approach:	E	74
Old Street Road SB approach:	F	162
Route 101 @ Texaco & Plaza Driveways Texaco SB approach:	F	18
Plaza Drive NB left turn:	F	159

**TABLE #1:
LEVEL-OF-SERVICE CRITERIA FOR INTERSECTIONS**

Level of Service	Unsignalized Intersections	Signalized Intersections
	Average Control Delay (Seconds per Vehicle)	Average Control Delay (Seconds per Vehicle)
A	<10	<10
B	>10 and <15	>10 and <20
C	>15 and <25	>20 and <35
D	>25 and <35	>35 and <55
E	>35 and <50	>55 and <80
F	>50	>80

SOURCE: *Highway Capacity Manual*, Special Report 209, Transportation Research Board; Washington, D.C.; 2000.

DOWNTOWN TRAFFIC AND PARKING TASK FORCE REPORT

The Downtown Traffic and Parking Task Force was created by the Selectmen in May of 2002 "to formulate recommendations for the Board regarding the efficiency and safety of traffic circulation and parking." Downtown was defined as the area from the Nubanusit River on the south (Grove Street) to and including Main Street on the north; and from the Granite Bank parking lot on the west to the Contoocook River (and the Main Street Bridge) on the east.

Early discussion determined that there was a need for professional assistance to determine the status quo (base line data) and to model "what-if" scenarios with the help of computer software. TIF money had been earmarked at Town Meeting to study traffic issues, so there were funds available. The committee received bids from 3 consultants, and decided to hire Vanasse, Hangin Brustlin, Inc. (VHB) of Bedford, NH for \$13,000. During the last week of September 2002, VHB administered a seven-day, 24-hour, bi-directional automatic traffic count at six downtown locations. They spent one of those days manually counting turning movements at four intersections, classifying vehicles and observing pedestrian activity, and doing an origin and destination study of Depot Square.

Accident Statistics

The report included digital photographs of 46 locations in the downtown area to facilitate discussion. There are accident statistics from the state and town. According to the State, there were 33 accidents downtown from 1998-2000, most resulting in some property damage. Seventy-eight percent of these accidents were on a weekday; 84% were on clear, dry days; and 33.3% were in the fall. These were probably high traffic times in the area. The town counted seven accidents from 2000-2001, 50% of them being collisions into parked vehicles. All the accidents took place on weekdays, at 10:00 and 11:00 AM and 2:00 PM. Half occurred during the winter and were due to snow and ice; 37.5% happened when conditions were clear and dry. None of these accidents claimed more than property damage.

Count Stations

The report also included historical data from four of NH DOT's permanent count stations in areas affecting the downtown. The data provides average annual growth rates for the years 1991-2001 of 0.4% on Route 101 at the Dublin town line, and for the years 1994- 1999 of 0.6% on Grove Street at the bridge over the Nubanusit. Much more significant average annual growth rates are shown on Route 202 (south of Sand Hill Road) of 3.0% over the period 1991-2001 and on Main Street at the bridge intersection with Route 202 of 3.1% over the period 1994-2001. The study concluded that "without a change in the downtown traffic circulation system, the Town of Peterborough will begin to experience effects of traffic congestion at several key downtown intersections within the next 2-3 years."

Traffic Counts

Automatic traffic counts measure the number of vehicles passing over the tubes; these are attributed to days of the week and hours of the day. Sundays were found to have the least traffic; Saturdays were nearly the same as weekdays, in most locations. About 1000 vehicles travel through the NAPA Autoparts driveway every day, the peak time being the lunch hour. About 1200 cars enter and exit

Summer Street daily, with heaviest traffic between 7-8 AM, 12-1 PM, and 4:30-5:30 PM. School Street east of Grove Street sees around 2000 vehicles a day, with the lunch hour and between 6-7 PM busiest. Depot Street at Main Street has about 2200 vehicles each day, with its busiest times the same as School Street. These streets might be considered the internal routes of downtown, the ones which create flexibility for traffic, especially for residents and people who work there.

Impact of Highways

There is little if anything we can do to modify the traffic on the highways outside of town, yet 101 and 202 have considerable impact on downtown. At its peak, the NH 101/US 202 dogleg reaches a traffic count of 14,787 (Oct. 2002). Grove and Main are streets which seem to have traffic that doesn't have to be there. Both these routes are sometimes used as throughways to the highways; in fact, nearly 50% of the traffic coming through town daily does not have downtown as its destination. Grove Street sees 8000 vehicles daily during the week with fairly steady traffic between 7AM and 10 PM. Main Street has 6000 vehicles each day with peak hours between 8-9 AM and 6-7 PM. Both the police station and the Chamber of Commerce have reported that people stop every day asking for the location of 202 North because the signs are confusing at the 101/202 intersection. Also, the sign for the highway comes very late on Concord Street -too late, we think, to keep vehicles going straight ahead. A directional sign for 202

North at the major intersection and a sign for 101/202 placed just north of the Verizon building on Concord Street would help. Since we have to wait for the State DOT to place these, perhaps our own sign indicating "downtown" and "highways" would address the situation sooner and route unnecessary traffic from downtown.

Intersections

Turning movements were observed manually at four intersections downtown: Grove and School Streets; Grove and Main Streets; Main and Depot Streets; and Main Street and the Autoparts Driveway. These observations combined with the traffic counts determined the level of service at each intersection. At present, there are no failed or substandard intersections, even during the peak traffic hours. This situation should last until 2005. VHB predicted that if cut-through traffic can be diverted from downtown and a light installed at the 202 dogleg, conditions may be stable through 2007. A signal at the 202/Main Street intersection improves every downtown intersection until 2016. This option could be considered when the retaining wall is rebuilt.

One-Way Scenarios

Further study by VHB included trying various one-way scenarios, as many people had suggested that these might improve traffic flow. Making School Street one-way eastbound from Grove to the Depot Square entrance worsens the intersection at Depot Street northbound. Making School Street one-way westbound from Grove Street to the Depot Square entrance improves the intersection at Phoenix Mill Street, but makes four other intersections worse. Creating a one-way counterclockwise rotation with School Street one-way eastbound, Depot Street one-way northbound, and Grove Street one-way southbound improves two intersections and worsens three. A counter-clockwise rotation with Grove Street one-way northbound, Depot Street one-way southbound and School Street one-way westbound improves nothing and makes six intersections fail. Since there is no significant improvement, it makes sense to keep the present traffic pattern possibilities which provide important flexibility.

Best Alternative

Alternative F (see Microsimulation Results of Downtown Traffic Circulation, January, 2003) creates the best alternative for improving traffic flow downtown. It allows for existing downtown circulation and traffic control with a 25% diversion of downtown cut-through traffic back to NH 101 via US 202 through downtown traffic calming measures, signing strategies, and signal coordination, with an assumed signal installed at NH 101/US 202. The addition of a traffic signal at Main and Concord improves downtown traffic until 2020. It should be noted here that this particular aspect of the VHB report was developed from the SYNCHRO/Sims Traffic simulation model, which they updated for the town. Improving the existing computer program allows us to evaluate existing conditions more accurately, forecast future conditions, and test alternatives. We should be able to use this model ourselves as new ideas arise. The committee was very pleased with the work of Vanasse, Hangin Brustlin, Inc., especially with the presentations of Chris Bobay. It was important to develop a body of base-line data with which to work, and the improved computer model should be valuable for some time to come.

DOWNTOWN SAFETY

The committee also discussed means of improving particularly problematic turns downtown. Turning right onto Grove Street from School Street is often made difficult because of large vehicles (trucks and vans) that park in the last space nearest the hydrant. Removing this parking space would make this intersection safer. Turning left (westbound) onto Main Street from Grove Street can be another tricky maneuver for the same reason. In general, however, the committee feels that difficult turns can be, ironically, the safer ones, because the driver has to slow down and take in a lot of information before s/he can move carefully. Smoothing out too many rough edges can have the opposite effect from what might be desired: if it's easier to see ahead, then you can move faster and, possibly, with less care.

Pedestrian safety is also a concern in the downtown. We are fortunate that there have been no accidents involving pedestrians, but Chief Guinard says that there have been plenty of close calls. Traffic calming techniques like thumbs protruding at intersections would decrease the actual area that a pedestrian would have to cross, but building those would mean a loss of some parking and might create problems for the highway crew in the winter. We recommend making the crosswalks more visible, perhaps by using brighter paint, or painting more often. We are interested in a new technique for marking crosswalks with a stamped color and pattern that seems to be working well in Hanover and Durham. We also recommend that angle parking be removed from any crosswalk area. Depot Square needs some special attention because of constant pedestrian activity which crosses against heavy traffic, including delivery trucks. The crosswalk in front of RA.Gatto's is not handicapped accessible, and doesn't really connect to a street. We suggest making a sidewalk in front of the Rymes property from which a crosswalk could extend to the municipal lot. This gives people who are entering or leaving either parking lot on foot a safe place to wait to cross to the other side.

DOWNTOWN PARKING

Early on, it became apparent that many people perceive parking to be a problem in downtown. Business owners, merchants, and employees hoped that the committee would address this issue as part of the traffic study. We administered a survey of the downtown businesses with the considerable help of Tasha Cuddemi of the OCD. The survey represented nearly 100 businesses on both sides of Main Street from the bridge to and including the former Byte building and the Granite Bank; as well as Grove Street to and including Peterson's and Willette' s; and the entire Depot

Square-School Street area. The survey asked for the number of parking spaces owned, the number of employee parking places needed, and the estimated number of customer parking spaces used at any one time.

About 90% of those surveyed responded. From the responses, we ascertained there are approximately 480 privately owned spaces and about 475 employees working downtown during the daytime. The customer count, while harder to determine, appears from the survey to be approximately 360 at any given time during the day. This puts a total of 835 parking spaces in use. The "Central Business District Inventory" done in 1994 by Karen Cullen (and adjusted by site observations by Lucia Kittredge in a report for Downtown 2000 prepared in 1995), found 853 parking spaces available, some of these in restricted lots. This leaves a balance of 18 potentially unoccupied spaces. Any special event or seasonal surge would fill those spaces. Clearly, this borderline capacity is the reason for a perceived parking problem.

The survey also asked businesses to estimate their growth rates over the next five years. The responses were too inadequate to analyze. However, a 1% annual growth rate over the next five years would mean approximately eight spaces a year, or 40 in the next five years.

Fifty-four businesses responded with comments and suggestions. Nineteen percent said they do not find parking to be a problem downtown, though most of these respondents were not based in Depot Square. Fifty-seven percent said there is a problem, and suggested various solutions such as providing more all-day employee parking. The balance did not clearly indicate a problem but also suggested solutions.

The Chamber of Commerce also helped this committee by enclosing a different survey in their December newsletter for businesses located outside of the downtown area. There was a 10% response (40 returns). Parking in Depot Square was often observed to be difficult. There are clearly times during the day, especially at lunch, and during the year, especially at Christmas, when parking spaces in that area are hard to find.

Parking demands in Downtown Peterborough now are nearly at capacity frequently during the day. Add to this any increase in business growth, and the renewed interest in developing the upper stories of some of the buildings downtown, perhaps for residences, as a result of the visioning process for the Master Plan, and it's easy to imagine more parking problems in the future. This would be a good time to re-examine downtown zoning regulations which allow the counting of parking within a 300 foot radius. This flexibility has done its job and may have to be tightened up.

A long-term solution, suggested by a number of those surveyed, was a parking garage. We encourage considering the parking lot at the west side of the former Byte building that nearly parallels Main Street. A second lot elevated over the present one could potentially provide up to 80 spaces, and could be accessed from Main Street. A garage would be very expensive, so it seems important to have some guarantees about its use, perhaps from downtown employers and employees.

In order to loosen up parking in the short term, we recommend changing most of the two-hour parking spaces on the Main Street hill next to the Town House to all-day parking. In an experimental parking exchange of sorts, we recommend putting signs for two-hour parking on one side of the traffic island behind the Diner in Depot Square, creating the possibility for better turnover for

twelve vehicles. If these time limits are abused, we would consider parking meters in the town lot. Meters seem a little urban and unfriendly, but in our study we discovered that they would probably pay for themselves in a year and a half and then provide some income for the town from charges and fees.

Public Works Director Ed Betz has said that it would not be too expensive or difficult to improve the drainage even more in the Summer Street lot to make it more attractive for all-day parking. There is already lighting there. We suggest better signs directing drivers to that area. Business owners should be encouraged to ask employees to park away from customer/short-term parking. Property owners with outlying parking lots should be encouraged to negotiate with in-town employers who need parking. Also, business uses at off-peak times, like evenings, weekends, early mornings or late afternoons should be promoted. The Chamber survey supported having more waste baskets and bike racks, and adding water fountains and public restrooms. These amenities, plus the new Common Pathway, would make coming to town on foot or bicycle even more attractive. The Chamber survey also indicated some interest in having inexpensive public transportation in the form of a shuttle bus or tram, though there was not much interest expressed in using it.

Downtown Peterborough is a busy place, full of vitality and energy. We are interested that there is some perception of even a modest parking and/or traffic problem - it means that things are happening. There is no critical mass to the problem at this point, however. We are not strained or stretched, just occasionally challenged. The recommendations we have made to reorganize some parking, improve crosswalks, enhance some sight distances, and remove some traffic from downtown through better highway signs should help in the short-term. The computer simulation and traffic data generated by the consultants will be helpful in planning for the long-term.

COMMITTEE RECOMMENDATIONS

1. Ask NH DOT to improve signs at the 101/202 intersection to show 202 North, and place a highway sign on Concord Street by the Verizon building.
2. Consider placing signs of our own, especially to clarify "downtown."
3. Remove the parking space next to the hydrant on Grove Street which is directly after the right turn from School Street.
4. Create a sidewalk in front of the Rymes gas station and put a crosswalk from there to the municipal lot.
5. Make all Downtown crosswalks more visible.
6. Remove all angle parking from crosswalks.
7. Study the cost and feasibility of a parking garage built over the parking lot at the west side of the former Byte building.
8. Re-examine zoning regulations for Downtown parking for future businesses.
9. Change the two-hour parking spaces on Main Street hill to all-day parking.
10. Put a two-hour parking limit on 12 spaces (one side of the island) behind the Peterboro Diner. If signs don't work, consider parking meters.
11. Improve drainage in the Summer Street lot and improve signage for it.
12. Encourage employers to ask employees to park away from customer/short term parking.
13. Encourage property owners who have extra parking to share with Downtown employers who need more parking.
14. Encourage business use at off-peak times to take advantage of open parking.

15. Encourage people to walk or bike to town by promoting the Common Pathway and providing more amenities Downtown.
16. Give consideration to the placement of a traffic signal at the Main Street/202 intersection when the retaining wall is rebuilt to extend the life of any improvements to traffic circulation
17. Consider creating a handicapped parking space somewhere on Main Street. There is none at present.

SPECIFIC ROADWAY PROBLEMS

The information on the following three aspects of Peterborough's road system is provided by the Peterborough Police Department.

Traffic Density

It is already apparent that traffic exiting 101 onto Granite Street, particularly during "drive time," feeds a great deal of traffic into and through Town via Concord Street and Main Street. The same holds true for traffic coming down Concord Street and onto Granite Street in order to exit onto 101.

Many vehicles, in order to avoid the Granite Street/101 Exit, will often turn up Pine Street, very often at high rates of speed, in order to enter 101 from Pine Street. Residents along Pine Street have expressed concern relative to speed, and the Police Chief is giving thought to requesting that a stop sign be placed at the corner of Pine and Cheney as a deterrent to speeding.



Traffic density also exists during certain periods at the intersection at the junction of Old Street Road, Route 136, and Route 202. At present only two stop signs, one at 101 and 136 and one at the bottom of Old Street Road (Route 123) and Route 202, offer any sort of traffic control.

Road Sections Considered Dangerous

It is a widely known fact Route 202 North beginning at EMS and continuing to Hancock is a high accident area due largely to width, lack of shoulders, curves, and excessive speed. Hopefully, this area will receive improved re-structuring early in 2003.

Both Old Greenfield Road as well as Sand Hill Road, which have accommodated increased home sites, are now barely able to handle increased traffic flow due to narrow widths and relatively dangerous curves. It is fortunate that both of these roads have not experienced severe vehicle accidents due to the excess speed that is used on these highly traveled roads.

Route 202 North, beginning at the intersection of 101, is also an area holding potential danger due to driveway and road cuts into Granite Bank, Bank of NH, Mr. Mike's, the travel lane into Peterborough Plaza, and into the Monadnock Plaza. Due mostly to inattention, it is a relatively high accident area.

High Risk Intersections

Two major high risk intersections are the intersections of Elm Street and 101 and the intersection of Upper Union Street and 101.

Upon entering 101 from Elm Street, traffic traveling west is often difficult to see due to the incline of 101 coming from Town.

Excessive speeds along 101 going both east and west does present a hazard to traffic exiting from upper Union Street onto 101 and also to traffic traveling east that chooses to turn into upper Union Street.

Links to Traffic and Transportation Information

NH DOT Citizen's Guide to Transportation Series #4: Access Management

www.state.nh.us/dot/transportationplanning/pdf/CitizensGuide-AccessManagement.pdf

NH DOT Citizen's Guide to Transportation Series #7: The Transportation/Land Use Relationship

www.state.nh.us/dot/transportationplanning/pdf/CitizensGuide-LandUse.pdf

Chapter 8: Land Use Plan

- “Livable Walkable Communities”
- Comprehensive Smart Growth Audit Checklist
- 2003 Master Plan Survey Results

LIVABLE, WALKABLE COMMUNITIES

What is a Livable, Walkable Community?

Livable, Walkable Communities (LWC) are places where people of all ages and abilities can easily and safely enjoy walking, bicycling and other forms of recreation.

LWCs support and promote physical activity; have sidewalks and on-street bicycle facilities; have multi-use paths and trails, parks, and other recreational facilities; preserve open space; and promote mixed-use development with a connected grid of streets allowing homes, work, schools and stores to be close together and accessible by walking and bicycling. As a result LWCs protect our environment, provide informal places to meet, respect our heritage, and promote local economic growth.

What might this mean for your community? It could mean:

- Having trails, multi-use paths and bikeways connecting parts of town
- Increased ability to walk safely and in places other than the road
- More opportunities to get out and move creating healthier children and citizens
- Additional places to connect and meet with others in the community

What are the health issues relevant to LWC?

Lack of exercise and poor diet together are responsible for approximately 14% of all deaths and contribute to lower quality of life for millions of Americans each year. This is second only to tobacco use and accounts for more deaths than alcohol, drugs, firearms and motor vehicles combined.

Currently, only 24% of NH adults and 27% of 9th-12th graders meet the recommended 30 minutes of physical activity 5 or more times per week¹. The percentage of American children and adolescents who are overweight has more than doubled since the early 1970s. About 13% of American children and adolescents are now seriously overweight. Obesity increases the risk of developing diabetes and cardiovascular disease, and of children becoming obese adults².

Did you walk or bike to school as a child? Do your children or grandchildren walk or bike to school?

The number of children ages 5 to 15 who walk or bike to school dropped 40% between 1977 and 1995. For school trips one mile or less, only 31% are made by walking; within two miles, just 2% of school trips are made by bicycling³. Yet walking or biking to school means that 20 to 40 minutes of activity is incorporated into our children's everyday life; they arrive at school more receptive to learning and understand that walking and biking are valid forms of transportation. In many of our communities, we have moved our schools to the outskirts of town, making walking or biking difficult for students and staff.

"Health is an outcome behavior. It happens when everything else is working in a community. This happens when members of the community are connected, committed and empowered."

- Lelian Kaiser, PhD Health futurist.

¹ Healthy NH 2010, March 2001

² CDC Website: www.cdc.gov/nccdphp/dnpa/obesity/epidemic.htm

³ Nationwide Personal Transportation Survey, 1997, US Dept. of Transportation

What is happening?

We have engineered activity out of our daily lives.

- "work" no longer requires extended periods of physical activity. Machines and computers have replaced activity once integrated into daily life.
- Separation of homes from services such as grocery, post office, library, schools and recreational facilities have increased dependence on the personal automobile and altered the layout of traditional NH villages.
- Daily physical activity now competes with other activities for our leisure time. Most are sedentary.
- Transportation planning and dollars are spent to accommodate automobiles. Pedestrians are an after thought, if that.

What can be done in your community?

There are many levels to addressing this issue. Good first steps include raising awareness about the importance of a LWC and assessing your community's current livable, walkable status.

- Many towns have or will go through a Community Profile Process as part of their town master planning. Attend this process in your town and be sure this issue is discussed.
- Begin talking about this issue with likely partners: safety officers, PTO, recreation and conservation commissions. Remember they all have a vested interest in this issue.
- Talk to folks in other communities who are in the process of doing the same (NHCW can provide you with names).

Tap the LWC Toolkit

To help communities begin the process of assessing and identifying possible action steps, LWC has developed a toolkit to assist communities with visioning, engaging, assessing, planning, linking with resources, implementing, and, of course, celebrating the process of becoming more livable and walkable. The toolkit includes an assessment scorecard, an exercise for mapping destinations and linkages, and a survey for conducting a walking audit of current conditions in your neighborhood or community. Additionally, a Community Resource Guide included in the toolkit will assist your community in easily accessing statewide and local resources necessary for implementing desired action steps.

To learn more about Livable, Walkable Communities or the LWC Toolkit contact:

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LWC is an initiative of NH Celebrates Wellness, and is currently funded through corporate sponsorship provided by Anthem Blue Cross and Blue Shield.

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Town of Peterborough

TOPIC	DOCUMENT	YES	NO	COMMENTS
Efficient Land Consumption				
Population and Employment Projections: Are they realistic in terms of regional state projections?	Master Plan	✓		
<i>Commentary: Population projections provide the basis for all other planning efforts, including projections of households, number of housing units, acreage needed for residential land use, job base, and community facilities and services. Population projections should not exceed any population projects for the jurisdiction published by a regional or state agency.</i>				
Are housing unit projections based on a housing needs assessment?	Master Plan	✓		
Is the amount of future residential land use shown on the land-use plan based on calculations of the number of acres needed for each type of residential land-use category and prevailing or planned densities (e.g., 200 acres of R-1 vacant land at 3 units per acres = 600 units; 75 acres of MR vacant land at 8 units per acre = 600 units etc.) based on reasonable projections of housing units by type?	Master Plan		✓	
Is the land-use plan efficient in terms of the amount of undeveloped land devoted to residential uses when compared with the projections of residential land needed?	Master Plan		✓	
<i>Commentary: "Efficient: is defined here to mean that the amount of vacant acreage devoted to residential uses in the future land-use plan should be approximately equal to the projections of land needed for residential use based on the housing needs assessment. A smart growth land-use plan does not designate excessive amounts of future residential land use when they are not needed. Exceeding the projected residential acreage needs by more than 25 percent in the land-use plan (which can be shown by calculating the difference between existing residential land use acreage and future land-use acreage shown on the plan) would probably be grounds for a finding that the plan is not achieving smart growth. Excessive residential acreage in a plan will encourage consumption of more land than is needed for residential uses and encourage residential development to spread out at lower densities than those suggested in the land-use plan.</i>				
Direction of Growth (Inward, Not Outward)				
Do land use policies favor an inward "direction of growth" toward existing developed areas (where such areas exist), instead of promoting or favoring new development on the fringe of developed areas (i.e. "greenfield")?	Master Plan	✓		
Does the land-use analysis identify in quantitative terms (i.e., number of acres and preferable buildout potential in number of units) what the potential is for residential infill development?	Master Plan	✓		

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Are there specific policies that promote and encourage infill development (where such areas exist)? Master Plan ✓

Commentary: Efficient land use, or smart growth, means that undeveloped land within built-up areas should be used rather than left vacant because infill development saves on the consumption of land at the urban fringe and often can make use of existing infrastructure (e.g., roads, water and sewer line capacity, etc.). Local governments cannot be smart about infill development unless they have made an inventory of vacant lands that can serve as infill development sites. A land-use plan is smart when it studies the capacity of residential infill land (currently vacant or underused), determines the capacity of that land for new residential units, and poses policies, strategies and regulations supportive of development of infill sites.

Does the land-use plan contain an analysis of redevelopment potential? If it finds there is redevelopment potential, does the land-use analysis identify what the redevelopment potential means in terms of new housing units and square footage of nonresidential development? Master Plan ✓

Does the plan recognize the need to reclaim and reuse any temporarily obsolete or abandoned sites (TOAD's) and to clean up and reclaim for future use any "brownfields"? Master Plan ✓

Density

Does the land use element contain an analysis of developed residential densities and how they relate to planned densities and densities permitted by zoning districts? Master Plan ✓

Commentary: Cities and counties should calculate the built residential densities (i.e., number of units per acre) of recent developments to determine the average or prevailing densities being constructed. These figures on existing densities should be compared to the land use plan for differences or inconsistencies. They should also be compared to allowable densities according to the various zoning districts in which the recent development is located. If actual (built) densities are much less than planned densities or if actual densities are much lower than the maximum densities permitted by zoning district, residential development is not occurring efficiently with regard to land consumption and use of planned infrastructure. Smart plans bring actual (developed) densities in line with densities recommended in plans and allowed by zoning ordinances. In other words, if the number of residential acres consumed vastly exceeds the number of acres projected to be used during a given time period, residential growth has occurred inefficiently, counter to accepted principles of smart growth.

Do land use policies encourage the establishment of minimum (not just maximum) densities to promote the efficient use of lands designated for higher densities? Alternatively, does the plan address any findings that density allowances in the land use plan and zoning districts have been underutilized? Master Plan ✓

Do land use regulations establish minimum densities to promote efficient use of lands designated for higher densities? Zoning Ordinance ✓

Commentary: Underuse of residential lands, due to building at lower densities than planned or zoned, results in the land consumption for residential use that is faster than planned. Therefore, more land is needed for residential uses which probably means that land needs will be satisfied by removing more land from productive agricultural use in

Comprehensive Smart Growth Audit Checklist

the outlying areas. One way to achieve more efficient land use for residential development is to establish minimum densities in areas where it is very important that planned densities be achieved (e.g., around transit centers or in areas master planned for sewer and/or water service).

Do minimum lot sizes allow for urban-sized lots?	Zoning Ordinance	✓	In two Mixed-Use Districts, there are no minimum lot size requirements.
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Commentary: *Zoning ordinances should provide a portion of single-family zoning devoted to single-family development on lots of 10,000 – 15,000 square feet in areas served by sewer and water.*

Is at least some of the residential land in the community planned and zoned for densities between eight and 15 dwellings units per acres, with even higher densities provided for in urban centers?	Master Plan and Zoning Ordinance	✓	In any district, density cannot exceed four units per acre.
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Urban Form

Does the land use plan propose a sequential, phased pattern of future development in areas contiguous to developed areas so that a compact urban (or suburban) form can be obtained?	Master Plan	✓
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Commentary: *Smart Growth means that urban areas are expanded efficiently (only as much land is used as is needed) and in a pattern where new growth is contiguous to existing developed areas. To develop in a contiguous and compact form means that scattered development and sprawl can be avoided. Sequential development also provides for a better return on the public investment in public facilities, and it reduces the linear footage that facilities must be extended.*

Does the zoning ordinance zone much of the fringe land as exclusively agricultural (i.e., a holding category) or with a substantial minimum lot size that discourages single-family tract housing and preserves large sites for viable farm use?	Zoning Ordinance	✓	The Rural District allows agriculture, but not exclusively. And agriculture is only allowed in this district.
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Commentary: *Smart growth means that land use controls inhibit the scattering of low-density residential uses at the urban fringe, a condition that constitutes the epitome of sprawl. Many local governments have “agricultural” districts, but they allow a minimum lot size of one acre or less. Minimum lot sizes need to be much higher (i.e., 10 acres is probably the smallest land area that can function efficiently as a farm: preferably 25-40 acres) to discourage “exurban” development, “hobby” farms that are really residential tracts, “ranchettes”, and other forms of low-density suburban sprawl. In cases where large agricultural minimum lot sizes are not feasible, the smart growth auditor should look for other ways that the master plan and regulations discourage the consumption of agricultural lands on the urban fringe, such as a greenbelt or taxation policies.*

Land Use

Does the land use plan designate areas, where appropriate, for mixed-use development?	Master Plan	✓	The Master Plan identifies three areas for mixed-use development.
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Do plan policies discuss opportunities, and encourage the mixing of land uses at the building, site, and neighborhood levels?	Master Plan	✓	Yes, within these three districts.
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Comprehensive Smart Growth Audit Checklist

Does the local zoning ordinance provide at least one or more zoning districts that allow mixes of residential and commercial uses?	Zoning Ordinance	✓	The three districts identified in the Master Plan have been adopted as mixed-use zoning districts.
If the community has a downtown, are residential uses allowed in the central business zoning district?	Zoning Ordinance	✓	
Do the future land use plan and zoning ordinance allow for compatible, small-scale neighborhood commercial uses (e.g., corner stores) adjacent to or within residential neighborhoods?	Master Plan and Zoning Ordinance	✓	In two of the three Mixed-Use Districts.
Does the local zoning ordinance provide for traditional neighborhood development (TND)?	Zoning Ordinance	✓	
Are home occupation regulations flexible enough to allow a wide variety of telework activities while maintaining the peace and quiet of the neighborhoods in which they are located?	Zoning Ordinance	✓	

***Commentary:** Mixing of land uses is a major tenet of smart growth. Plan policies and land use regulations should provide for, and even encourage, mixed land uses, especially residential and commercial. Such mixtures allow people to work and reside in the same area, sometimes even in the same building. It is generally accepted that mixing land uses allows for walking more and reduces vehicle miles traveled, which can help to improve air quality and relieve traffic congestion.*

Jobs – Housing Balance

Does the master plan consider the appropriateness of balancing jobs and housing, both qualitatively and quantitatively?	Master Plan	✓	
Do any small area plans or corridor plans for the community consider and integrate the notion of jobs-housing balance?	Subarea Plans	✓	
Do planned unit development (PUD) regulations provide for an approximate mixture of housing and jobs, or do they result in predominantly single-family residential development with no jobs nearby?	Zoning Ordinance	✓	The Town does not have PUD regulations, only Open Space Residential Development.

***Commentary:** The concept of jobs-housing balance holds that communities should plan for a rough match between the number of jobs and the number of housing units. A desirable range is approximately 1.5 housing units for every job in the community. Plans should also investigate whether the characteristics of housing in the community match the needs of workers residing in the community and whether the types of jobs in the community match the skills of the resident work force (i.e., consider the “qualitative” aspects of balance). A quantitative balance of jobs and housing does not necessarily signal smart growth, especially if there are qualitative mismatches between jobs and housing.*

Open Space/Green Space

Does the plan establish a goal, policies, and implementation measures to set aside a certain	Master Plan	✓	
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Comprehensive Smart Growth Audit Checklist

percentage of total land area in the community as open space or green space?

Do all (or most) zoning districts require a minimum open space ratio (i.e., percentage of land area for each development that must be open space)?

Zoning Ordinance



Only in Open Space Residential Developments.

Do land use regulations require developers to consider connecting open spaces and greenways to existing destinations and open space reservations?

Zoning Ordinance



Are open spaces and green spaces accessible to all or most of the residents of the community?

Parks and Recreation or Green Space Master Plan



***Commentary:** Many cities and counties have developed green space plans, which establish the goal of maintaining a minimum of 20 percent of the jurisdiction's land area as green space. Smart growth plans establish a goal for green space acquisition and permanent protection, provide an inventory of obstacles to attaining the goal, and establish specific programs of implementation to meet the goal. Counties and cities that are not eligible to participate in a state's green space program should nonetheless have goals, policies, and programs in place to acquire and preserve green space.*

Has the community considered funding measures, such as a special local option sales tax or a general obligation bond referendum for acquisition of green space?

Master Plan, funding components.



There is a Capital Reserve Fund for the purpose of purchasing open space land.

Do local land use regulations provide for "conservation subdivisions" or "cluster subdivisions" as a matter of right (versus requiring a conditional use permit or special exception)?

Zoning Ordinance and Subdivision Regulations



***Commentary:** Open space, conservation, and cluster subdivision practices are effective ways of setting aside green space and open space. Local regulations are not smart unless they provide for and even encourage these types of subdivisions. When clustering or conservation designs are not allowed, developers subdivide land into individual lots that rarely preserve natural features and open space.*

Energy Conservation

Does the master plan identify energy conservation as a goal, and do policies exist to promote energy conservation?

Master Plan



Do land use regulations require the planting of shade trees around new subdivision roads and within parking lots?

Zoning Ordinance and Subdivision Regulations



Does the community have guidelines for designing development sites and buildings for energy efficiency?

Design Guidelines



Comprehensive Smart Growth Audit Checklist

Does the local zoning code provide an option for encouraging subdivisions to use solar power?	Zoning Ordinance	✓
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***Commentary:** There are multiple ways a local plan can promote energy conservation. For instance, tree protection ordinances help retain and enhance shade, which reduces cooling costs. Shade tree requirements along streets and parking lots provide aesthetic benefits in addition to helping to attain energy conservation objectives. Local governments can adopt design guidelines for energy efficient buildings and site designs. Though more popular in the 1970s than today, changing local codes to facilitate efficient energy use can promote the design of subdivisions with solar access, which then facilitates solar panels and cells for domestic energy use.*

Water Quality

Do local land use regulations prohibit development within, and the filling of floodways and floodplains?	Zoning Ordinance/ Other Regulations	✓	In accordance with FEMA requirements, the only prohibition is in the Floodway.
Have the community’s development regulations been revamped recently to encourage or require best management practices for water quality?	Various Land Use Regulations	✓	
Does the local jurisdiction have water-quality ordinances in place?	Various Land Use Regulations	✓	
Has the community instituted programs of water-quality monitoring and other related programs to ensure total maximum daily loads (TMDLs) are not exceeded?	Various Land Use Regulations	✓	

Air Quality

Does the master plan discuss air quality and identify policies and implementation measures to protect it?	Master Plan	✓	
If the community is in a “nonattainment” area, is the local plan consistent with, and does it reference, regional, and state goals for air quality management?	Master Plan	✓	

Housing

Does the housing element of the master plan contain a housing needs assessment?	Master Plan	✓	
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***Commentary:** Some state’s planning rules require a housing element and an assessment of future housing needs. However, most local governments have not completed rigorous, detailed assessments of housing needs by type of unit and income. A local plan cannot be smart unless it has forecasted the future housing needs of the community and ensured that land use regulations provide for development practices to meet those forecasted.*

Does the master plan provide for a wide range of housing types (detached single-family, duplexes, manufactured home, apartment, etc)?	Master Plan	✓	
Do the provisions within at least some of the residential zoning districts allow for a wide range of housing types by right (versus requiring a conditional use permit or special exception)?	Zoning Ordinance	✓	

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Does the master plan meet the housing needs of all income levels, as determined by a housing needs assessment?	Master Plan	✓	
If the regional planning agency has established a fair-share allocation for the city of county that mandates a specific number of affordable housing units, does the master plan reflect that goal and provide for its implementation?	Master Plan		Not applicable.
Do local regulations allow for mixed-income housing developments?	Zoning Ordinance		The ordinance does not regulate based on income.
If the housing needs assessment identifies a need for multi-family residences, does the zoning ordinance provide sufficient vacant land to meet future needs?	Zoning Ordinance	✓	
Does the zoning ordinance allow for “accessory apartments” within single-family residential zoning districts?	Zoning Ordinance	✓	
Are manufactured homes a use permitted outright in at least one residential zoning district?	Zoning Ordinance	✓	
Are minimum lot sizes set low enough in at least one residential zoning district to provide for homeownership for all income classes?	Zoning Ordinance	✓	In two of the Mixed-Use Districts, there are no minimum lot sizes, although that does not guarantee a lower price.
Does the local zoning ordinance provide flexibility for house sizes (e.g., does it allow small units versus establishing large minimum floor areas for all dwelling units)?	Zoning Ordinance	✓	

***Commentary:** Exclusionary zoning is the opposite of smart growth. A community’s zoning regulations are smart only if they provide reasonable and fair opportunities for diverse housing types and price ranges. Local governments can accomplish smart growth by reducing minimum lot sizes, eliminating or lowering minimum house sizes, providing for manufactured homes in one or more residential zoning districts, allowing accessory apartments, and encouraging apartment development where needed.*

Transportation

Does the master plan include a transportation element that addresses long-range needs for roads, bicycle paths, transit, freight movement, and water and air travel (where appropriate)?	Master Plan	✓	
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***Commentary:** “Smart” master plans provide detailed assessments of travel needs via multiple modes.*

Do Local transportation policies provide for the maintenance of current roads and existing transportation systems before spending money on	Master Plan	✓	
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Comprehensive Smart Growth Audit Checklist

new ones?

Do transportation policies and the future transportation system provide for local street networks (as opposed to the conventional hierarchical system of arterial, collectors, and local streets)?	Master Plan	✓
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Do development regulations have some requirement to consider and if appropriate provide for new local streets at designated intervals (e.g., every 1,500 feet)?	Various Land Use Regulations	✓
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***Commentary:** Over time, planners have learned that in addition to over reliance on automobile travel, a major cause of traffic congestion is the design of road systems. Conventional thinking, which is not considered smart growth, calls for local roads to empty onto collector roads that often empty onto a single (or few) arterials. Because so few major routes of travel are available, traffic is concentrated on these few roads, resulting in congestion. Smart growth demands a road network with more than one means of through travel in any given area.*

Does the master plan provide for an analysis of local street standards and recommendations for reducing excessive right-of-way and pavement widths?	Master Plan	✓
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Have street standards been revised to lower any excessive requirements for local subdivision streets?	Various Land Use Regulations	✓
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***Commentary:** Many suburban street standards require excessive pavement widths for streets (e.g., from 29 to 36 feet). Smart growth means local streets are placed on a “diet” so that “skinny” streets result. Narrowing required pavement width (e.g., to 24 feet or less) reduces development costs and impervious surfaces, and may increase safety by lowering vehicle speeds.*

Are sidewalks required within new residential subdivisions (in town center)?	Subdivision Regulations	✓	At the option of the Planning Board.
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Do land use regulations encourage or require the provision of bike paths in accordance with a bikeway master plan?	Various Land Use Regulations	✓	At the option of the Planning Board
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Do development regulations require the installation of a sidewalk along existing public streets abutting the development, where such sidewalk does not already exist (in town center)?	Various Land Use Regulations	✓	At the option of the Planning Board.
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Do subdivision regulations allow the planning board or local governing body to require the connection of subdivision streets to existing streets and the stubbing of streets to allow connections to future subdivision developments?	Subdivision Regulations	✓
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Do land use regulations encourage, if not mandate, the provision of interparcel connections between individual developments, where compatible?	Various Land Use Regulations	✓
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Comprehensive Smart Growth Audit Checklist

Commentary: Smart growth includes the objective of reducing reliance on major thoroughfares. Requiring driveways to connect with adjacent store parking lots, for example, is one way to reduce traffic on nearby thoroughfares.

Are land use regulations “transit-friendly” or “transit supportive”?	Various land use regulations	✓	Not applicable at this time.
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Commentary: Development near rail stations and along bus routes need to be planned for the transit user. Smart growth here means requirements that pedestrian facilities connect from the transit user rather than the automobile. Various design changes are needed to make developments friendly to the transit user who will always approach a bus stop or train station on foot. For instance, large building setbacks from the major thoroughfare with parking lots in front and no designated pathways on-site make for a “pedestrian hostile” environment which is counter to the principles of smart growth. Land use plans and regulations also need to ensure a certain density threshold in the area of rail stations and bus routes to ensure they have minimum ridership levels.

Parking

Do parking regulations require excessive on-site parking requirements?	Zoning Ordinance	✓	
Do land use regulations include maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements?	Zoning Ordinance	✓	
Do parking regulations provide for reductions of on-site spaces in places where transit is available?	Zoning Ordinance	✓	The opportunity for reductions is not based on transit availability.
Is on-street parking allowed in places where it can be safely provided, such as in downtown areas and pedestrian retail districts?	Zoning Ordinance	✓	

Commentary: Planners and policy makers now realize that minimum parking requirements in land use codes have been excessive, as evidenced by the vast numbers of unused parking spaces in many parking lots. Smart growth means the reduction of excessive parking requirements and the creation of maximum parking thresholds for commercial, residential, and other developments.

Do engineering construction specifications for parking lots allow for porous pavements where appropriate?	Zoning Ordinance	✓	
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Commentary: Porous pavements are environmentally smart because they allow the flow of stormwater into the ground, rather than as polluted runoff into streams and/or detention structures. There has been little research, however, to show that these pavements are viable alternatives to impervious surfaces. Generally, porous pavements are not designed to handle heavy loads such as garbage trucks. Practices today generally limit porous paving materials to overflow parking and areas that are not heavily used. Porous pavements also require provisions for cleaning or vacuuming the “pores”; without regular maintenance, they will become clogged and will no longer function as designed. Pavement engineers should be consulted when considering regulations allowing porous pavements.

Water, Sewer, and Other Infrastructure

Does the master plan provide clear discussions of how water and sewer infrastructure policies are tied to the goals and objectives of the land use	Master Plan	✓	
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Comprehensive Smart Growth Audit Checklist

plan? Transportation plan?

Do water and sewer facility master plans provide for the systematic extension of future trunk water and sewer extensions into areas designated for development in the short-term versus allowing such lines to be extended without restraint anywhere in the community?	Water/Sewer Plan	✓
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Commentary: Some communities designate “urban service boundaries” beyond which the local government will not extend public water and sewer lines. Smart growth means tying facility planning and land use together. Controlling infrastructure is one of the most powerful means of guiding the urban form of a community.

Are master plan policies consistent with the local school system’s school-siting policies?	Master Plan	✓
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Permitting Process

Have land development permitting processes been comprehensively reviewed to identify opportunities for eliminating duplication, unfairness, excessive and unnecessary requirements, etc.? If so, have inefficient processes been reformed?	Special Study/ Various Land Use Regulations	✓
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Does the community’s building code provide flexibility in restoring historic structures as opposed to rigid requirements that discourage such restoration?	Building Code	✓
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Regionalism and Intergovernmental Relations

Does the master plan place the community within the context of the region in which it is located?	Master Plan	✓
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Does the master plan recommend intergovernmental agreements where needed to foster cooperation aimed at attaining mutual goals of community building?	Master Plan	✓
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Do master plan policies reflect notions of social equity and environmental justice?	Master Plan	✓
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2003 Master Plan Survey Results

For the Town of Peterborough

Compiled by:

The Office of Community Development

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Introduction

In the winter of 2002-3, a series of public “visioning meetings” were held in which the citizens of Peterborough, with the assistance of a facilitator, attempted to reach a consensus on a vision for Peterborough’s future. A vision for the future is both a necessary and legally required foundation for a new master plan, which in turn is the foundation document from which new zoning ordinances arise.

Although attendance at the visioning sessions was surprisingly good and consensus was reached on many issues, it was felt by the Master Plan Steering Committee that more input from residents was needed to guide the drafting of a new master plan. A survey was developed and mailed to approximately 2500 Peterborough households in May 2003. The Office of Community Development received back 520 completed surveys, a 20% return rate. This document summarizes and interprets the results of the survey.

Part I summarizes information about respondents and is useful in showing us the demographics for those who have participated in the survey.

Part II assesses the issues of Open Space and Historic Preservation and discusses the use of tax money, grants, or other public financing to preserve open space.

Part III. The Transportation portion of the survey is devoted to issues of roads, sidewalks, bicycle lanes, and public transportation. This section also addresses the reduction of greenhouse gas emissions, which is an important transportation-related environmental issue.

Part IV. The Housing section of the survey asked questions about supporting housing for those who are under-served, a greater mix of housing types, and appropriate housing for senior citizens. Also addressed were mother-in-law apartments in single family homes and locating more senior housing near downtown. Another question of the Housing section of the survey included the concept of “infill¹”, which confused several respondents and so a definition has been provided (see footnote.)

Part V. The Water Resources section of the survey provided valuable data about water conservation and private wells in town. This will help the town as it investigates and analyzes water supplies, and makes policies about water conservation.

Part VI of the survey will help the town in determining an optimal rate and type of growth. This is an especially important issue in the context of the subdivision moratorium now in effect.

Part VII. The section on Economic Growth and Downtown Business Activity helps to determine citizens’ feelings about where community services should be located, how the town should guide its economic development, and what types of businesses Peterborough should attract. This last question allowed people to write in their own ideas for new businesses in the *other* category.

¹ The use of vacant land and property within a built-up area for further construction or Development, especially as part of a neighborhood preservation or limited growth program. (www.dictionary.com)

Part VII-A. A section on Home-Based Businesses helps the town to create better policies and services for those who work at home. Issues such as cell phone reception, internet connectivity, and opportunities for expansion into commercial locations in Peterborough will be given priority for resolution based upon survey respondents' answers to those questions.

Part VIII. The final section covers Trade-offs. The overall framework for this section involves rating importance of those areas covered in the survey and prioritizing public spending to meet certain aims.

The totals given in the tables often differ from the total number of survey respondents because some respondents chose not to answer every question. Any percentages given in this text were taken by dividing the total number of responses for each specific question by the number of responses for each choice in the question.

Part I:

Demographic Profile of the Respondents

This section of this survey provides data about citizens who made the effort to express an interest in the community's development. Respondents were fairly evenly distributed between long term residents and more recent arrivals. This is an encouraging result because it means that the survey has captured input from a broad cross-section of the community. The age range of respondents is somewhat skewed, but not unusual in surveys of this type. 41% of those who responded were over the age of 65.

<i>I. 1. How long have you lived in Peterborough?</i>	
< 5 years	94
5 - 10 years	90
11 - 25 years	150
26 – 50 years	115
51 + years	39
Total	488

<i>I. 2. How old are you?</i>	
15 - 24 years	4
25 -34 years	34
35 - 54 years	154
55 -64 years	94
65 + years	202
Total	488

Seventeen percent of respondents are involved in Town Government in some capacity. Nearly half of all respondents are active in a service and/or religious organization. Thirty-one percent of respondents are not actively involved in any of the listed community activities.

<i>I. 3. Are you actively involved in community activities?</i>	
Town Government	91
Recreational	122
Service/Religious	218
Not Involved	162
Total	593

Comments: Some additional community activities that people are involved in are community service clubs, chamber of commerce, and schools.

Part II:

Open Space & Historic Preservation

The residents of Peterborough placed a high value on open space and recognized it as essential to maintaining their quality of life. The Contoocook River is seen as a valuable natural resource which forms the geographical “spine” of the town and defines much of our open space.

Respondents were evenly divided on the question of using local revenues to preserve open space. About 47% said they would like to use tax money to preserve open space and 46% were opposed. A much higher proportion (82%) of respondents favored expenditure for open space when the source of funding did not involve taxation.

<i>II. 1. Use taxes or other local Revenue to buy land or development rights to preserve open space?</i>	
Yes	186
No	182
No Opinion	32
Total	400

<i>II. 2. Seek grants to work with existing organizations to buy land or development rights to preserve open space?</i>	
Yes	412
No	70
No Opinion	18
Total	500

<i>II. 3. Publicly finance the protection of historically significant properties?</i>	
Yes	273
No	162
No Opinion	60
Total	500

Interestingly, 55% of respondents would like to publicly finance the protection of historically significant properties, and only 32% were opposed. Peterborough has many significant historical properties that give the Town its great character and charm. Results from the visioning meetings put a priority on preserving the historical character of the downtown area. This is in keeping with so-called *Smart Growth* principles which are designed to mitigate the negative effects of sprawl or uncontrolled growth.

<i>II. 4. Require that large new developments include permanent open space?</i>	
Yes	403
No	80
No Opinion	21
Total	504

An overwhelming 80% of our respondents were in favor of requiring permanent open space in large new developments. Only eighty individuals (16% of respondents) were opposed to this requirement.

In regard to recreational activities, 53% of respondents favored increased development of trails, while 32% were opposed. Similarly, 56% of respondents favored designating scenic roads; 24% were opposed and 20% had no opinion on the subject.

<i>II. 5. Develop more trails for uses such as horseback riding, walking, biking, and cross country skiing?</i>	
Yes	268
No	161
No Opinion	73
Total	502

<i>II. 6. Consider designating roads as scenic?</i>	
Yes	281
No	123
No Opinion	102
Total	506

Comments: Some respondents commented that the Town can use tax money if something else is re-budgeted, though more information was needed beyond the scope of question II 1. Some people stated that there should be no “large new developments” as polled in question II 4. If trails were developed, it has been suggested that only volunteers be used in the development of these resources.

Part III: Transportation

The Transportation section of the survey helps the Town set priorities in this very important section of the Master Plan. According to the visioning results, pedestrian and bike paths are a priority for downtown. A lack of parking spaces in the Downtown and thru-traffic from Routes 101 and 202 were identified during the visioning process as two major transportation-related issues.

<i>III. 1. Road maintenance and drainage?</i>	
Yes	296
No	127
No Opinion	74
Total	497

<i>III. 2. Bicycle lanes on key connector roads?</i>	
Yes	244
No	177
No Opinion	81
Total	502

Sixty percent of those polled would like more resources devoted to road maintenance. Forty-nine percent would also like to see bicycle lanes on key connector roads. According to the visioning results, the idea of “traffic calming”, when developed according to efficient planning techniques, could allow for safer biking on the area’s scenic roads, while reducing wear and tear on well-traveled roads.

On the question of whether or not the Town should construct sidewalks in residential neighborhoods, the respondents were nearly evenly divided; 41% were in favor of more sidewalks, while 45% were opposed.

<i>III. 3. Sidewalks in residential neighborhoods?</i>	
Yes	206
No	229
No Opinion	69
Total	504

More than half of the respondents surveyed (51%) were in favor of adopting policies to reduce greenhouse gas emissions from town vehicles, demonstrating a concern for air quality and climate change issues. When asked about the development of a public transportation system, however, 48% were opposed and only 34% were in favor. One comment from a respondent indicated that this question may not have been very clear, however. This respondent was concerned as to whether this question was referring to a local bus system or more developed bus and train services serving the region.

<i>III. 4. Policies to reduce greenhouse gas emissions from town vehicles?</i>	
Yes	258
No	163
No Opinion	87
Total	508

<i>III. 5. A local public transportation system?</i>	
Yes	170
No	241
No Opinion	89
Total	500

Comments: A citizen has expressed a concern that the roads in winter are not cleared well enough, resulting in safety issues. Additional safety issues mentioned concerned the lack of enforcement of pedestrian rules and biking rules. It is thought that if these rules are enforced there might not need to be additional spending for bike lanes and sidewalks.

Part IV: Housing

According to the results of the visioning meetings, there is a need for more choices of housing type in order to serve the changing demographic profile of the Town. There is no one type of housing that can meet the needs of the whole population.

<i>IV. 1. Support housing affordable to moderate-income people of all ages?</i>	
Yes	384
No Opinion	42
No	74
Total	500

<i>IV. 2. Support senior-oriented housing in or near downtown or village areas (e.g. West Peterborough, the hospital?)</i>	
Yes	399
No	66
No Opinion	35
Total	500

Seventy-seven percent of those who responded to this survey support housing affordable to moderate income people. The integration of various types of housing typically broadens and strengthens the economic base for the town. According to several concerned citizens' comments in our survey, Peterborough is in danger of becoming a "bedroom community" for commuters who work in other places. Eighty percent of respondents were also in favor of supporting senior-oriented housing in or near downtown and the village areas. Only 13% of those surveyed were opposed.

<i>IV. 3. Adopt zoning that encourages the inclusion of some affordable housing units in new residential developments?</i>	
Yes	308
No	132
No Opinion	49
Total	489

<i>IV. 4. Adopt zoning that encourages "infill" housing in existing developed areas and discourages development on large tracts of open space?</i>	
Yes	282
No	135
No Opinion	61
Total	478

<i>IV. 5. Adopt zoning that allows a mix of housing types (e.g., single family, multi-family) in residential developments?</i>	
Yes	307
No	131
No Opinion	50
Total	488

Questions I.3-5 asked respondents their opinions on zoning issues relating to housing. Sixty-three percent of respondents favored adopting zoning that encourages the inclusion of some affordable housing units in new residential developments. Similarly, 63% of respondents favored adopting zoning that allows for a mix of housing types in residential developments. Twenty-seven percent of respondents were opposed to both of these ideas.

More than half of those responding to question IV. 4. (59%) favored adopting zoning ordinances that encourage infill housing in existing developed areas and that discourage development on large tracts of open space. 28% of respondents were opposed, while 13% expressed no opinion.

<i>IV. 6. Should the Town make it easier to have a “mother-in-law” apartment in a single-family home?</i>	
Yes	384
No	54
No Opinion	56
Total	494

Comments: Does affordable housing mean “rented housing,” or does it mean affordable property? As for the question of infill, a citizen has suggested that the town allow for this kind of development, but not “insist upon it.” Another citizen has pointed out that existing by-laws allow for apartments for family members, including mother-in-laws.

Part V: Water Resources

Peterborough is nestled in a valley defined by the Contoocook River. The surrounding landscape is dotted with numerous freshwater lakes, ponds, and marshes, making Peterborough rich in surface water resources. Below the surface are several large aquifers, which many residents feel strongly about protecting. Further hydrologic studies (especially in East Peterborough) and the need for new stormwater regulations have been identified as priorities by survey respondents, the Town Engineer, and the Water Resources subcommittee of the Master Plan Steering Committee. Protecting the future of the water and sewer infrastructure is identified as a high priority.

<i>V. 1. Investigate and secure additional water supplies to serve Peterborough residents and businesses?</i>	
Yes	383
No	41
No Opinion	63
Total	487

<i>V. 2. Encourage or enforce more water conservation?</i>	
Yes	357
No	84
No Opinion	53
Total	494

According to question V.1., the respondents' opinions are in line with the visioning results in that 79% favored investigating and securing additional water supplies. In addition, 72% of the respondents would like to see creation and enforcement of water conservation measures.

<i>V. 3a. Do you have a private well?</i>	
Yes	168
No	299
Total	467

<i>V. 3b. If you have a private well, for what purposes is it used for?</i>	
Landscaping	52
Equestrian	22
Home Water	151
Total	225

<i>V. 3c. Has your well water ever run dry?</i>	
Yes	9
No	155
Total	164

<i>V. 3d. Have you ever had your well water tested?</i>	
Yes	145
No	27
Total	172

Respondents were evenly divided (50%) on the issue of using tax dollars to offset the cost of connecting private septic systems located within water supply protection areas to the municipal system.

<i>V. 4. Would you support using tax dollars to offset the cost of hooking private septic systems located within water supply protection areas to the municipal system?</i>	
Yes	207
No	206
Total	413

Comments: The question of water resources involved for one citizen the resolution of the Hunt road issue. On this same issue it has been suggested that the North Well be fixed but the South Well not be used because of possible concern over citizens getting cancer. There is some concern over selling the area's water resources. There is a concern over using tax dollars to offset the costs of hooking up private systems to the public system. Those citizens who have problems with their private systems and need to hook up to the public system should be help bear the cost of making the necessary corrections.

Part VI: Growth

The majority opinion favored identifying specific areas of town for particular types of development, and considering steep slopes and wetlands as criteria when setting lot sizes. In the first two questions, over 80% of the respondents were in favor of these new guidelines for development (85% and 82%, respectively).

<i>VI. 1. Identify areas of Town where particular types of development would be considered appropriate?</i>	
Yes	403
No	46
No Opinion	23
Total	472

<i>VI. 2. Take into consideration such factors as steep slopes and wetlands when setting minimum lot sizes in the Rural District?</i>	
Yes	399
No	63
No Opinion	26
Total	488

Questions VI. 3a-f asked respondents to identify an appropriate rate of growth for Peterborough. (Note that some respondents identified more than one rate as appropriate and/or acceptable; thus, the percentages do not sum to 100%.) Thirty-one percent felt that the amount of growth in Peterborough should decrease; 60% felt it should remain the same; 51% favored slight growth; 39% favored moderate growth; and 18% felt that unlimited growth was acceptable. The comments listed below were taken directly from individual surveys and are listed below the question to which they correspond.

<i>VI. 3a. Grow at what rate? Decrease?</i>	
Yes	72
No	135
No Opinion	22
Total	229

- “What the market will bear with appropriate ordinances in place”
- “Recognize that unless you encourage business and services you’ll have a ghost town – in five years – the services have decreased”
- “Decent shopping exists and the grass is more important than the people”
- “This is the 21st century – open your eyes”
- “More middle class shops”

<i>VI. 3b. The same rate of growth as 1990 - 2000</i>	
Yes	179
No	91
No Opinion	26
Total	296

- “Not all specialty stores”
- “No Policy – This is America!”
- “Monitored growth – re effect upon taxes, water supply, traffic, etc.”
- “Moderate growth, provided water and waste services are available”
- “Moderate but with similar business and revenue growth to balance creation and use of resources”

<i>VI. 3c. Slight growth?</i>	
Yes	130
No	97
No Opinion	30
Total	257

- “Push for commercial growth”
- “How do you propose to limit natural growth?”
- “That which the infrastructure can support”

<i>VI. 3d. Moderate growth?</i>	
Yes	97
No	127
No Opinion	26
Total	250

- “Let us truly recognize the dire need for lower rent housing units and housing to purchase for adults of any age who cannot afford the insane price of housing in the Peterborough Region.”
- “Not all adults (regardless of their financial status) wish to retire to River Mead – there needs to be a happy medium.”

<i>VI. 3e. Unlimited growth?</i>	
Yes	39
No	166
No Opinion	17
Total	222

- “In regard to commercial development and newly acquired property but not private property or currently owned.”
- “A mix of business (commercial and retail) to provide jobs for the community and services for town.”
- “Take each case one by one, don’t set so many restrictions!”
- “focus on business growth, 300-400,”
- “Same growth rate as 1990-2000 as long planning has gone into balancing growth vs. services needed in town.”

<i>VI. 3f. Other?</i>	
Yes	7
No	9
No Opinion	4
Total	20

Comments against Growth

- “Very low growth achieved through re-development of already existing developed areas, 1% per year”
- “Limit less than 25 new units per year”
- “Controlled growth allowed by amount of available water”
- “Maintaining open spaces for wildlife”
- “Limiting sizes of housing developments”
- “Requiring developers to set aside open space and avoid direct lot access on main roads”
- “Avoid spot zoning when a developer applies pressure to favor his land.”
- “Its use must be sensible and encourage sensible growth patterns”
- “Safe rate, private farm stands and local arts and crafts, this is America”
- “How many people left?”
- “Unsure, according to our water and school resources”
- “.5% average annual growth”
- “Maintain current population 290 people.”
- “Stop outsiders from moving in and trying to take over!”
- “Really depends on the infrastructure ability to handle i.e. adequate water, roads, schools, etc.”
- “We were residents of Cape Cod for over 20 years and have seen the results of avoidance of appropriate planning and zoning and the result”
- “A HORRIBLE traffic situation” (3%)

Comments: A concern was voiced that planning for developments has already taken place. Some citizens would like to see a decrease in the growth rate of the town. They do not want to see a thousand new people per decade in Peterborough.

Part VII: Economic Development And Downtown Business Activity

Seventy percent of respondents said that they would like to provide more opportunities for commercial development. Sixty-two percent of the respondents would also like to make the commercial and business segment of the tax base larger.

<i>VII. 1. Provide more opportunities for commercial development?</i>	
Yes	350
No	111
No Opinion	39
Total	500

<i>VII. 2. Make the commercial/business segment of the tax base a larger percentage?</i>	
Yes	302
No	114
No Opinion	70
Total	486

The lack of adequate parking in the downtown area is an issue that was raised repeatedly during the community-wide visioning meetings. According to the survey results, however, only 42% of those polled felt that adding more parking spaces was the best solution to this problem; 46% answered “no” to providing additional parking spaces. Also during the visioning meetings, the idea of a shuttle service from the downtown area to the shopping plazas was suggested as a means of reducing traffic downtown. Only 33% of the survey respondents favored this idea, while 49% were opposed.

<i>VII. 3. Provide more parking in the downtown area?</i>	
Yes	158
No	176
No Opinion	45
Total	379

<i>VII. 4. Establish a shuttle service between downtown and the plazas?</i>	
Yes	163
No	243
No Opinion	85
Total	491

Forty-six percent of respondents felt that pedestrian and bicycle circulation patterns in the downtown area should be improved; 34% disagreed and 20% had no opinion.

<i>VII. 5. Improve pedestrian and bicycle circulation patterns in the downtown area?</i>	
Yes	176
No	132
No Opinion	77
Total	385

Encouraging mixed-use development was a recurring theme during the Town’s visioning meetings. When asked if the Town should encourage this type of development, however, only 41% of respondents were in favor. 40% were opposed and a rather large number of respondents (nearly 20%) had no opinion. The question did not offer any specific sites for mixed-use development, it is possible that this omission may have influenced the responses.

<i>VII. 6. Locate community services in the downtown and the plazas?</i>	
Yes	229
No	149
No Opinion	118
Total	496

<i>VII. 7. Sponsor or encourage mixed use development?</i>	
Yes	164
No	158
No Opinion	75
Total	397

Exactly half of the survey respondents felt that there was no need for the Town to staff a full-time business retention and recruitment position. 29% were in favor of this idea, and 21% expressed no opinion.

<i>VII. 8. Staff a full-time position to foster business retention and recruitment?</i>	
Yes	143
No	244
No Opinion	102
Total	489

The following is a list of businesses that respondents have suggested Peterborough have in the comment area of question (VII. 9.):

- Affordable men’s, women’s, and children’s clothing store (5)
- Ames (2)
- Automotive (1)
- Bakery (1)
- Cell phone tower (1)
- College (2)
- Department Store (5) (PSNH office building?) (Bring back Derby’s)
- Eco twist (1)
- Fast food (4)
- Fitness (2)
- General Large Manufacturing (6) (Add industrial condos)
- Medium Grocery store like A&P (2)
- New car sales and repair (1)

- Private schools (1)
- Restaurants (better), family restaurants (2)
- Rite Aid with new store (1)
- Service organization meeting place (2)
- Small conference center / performing arts center (1)
- Start-ups that actually move out of Whiton Blvd.
- Usable services and products at realistic prices
- Wal-mart (1) vs. No Wal-mart (2)

According to the tally results, those businesses which seem to be the highest priority are a grocery store, a department store, and a clothing store.

<i>VII. 9. What kind of businesses would you like to see more of in Peterborough?</i>	
B & B, Hotel	188
Grocery/Food	436
Publishing	199
Small Retail	279
Light Manufacturing	233
Research	228
Dept. Store	363
Restaurants	168
Clothing Store	294
Internet/Software	170
Service Businesses	183
Total	2741

Comments: A citizen would prefer there were no more strip malls in Peterborough, and that the use of vacant buildings and already existing commercially zoned areas be utilized. If parking was provided downtown, one citizen wonders where this would be developed as there seems to be a limited amount of space. Bus service to Boston was an interesting suggestion. Downtown to plaza needs a continuous sidewalk. Hiring a community business development person might be helpful, but it is suggested that this position either be part-time or be incorporated into the already existing Community Development Director position.

Part VII-A: Home-Based Businesses in Peterborough

One quarter (25%) of the survey respondents operate a home-based business in Peterborough. Of those individuals, half indicated that cell phone reception and coverage is a problem for their business. Additionally, 57% said that they do not presently have adequate rapid internet access. Sixty-three percent of respondents felt that the zoning in Peterborough was suitable for their home-based businesses. Only 17% indicated that they would move their home-based business into a commercial location if their operations expanded; 68% would not relocate to a commercial location.

<i>VII-A. 1. Do you presently have an in-home office, studio, or business; or do you telecommute?</i>	
Yes	136
No	315
No Opinion	2
Total	453

<i>VII-A. 2. Is cell phone reception and coverage a problem for your business?</i>	
Yes	87
No	78
No Opinion	14
Total	179

<i>VII-A. 3. If your business grows, are you likely to move to a commercial location in Peterborough?</i>	
Yes	31
No	122
No Opinion	26
Total	179

<i>VII-A. 4. Generally, is the Town's zoning acceptable to your business?</i>	
Yes	101
No	25
No Opinion	34
Total	160

<i>VII-A. 5. How long ago did you start a business in, or relocate a business to, your home in Peterborough?</i>	
< 1 yr.	16
1-2 yr.	16
3-5 yrs.	26
5-10 yrs	18
10 + yrs.	56
Total	132

<i>VII-A. 6. If the Internet is important to your business or home, do you have adequate rapid internet access?</i>	
Yes	63
No	82
Total	145

Comments: One person commented that cell phone coverage was a problem for their business “when on the road in Peterborough.” The lack of rapid internet access is a “huge” problem for one person’s business. Another respondent claims that “Adelphia prevented low cost cable modem access for years.”

Part VIII: Trade-offs

This section of the survey asked respondents to rank the importance of various projects involving public spending. Answers are ranked from most to least important.

<i>VIII. 1. Preserve buildings of historical or architectural interest?</i>	
Very Important	164
Important	201
Neutral	101
Not Important	36
Very Unimportant	16
Total	518

<i>VIII. 2. Preserve open space to protect wetland, water resources, and wildlife habitats?</i>	
Very Important	283
Important	139
Neutral	46
Not Important	36
Very Unimportant	11
Total	515

<i>VIII. 3. Preserve open space to maintain rural character?</i>	
Very Important	241
Important	131
Neutral	71
Not Important	49
Very Unimportant	16
Total	508

<i>VIII. 4. Acquire land for recreational needs?</i>	
Very Important	72
Important	153
Neutral	159
Not Important	89
Very Unimportant	36
Total	509

<i>VIII. 5. Increase the supply of parking in downtown Peterborough?</i>	
Very Important	108
Important	156
Neutral	125
Not Important	93
Very Unimportant	36
Total	518

<i>VIII. 6. Spend tax revenues to bury public utilities?</i>	
Very Important	39
Important	110
Neutral	164
Not Important	129
Very Unimportant	72
Total	514

<i>VIII. 7. Expand active recreation facilities, e.g., athletic fields, tennis courts?</i>	
Very Important	22
Important	104
Neutral	199
Not Important	139
Very Unimportant	43
Total	507

<i>VIII. 8. Support planning and growth management?</i>	
Very Important	197
Important	195
Neutral	71
Not Important	29
Very Unimportant	17
Total	509

<i>VIII. 9. Maintain streets, sidewalks, and parks?</i>	
Very Important	227
Important	247
Neutral	33
Not Important	7
Very Unimportant	2
Total	516

<i>VIII. 10. Acquire land for conservation or passive recreation?</i>	
Very Important	146
Important	134
Neutral	109
Not Important	80
Very Unimportant	39
Total	508

In five of the eleven Trade-off questions, more than 70% of the respondents answered important or very important:

- Maintain streets, sidewalks and parks 92%
- Preserve open space to protect wetlands, water resources and wildlife habitats 82%
- Support planning and growth management 77%
- Preserve open space to maintain rural character 73%
- Preserve buildings of historical and architectural interest 70%

In four of the Trade-off questions, less than 50% of the respondents answered important or very important. Those issues were:

- Build more bicycle and walking paths 45%
- Acquire land for recreational needs 44%
- Spend tax revenues to bury public utilities 29%
- Expand active recreation facilities 25%

<i>VIII. 11. Build more bicycle and walking paths?</i>	
Very Important	89
Important	145
Neutral	138
Not Important	74
Very Unimportant	72
Total	518

Comments:

- Don't preserve buildings of historical or architectural interest with town money.
 - Don't preserve open space for wetland, water resource, and wildlife habitats with town money.
 - Don't preserve open space to maintain rural character with town money.
 - Don't acquire lands for recreational needs with town money.
 - Please acquire habitats and preserve forests.
 - Peterborough needs soccer fields.
 - Town already has a lot of recreational lands.
 - Set up parking outside of Peterborough with regular shuttle service for in-town workers.
 - Spend tax revenues to bury public utilities in the future, but not right now.
 - Fix and maintain the recreation facilities that the town already has.
 - Do another study before supporting planning and growth management.
 - Besides maintaining streets, sidewalks, and parks, the Town should maintain state highways.
 - Would support acquiring conservation lands for passive recreation if it provides its own revenue.
 - Finish the bicycle and walking paths under development rather than building new ones.

Chapter 9: Historic Resources

- Relationship of the State Statutes to the Peterborough Master Plan
- Architectural Styles in Peterborough
- Overview of Preservation Techniques
- Strategies for Preserving Community Character
- Funding Sources for Historic Preservation

APPENDIX A:

Relationship of the State Statutes and the Peterborough Master Plan

Chapters 1-8 to Historic Resources

A. RSA 674:2

1. Sub-Section One - “The purpose of the master plan is to set down as clearly and practically as possible the best and most appropriate future development of the area under the jurisdiction of the planning board, **to aid the board in designing ordinances that result in preserving and enhancing the unique quality of life and culture of New Hampshire**, and to guide the board in the performance of its other duties in a manner that achieves the principles of smart growth, sound planning, and wise resource protection.”
2. Sub-Section Two - “The master plan shall be a set of statements and land use and development principles for the municipality with such accompanying maps, diagrams, charts and descriptions as to give legal standing to the implementation ordinances and other measures of the planning board. **Each section of the master plan shall be consistent with the others in its implementation of the vision section.** ... The master plan shall include, at a minimum, the following required sections:
 - (a) A vision section that serves to direct the other sections of the plan. This section shall contain a set of statements that articulate the desires of the citizens affected by the master plan, not only for their locality but for the region and the whole state. It shall contain a set of guiding principles and priorities to implement that vision.
 - (b) A land use section upon which all the following sections shall be based. This section shall translate the vision statements into physical terms. Based on a study of population, economic activity, and natural, historic, and cultural resources, it shall show existing conditions and the proposed location, extent, and intensity of future land use.
3. Sub-Section Three – The Master Plan may include the following sections:
 - (h) A section that identifies cultural and historic resources and protects them for rehabilitation or preservation from the impact of other land use tools such as land use regulations, housing, or transportation.

B. Peterborough Master Plan - Chapter 1

1. Comment on previous master plans: “A predominant theme for all three Master Plans was the protection of the Town’s natural resources, and the preservation of open space.”
2. Final paragraph: “This Plan [2003] carries forward the same recognition of the value of Peterborough’s special natural environment expressed since the first Master Plan was written. **In addition, there is a renewed appreciation of the historic village pattern of development. In keeping with that, much emphasis in the Plan is placed on enhancing these villages that already exist, and identifying possible emerging villages.** By creating opportunities for infill in these areas, the expectation is to relieve some pressure for development in the rural areas, thereby achieving balance in the overall plan of the Town.”

C. Peterborough Master Plan - Chapter 2 “A Vision for Peterborough”

1. The chapter alludes to RSA 674:2 “Vision” item; as above; then recounts the history of visioning sessions culminating in a policy statement in 1995 known as “The Town We Want.” The Master Plan reaffirmed the Vision as articulated in 1995.
2. “Getting the Town We Want” has eleven items, several of which pertain to historic resources:

- (a) “A Town which provides a wonderful physical setting of **historical neighborhoods, buildings, and streets, set at the confluence of rivers with the backdrop of the Monadnock highlands and the Wapack Range; compact** settlements closely connected to open space; and a broad diversity of environments.”
- (b) “A Town which has the rare combination of both intimate scale and **rich cultural opportunities.**”
- (c) “A Town with good prospects for growth, but not rampant character destroying growth. **Growth that is expected and wanted is much like that of the past, taking place at a moderate pace, in small increments, building on the qualities of what is there.** ‘No growth’ is unsustainable, often leading to decline, and rapid growth would transform the nature of the Town, no matter how well it is managed.”
- (d) “A Town which, while an important part of a larger region, **is itself a distinctive place, with unblurred edges, and with a character which is uniquely its own.**”
- (e) “A Town which is not only a physical place but is also a social community. **Residents take community for granted only at their peril,** for it is increasingly rare, even in rural settings, and is imperiled by technological and social change.”
- (f) “A Town attractive to and with opportunities for the youth it produces. No Town the size of Peterborough can have the diversity of opportunity and interests which would keep all its youth in place, but neither should it be accepted that ‘young people’ must be a major community export.”

D. Peterborough Master Plan - Chapter 2 “Vision Statements”

- 1. Here we have examples of areas where “Historic Resources” relates to other chapters of the Master Plan.
- 2. “Growth and Development”
 - (a) “The **historic character** of downtown plays a strong role in Peterborough’s identity.”
- 3. “Economic Vitality”
 - (a) “The **arts play a strong role** in Peterborough’s identity and in the business community; in turn, the business community is a strong supporter of the arts.”
 - (b) “All commercial/industrial developments must be carefully designed, in order to **harmonize and be consistent with the scale and character** of Peterborough.”
 - (c) “Concerns about ‘big box’ development need to be explored to understand the issue; e.g., it might be the **size of a building, it might be the look of the building.**”
- 4. “Open Space”
 - (a) “Open space is highly valued by residents and regarded as essential to maintaining **quality of life and the ‘look and feel’ of Peterborough.**”
 - (b) “Just as the Town plans for and invests in its built infrastructure, if Peterborough **plans for and invests in its natural infrastructure the ecological, social, and economic health of the Town can be better maintained.**”
 - (c) “**Preservation of open space** can be pursued strategically, following established priorities and assisted by a permanent Open Space Committee.”
 - (d) “The Contoocook and Nubanusit Rivers are important **natural resources that help to define the Town** and their water quality and shoreland need to be protected.”

5. "The Natural Environment"
 - (a) "Peterborough has a wealth of natural assets that can be protected and enhanced, while at the same time supporting economic vitality. They are: water resources, scenic views, sufficient open space, agricultural lands, open space lands, forests."

"Cultural and natural features that help to define the region, such as Class VI roads, stone walls, cellar holes, mill sites, barns, hayfields, orchards, etc."
6. "Population and Housing"
 - (a) "A new model of close-to-town **traditional neighborhoods** rather than disconnected, suburban models will help to control the cost of services and **maintain the attractiveness of the Town.**"
 - (b) "**The reuse and adaptation for housing of existing historical buildings and outbuildings, where feasible, is preferred over new construction.**"

"Appropriate land use regulations can guide new development at a rate and in locations that will maintain the **'look and feel of our Town.'**"
7. "Traffic and Transportation"
 - (a) "Streetscaping and landscaping of town streets create perceived friction/obstructions to both slow vehicles down and **enhance aesthetics.**"
8. "Water Resources"

E. The Master Plan Chapters

1. Each subsequent chapter contains items that relate to "Historic Resources" - only a few examples are included here.
2. "Open Space" Chapter - p. 4-20 has a side-box for definition of "Current Use", one of the preservation tools we shall include in our presentation.
3. "Traffic & Transportation" Chapter - p. 6-11 has a Table Inventory of Existing Bridges with map of bridges on p. 6-12.
4. "Land Use Plan" Chapter is one of the chapters most relevant to the "Historic Resources" chapter.

F. Chapter 8 - Land Use Plan

1. Table of Contents indicates relevance to our work.
2. Introduction - opening statement - p. 8-1: "In this chapter, vision statements are translated into a plan that depicts and describes the proposed location, extent, and intensity of future land uses in Peterborough. This section is, as required by the state statutes, based on a study of population, economic activity, **and natural, historic, and cultural resources (RSA 674:2, II (b))**. The section includes an analysis of existing land uses, developable land, development potential scenario, and the current zoning districts in Peterborough, as well as a review of earlier Master Plans and other plan recommendations. Implementation strategies recommended to accomplish the vision are addressed in a separate chapter."
3. Page 8-3. "Historic Development Patterns"

"Peterborough's development pattern can be described as having four components: (1) highway development along Routes 101 and 202; (2) village nodes; (3) neighborhoods; and (4) frontage development along the town roads. An examination of old town maps indicates that Peterborough always had a dispersed development pattern; this is likely because the Town was divided into lots as soon as the land grant was sold. A 1954 map does not look appreciably different in terms of dispersal than today's land use map. [No maps provided?]"

“The first Master Plan, written in 1974, identified five distinct villages or neighborhood areas; by 1992, those had increased to eight. The observation was also made in the 1992 Plan that the distinction between town and country had become blurred, with some areas connected by highway strip-development, a type of development not typical of an old-fashioned New England Village.”

4. Page 8-3 “General Land Use Pattern”

“Today, the general land use pattern is not appreciably different from that of 1992. As noted above, some of the village areas are connected by strip development and are not typical of an old-fashioned New England village. The remainder of the Town is still predominantly rural, although there are pockets of residential development throughout. The 1992 Master Plan provides a detailed description of these individual areas. This Plan utilizes findings of the 1992 Plan as a basis for the update.”

5. Pp. 8-13 to 8-15 - “Review of Earlier Plans and Recommendations”

(a) Has summary of the three past Master Plans and the so-called ‘Phil Herr Study.’

(b) Points out that earlier plans **provided an excellent inventory of community resources, but many of the detailed recommendations were not implemented.**

6. Pp. 8-16 to 8-25 “V. The Future Land Use Plan”

(a) Overall vision for the Town articulated in two components: **(1) Enhancing and Connecting the Villages; (2) Protecting the Natural Environment.**

(b) Districts defined [side bar with “Characteristics of Livable Neighborhoods”]

The Integrated Town Center

Downtown Peterborough

Grove Street Corridor

Village Commercial District

West Peterborough

Historic South Peterborough

Hospital District

7. Page 8-28 has Future Land Use Plan, Peterborough, 2003 with five Villages/Neighborhoods” identified on the map

Appendix B: Architectural Resources - Architectural Styles

Throughout the Town a panorama of architectural styles is evident. The following section provides an overview of the styles that figured prominently in the Town's architectural development and offers photo examples of each that are found in Peterborough.

➤ Early Period (Pre 1720)

The earliest structures erected by the settlers were undoubtedly log or plank houses, the evidence of which has all but disappeared or possibly been obscured under later building additions. The houses had to be 16 x 16 feet to meet the requirement for a settler's lot. Later dwellings emphasized symmetry, horizontal lines and limited classical detail. With few exceptions, these early houses faced north and south to maximize solar exposure, with the rooms grouped around a central fireplace/chimney block. Once the family was sheltered, erection of a barn was often the next priority for early residents, and on many homesteads today, the post and beam barn is the earliest surviving structure on the property.



➤ Georgian Style (1700-1780)

The first real architectural style to appear in provincial America, the Georgian style is embellished by ornament inspired by Italian Renaissance and English sources. The style is characterized by classical moldings, both inside and out, symmetrical facades, window caps and more elaborate doorways. Most often the Georgian house measures 2 ~/2 stories with five individual windows across the front and two windows deep on the side elevations. The roof can be either a gable or a hip (four slopes meeting at the ridge). The sliding sash windows may have anywhere from six to twelve panes of glass in each sash.



➤ Federal Style (1780 -1830)

The Federal style is in many ways a refinement of the preceding Georgian style, with somewhat lighter, more delicate ornament which often incorporates elliptical and semicircular fanlight shapes. Like the Georgian, the Federal style building almost always displays a five bay, symmetrical facade. The most common Federal house type is the two story dwelling with hip or gable roof. On brick Federal houses the decorative pieces over the windows (known as lintels) are often cut on a diagonal. The hallmark of the style is the fanlight or fan over the doorway with partial sidelights flanking the door. Inside the style may be expressed in a spiral or elliptical stairway.



➤ Greek Revival Style (1830-1860)

Loosely based on the look of a Greek temple front, the Greek Revival style is typified by a pedimented facade supported by colossal columns. While New Hampshire Greek Revival houses often display columned porches, the style was also expressed in other ways including flat headed windows and doors, heavy



entablature moldings under the eaves and recessed doorways with corner block moldings and full sidelights. Indeed, the most important legacy of the Greek Revival style is the shift from earlier broad sided structures with central entrances to the front gabled house with an off-center, side-hall entrance. Contrary to popular belief, it was during this period that buildings were often first painted white to simulate the marble of classical antiquity. Many Greek Revival houses display Federal decorative elements and therefore may be considered as transitional.

➤ **Gothic Revival Style (1840-1870)**

The influence of Andrew Jackson Downing's Swiss cottage styles created a romantic style of building. Using new milling and saw technology, houses were taller, with steeply-pitched intersecting gables that were complicated and picturesque. A peaked gable roof was located over the entrance porch and the doorway was often Gothicized. The windows were taller and headed with gothic arches or the flat Tudor swag-like molding. The siding was often vertical board and batten. Elaborate carvings were added to the porch or gable. Colors were earthtones.



➤ **French Second Empire (1860-1875)**

In rural areas such as New Hampshire, the distinguishing feature of the Second Empire Style is the mansard roof (with sloping walls), which is often decorated by dormer windows. Additional details may also include projecting overhangs with large brackets and bay windows. The mansard roof became a national style, especially for civic buildings. Before the fire in the downtown following the 1938 hurricane, Main Street was lined with them. The form was a classical block with central entrances and often with porches or porticoes. Frequently the roofs were slate, with decorative patterns and dormers. Colors varied from earthtones to bright contrasting colors.



➤ **Italianate (1860-1880)**

In larger metropolitan areas, the Italianate house usually displays a rectangular form with wide eaves, tall first floor windows and bay windows, all topped by a low pitch roof with cupola. In Peterborough, the last half of the nineteenth century marked a period of increased building activity and builders sought to apply elements of the latest styles to the simple gable front house form. Decoration common to this period includes square or turned porch posts, bracketed cornices, and single story bay windows. Colors were earthtones with contrasting trim.



➤ **Queen Anne Style (1880-1900)**

The term Queen Anne can be broadly applied to many late nineteenth century buildings. A most varied and decoratively rich style, the Queen Anne is characterized by asymmetry and a variety of forms, textures, materials and colors. Towers, turrets, tall chimneys, porches, bays and projecting pavilions are common. Stained glass, terra cotta trim and a variety of window types are also often used.



➤ **Victorian Stick Style (1860-1900)**

More delicate, more vertically-oriented than the Queen Anne, this was named after the stick work that outlined most of the walls, gables, gable ends, porches. Windows were taller and narrower. Various types and patterns of windows appear in one house. Porches may be small or extended. Triangular-shaped gable ends inspired by Andrew Jackson Downing Swiss cottages.



➤ **Victorian Shingle Style (1890-1914)**

A solely American domestic wood style derived from simple fishermen's and farmer's wood-shingled cottages. Evolving to be as whimsical and decorative as the Queen Anne, it was frequently used in summer communities such as Bar Harbor, Dublin and Newport. Roof slopes vary and extend down lower than the eave for porches. The window upper sash is divided and the lower sash may be single pane. The entrance is frequently through a porch.



➤ **Classical Revival (1890-1915)**

A late 19th century renewed interest in historical architecture also manifested itself in the Classical Revival style which focused on Greek and Roman architecture. This style is typified by symmetrical buildings with entrances, and heavy classical moldings and ornament. Windows were large and the entrance was in the center, set off by pilasters or porches. Across the country, the Classical Revival style was used to evoke a reverence for knowledge and learning and was commonly used for the designs of libraries.



➤ **Colonial Revival (1880-1930)**

In contrast to the exuberance of the Queen Anne style, the Colonial Revival style marked a revival of earlier styles such as the Georgian and Federal of the late 18th and early 19th centuries. In contrast to colonial buildings however, the Colonial Revival often displays an asymmetrical profile with stylistic details often exaggerated, out of proportion and combined in a decidedly contemporary fashion. Colonial Revival buildings of the 1890s did not attempt to be accurate copies but were free interpretations of earlier styles with details inspired by Colonial prototypes. Beginning about 1910, Colonial Revival buildings were more carefully researched and often exhibited more historically accurate proportions and details. Later Colonial Revival style houses include Cape Cod dwellings.



➤ **Georgian Revival (1880-1930)**

This style was inspired by earlier colonial and English architecture, simpler forms of the Renaissance, Sir Christopher Wren and the patriotic meaning of 1776. The style was based on rules, propriety, and symmetry. Warm brick colors were used for domestic buildings as well as civic buildings.



Appendix C: Overview of Preservation Techniques

A. State and Federal Programs

1. The Secretary of the Interior's Standards for Rehabilitation

The Secretary of the Interior is responsible for establishing standards for all programs under Departmental authority and for advising Federal agencies on the preservation of historic properties listed or eligible for listing in the National Register of Historic Places. The Secretary's Standards for Rehabilitation are guidelines originally developed to evaluate whether the historic character of a building is preserved in the process of rehabilitation. Although used extensively in projects seeking federal tax credits for historic rehabilitation of income-producing properties, the standards have also been adopted by a number of historic district commissions across the country and are now widely recommended for all work on historic properties.

2. National Register of Historic Places

The National Register of Historic Places is the official list of the Nation's resources worthy of preservation. Established by the National Historic Preservation Act of 1966 and administered by the National Park Service within the Department of the Interior, the Register lists properties of local, state and/or national significance in the areas of American history, architecture, archaeology, engineering and culture. Properties may be nominated individually, or in groups, as districts or as multiple resource areas and must generally be older than 50 years.

The primary benefit of National Register listing is the recognition it affords and the appreciation of local resources, which is often stimulated through such recognition. The National Register also provides for review of effects which any federally funded, licensed or assisted project, most notably highway projects, might have on a property which is listed on the Register or eligible for listing. Register standing can also make a property eligible for certain federal tax benefits (investment tax credits) for the rehabilitation of income-producing buildings and the charitable deduction of donations or easements.

Contrary to many commonly held beliefs, National Register listing does not interfere with a private property owner's right to alter, manage, dispose of or even demolish his property unless federal funding, licensing or assistance is involved. Nor does National Register listing require that an owner open his property to the public. For a single, privately-owned property with one owner, the property will not be listed if the owner objects. A National Register district must have the approval of a majority of property owners in the district. National Register listing can be an important catalyst to change public perception and increase historic awareness but cannot in itself prevent detrimental alterations or demolition. Yet, it remains an important first step toward historic awareness, respect and protection.

3. The State Register of Historic Places

This is one part of the state's efforts to recognize and encourage the identification and protection of historical, architectural, archeological and cultural resources. These irreplaceable resources may be buildings, districts, sites, landscapes, structures or objects that are meaningful in the history, architecture, archeology, engineering or traditions of New Hampshire residents and communities. Listing in the State Register can contribute to the preservation of historic properties in a number of ways. For more information refer to the New Hampshire Division of Historical Resources <http://www.state.nh.us/nhdhr>.

4. Section 106 – Historic Preservation Review and Compliance

All federally-funded, assisted, and licensed activities must take into account properties that are listed in, or determined eligible for, the National register, so that any adverse effects can be avoided or mitigated. This procedure does not, and is not meant to, stop projects; instead, it provides a conflict-resolution and problem-solving system to balance the public interest in historic preservation with the public benefit from governmental programs. As with the NH DOT-funded surveys, information and opportunities identified through the Review & Compliance process can be used to advance local preservation and land-use planning activity, or to enhance preservation elements of multi-purpose projects.

B. Local Programs

1. Historic District Designation/Historic District Commission

◆ Historic Districts: Locally-Designated

Local designation of an historic district is the most comprehensive mechanism for protecting historic structures and areas. In concept an historic district is similar to zoning. Within the designated bounds of a district, alteration, construction and demolition are regulated by a citizen commission (RSA 674:45-46).

The purpose of a locally-designated historic district is to preserve the significant character of the district, while accommodating change and new construction in accordance with regulations tailored to local consensus.

Historic districting is not a substitute for zoning or for community planning. The district and the ordinance must be related to a master plan, and must be adopted by ballot vote of the community. The historical resources survey of your community will suggest areas where districts might be appropriate.

◆ Historic Districts: National Register-Listed

A district including buildings and setting of local, state or national significance in terms of history, architecture, engineering, archeology or culture may be listed on the National Register of Historic Places. National Register listing recognizes properties worthy of preservation and serves to foster local respect for them. It does not, however, impose any restriction or limitation on the use of private or non-federal property unless federal funds or programs are involved.

An historic district may be either a locally-designated district or National Register district, or both. Historic districts of either type have the same general purpose; but they function in different ways and provide very different kinds of protection. In many cases it is most effective for significant areas to be designated as local districts and listed on the National Register.

2. A Certified Local Government Program for Historic Preservation

The national historic preservation program operates as a partnership between the federal government and the states. Participation by local governments (counties and incorporated cities and towns) is now an option. "Certified Local Governments" are assigned responsibility for review and approval of nominations of local properties to the National Register of Historic Places, and become eligible to apply for earmarked matching funds.

To be certified, a local government must, at a minimum, enforce appropriate state or local legislation for designation and protection of historic properties; establish an adequate and qualified historic preservation review commission; maintain a system for surveying and inventorying historic properties; and provide for adequate public participation in the local historic preservation program. Qualifying governments are certified by the State Historic Preservation Officer and the Secretary of the Interior.

C. Economic Factors/Tax Incentives

1. Tax incentives for rehabilitation of historical buildings

Since 1976 the Internal Revenue Code has contained incentives to stimulate capital investment in income-producing historical buildings and revitalization of historical communities. The Tax Reform Act of 1986 made significant changes in these incentives. At present a 20% tax credit is allowed for "substantial rehabilitation of historic buildings for commercial, industrial and rental residential purposes"; a 10% tax credit is allowed for "substantial rehabilitation for nonresidential purposes of buildings built before 1936." A straight-line depreciation period of 27.5 years is allowed for residential property and 31.5 years for nonresidential property "for the depreciable basis of the rehabilitated building reduced by the amount of the tax credit claimed." The 10% tax credit is not available for rehabilitation of "certified historic structures."

A "certified historic structure" is defined by IRS as 'any building that is listed individually in the National Register of Historic Places, or located in a registered historic district and certified as being of historic significance to the district.'

A "certified rehabilitation" is "any rehabilitation of a certified historic structure that is certified being consistent with the historic character of the property and, where applicable, the district in which it is located."

Because the provisions of the Tax Reform Act of 1986 are complex, "individuals are strongly encouraged to consult legal counsel, a professional tax advisor or the appropriate IRS office for assistance determining the tax consequences" of these provisions.

2. Discretionary Preservation Easement for Historic Agricultural Structures

The Discretionary Preservation Easement for Historical Agricultural Structures (RSA 79:D) was established in 2002 to encourage the preservation and restoration of New Hampshire's rich and textured agricultural past.

The means, by which this is achieved, is through a two-fold benefit. The first is the reduction of assessed valuation of the structure within a range of 25 to 75% at the discretion of the local Board of Selectmen. This percentage of reduction is arrived at through a series of qualifying questions regarding the Structure's public benefit.

The second advantage and perhaps the more motivating, is the freezing of assessed valuation despite improvements to the structure. This means that for the life of the easement, the structure cannot increase in value due to physical improvement in the restoration process.

The hopes of the founders of this statute are that this will promote the rescue and conservation of some of New Hampshire's greatest historical assets.

3. Current Use

Current Use is a classification of property that allows the owner to protect their open space and receive a tax benefit for doing so. This is achieved by registering a parcel of ten or more acres with the state which places stringent restrictions on the use of the property. A property placed in Current Use can only be used for very specific activities and cannot be built upon nor have any existing structures. Currently 51% of the States acres are in Current Use classification showing that it is a powerful tool in helping to conserve New Hampshire's open spaces.

Appendix D: Strategies for Preserving Community Character

➤ **Subdivision Regulations**

A municipality that exercises no other control of development usually has subdivision regulations, which can be implemented without adopting zoning. Subdivision regulations address layout, access and servicing. Their purpose is to ensure that new development functions safely and effectively and that growth within a municipality is coordinated. (RSA 674:35-36)

➤ **Zoning**

Zoning is an established means of controlling the use of land. Activities carried out on the land and some aspects of what is constructed on it are regulated within municipal areas called "zones." Zones are typically classified as residential, commercial, industrial, rural or mixed. Considered from the perspective of protecting historical resources, conventional zoning can ensure that the use, type, density, height and setback of new development are reasonably sympathetic with surrounding uses and structures. (RSA 674:16-17)

➤ **Innovative Land Use Controls**

RSA 674:21 authorizes a municipality to adopt "innovative land use controls." These include "but are not limited to" timing incentives; phased development; intensity and use incentives; transfer of development rights; planned unit development; cluster development; impact zoning; performance standards ; flexible and discretionary zoning; environments/characteristics zoning.

➤ **Cluster Development**

Cluster development, an option included among "innovative land use controls", permits the placement of buildings at higher than normal density on a portion of a parcel of land in exchange for a deeded commitment that the remainder of the land will always remain open. This land may be held in common by residents of the development (usually "an association") and taxed proportionately to them.

➤ **Site Plan Review**

A community that has adopted zoning can empower its planning board to adopt and administer site plan review (RSA 674:43-44). Under this authority a planning board reviews site plans for change or expansion or new development of a tract for non-residential uses or for residential uses other than one- or two-family dwelling units. The planning board may also set some requirements for specific aspects of a proposed development, such as circulation of pedestrian and vehicular traffic, layout of parking, off-street loading, landscaping, location of signs, and screening.

➤ **Performance Standards**

Another departure from traditional zoning is allowed by applying performance standards as the basis for land use decisions (RSA: 674:21). Performance standards establish definite and measurable criteria to determine whether the effects of a particular development/use are within predetermined limits, and therefore allowable in a particular zone. A proposal is evaluated on its effect instead of its use category. For example, a light commercial activity such as a general store might be permitted in a residential area if it complied with applicable standards for design, parking, noise, traffic, etc.

➤ **Planned Unit Development**

One of the earliest forms of innovative zoning (RSA 674:21), planned unit developments (PUDs) vary widely in character. The most complex allow for a mix of shopping, employment, housing and recreation. The simplest--and most common--are cluster residential developments.

➤ **Transfer of Development Rights**

The transfer of development rights (RSA 674:21) holds significant promise for preservation of community character. This concept is based on the fact that certain parcels of land often have a development potential that exceeds their current or desirable use. While these lands may contribute importantly to the character of the community just as they are, pressure for development may be intense and conventional zoning that would adequately protect the resources may be considered to be confiscatory.

➤ **Building Code Provisions for Historic Structures**

Amendment of local building codes to exempt historic structures from certain code requirements, other than life safety provisions, should be considered (RSA 674:51-52). Adoption of a code for historic structures is another possibility. (For some perspective on how to treat historic structures, see the "Secretary of the Interior's Standards for Rehabilitation" and "Preservation Briefs" as cited in bibliography.) Your local historical resources survey will identify those buildings that are considered to be "historic."

➤ **Easements, Covenants and Deed Restrictions**

An easement is a partial interest in property, which can be bought or sold or assigned. It may be a right to do something with or on another person's property, or a right to prevent an owner from doing something on his or her property. The length of time an easement extends may be in perpetuity or for a speckled number of years.

A covenant is a contractual agreement whereby a property owner, for preservation purposes, agrees to protect the architectural qualities and/or historical character of the resource. Most applications restrict changes, and so are called restrictive covenants or restrictions.

A deed restriction may be placed on a property deed to restrict changes, but a restriction of this type can become unenforceable.

➤ **Estate Planning Advice**

Conservation commissions, planning boards and local non-profit preservation or conservation organizations can stimulate private initiatives by offering advice on estate planning to members of the community who own sizable tracts of land, farms or large, older single-family houses. Through estate planning--including easements, conservation agreements, gifts, swaps, pre-demise transfer of property and/or living trusts--tax values may be reduced so that property does not have to be sold prematurely or developed intensively following the death of the present owner.

➤ **Acquisition**

All levels of government can be involved in acquisition of property for conservation and preservation purposes. Acquisitions are made through purchase, using public funding and grants), through donation and through "taking" by eminent domain.

➤ **Trust for New Hampshire Lands Acquisition and Easement Program**

The Trust for New Hampshire Lands is a non-profit corporation established to protect important natural land in partnership with the state and municipalities. The Trust's public partner is the Land Conservation Investment Program (LCIP) which manages a fund to acquire land and conservation easements.

➤ **Tax Increment Financing**

In accordance with RSA 162-K, a municipality may adopt a Tax Increment Finance (TIF) Plan for certain designated districts. The purpose of a TIF District is to encourage revitalization, re-investment and new investment in property located there. The amount of the increased tax revenues (the "tax increment") generated by increased property values of new development is used to pay for the public infrastructure improvements made in accordance with the approved Plan.

➤ **Industrial Revenue Bonds**

Industrial revenue bonds are a readily accessible source of funding at moderate interest that can be applied to finance industrial and commercial reuse of historical structures. The state Industrial Development Authority issues tax-exempt bonds (per RSA 162-I) for industry, as do numerous local industrial development authorities within their respective areas. Local development authorities can purchase structures, rehabilitate them, and lease or sell the improved structures to private industry.

➤ **Community Development Programs**

Community Development Block Grants are a substantial and accessible source of funding for projects stressing the reuse of historic structures. Community development objectives include rehabilitation of housing, economic development, commercial revitalization and improvement of public facilities. Theoretically, grants can be used for revolving loan funds, interest subsidies, principal reductions, grants and underwriting of preservation planning and design assistance; but they are primarily allocated for housing rehabilitation.

➤ **Scenic Road Designation**

Any road in a town, other than a Class I or II highway, may be designated a scenic road. While serving to endorse a road as "scenic" and therefore worthy of special care, this designation primarily protects trees and stone walls situated on the public right-of-way. In accord with RSA 231:157-158, "any repair, maintenance or reconstruction or paving ... shall not involve or include the cutting or removal of trees, or the tearing down or destruction of stone walls, or portions thereof, except with the prior written consent of the planning board or official municipal body." Listing as a scenic road does not affect the eligibility of the municipality to receive state aid for road construction or reconstruction, nor does it affect the rights of owners of abutting property.

➤ **Stonewall Protection**

Stonewalls, which contribute in such an important way to the scenic and historic character of New Hampshire landscape, are protected by several statutes.

➤ **Roadside Tree Protection**

RSA 231:139-156 provides some significant checks to prevent insensitive roadside clearing or removal of roadside trees, banks and hedges "that serve as a protection of the highway, or that add to the beauty of the roadside."

Appendix E: Funding Sources for Historic Preservation¹

Planning Historic Preservation Projects, Fund-raising & Programming

- ✦ **“Preservation: An Ethic for Planning”** is a citizen's guide published in 1980 by the New Hampshire Charitable Fund for the State Historic Preservation Office. If a copy can't be found locally, the State Library and its depository libraries have loan copies available. Although many of the names, addresses, agencies, programs and legislation mentioned in the manual have changed or disappeared in the intervening years, the overall philosophy (and the practical "how-to" advice for encouraging local preservation efforts) remains valid, and effective.
- ✦ **Barn Assessment Grants: The New Hampshire Preservation Alliance's Historic Barn Grant Program** provides matching funds for an expert in the field of barn restoration to conduct an assessment of a barn's needs, and prepare an in-depth report. The assessment can help address immediate stabilization issues, re-use strategies and budgeting. For more information, contact the NH Preservation Alliance, PO Box 268, Concord NH 03302-0265 (603-224-2281; FAX 603-226-9368).
- ✦ **Preservation Project Development Grants.** The Preservation Alliance's program is designed to assisting local organizations in developing successful preservation projects by providing funding for specialized assistance from preservation professional. The small, matching grants range from \$500 to \$1,000.
- ✦ The New Hampshire General Court enacted the Conservation License Plate Program ("Moose Plate") to supplement existing state conservation and preservation programs with additional funding through voluntary public purchases of the plate. Revenues from the sale of the plate are distributed through five state agencies to preserve and/or purchase significant, publicly-owned historic properties, works of art, artifacts, and archaeological sites; research and manage non-game wildlife species and native plant species and educate the public regarding these species; provide grants to counties, municipalities, and non-profits for resource conservation projects; expand the roadside wild flower planting; and administer the established Land and Community Heritage Investment Program.
- ✦ **New Hampshire Land & Community Heritage Program: The LCHIP program** was created by legislation in 2000 to provide matching grants to public entities (other than state agencies) and non-profit organizations, to help communities acquire and preserve natural, cultural and historical resources. Contact LCHIP at 10 Dixon Avenue Concord, NH 03301 (603-224-4113; FAX 603-224-5112).
- ✦ **Transportation Enhancement Act (TEA) projects:** The TEA program helps to develop "livable communities" by selecting projects that preserve the historic culture of the transportation system and/or enhance the operation of the system for its users. Project categories include acquisition of scenic easements and scenic or historic sites; scenic or historic highway programs (including tourist and welcome center facilities); landscaping and other scenic beautification; historic preservation; rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals); preservation of abandoned railway corridors; archaeological planning and research; and establishing transportation museums.
- ✦ The Winthrop L. Carter Fund for Historic Preservation of the Greater Portsmouth Community Foundation supports the preservation or restoration of historic structures and artifacts in the GPCF region. For more information, and to determine whether your community is in the foundation's region, contact the Greater Portsmouth Community Foundation, Unit 2B, Nobles Island, 500 Market Street, Portsmouth, NH 03801 (603-430-9182; FAX 603-431-6268).

¹ This information has been prepared by the NH Division of Historical Resources with the assistance of the NH Preservation Alliance and the DHR's annual federal "Historic Preservation Fund" matching grant from the National Park Service of the United States Department of the Interior. However, its contents and opinions do not necessarily reflect the views or policies of the Department of the Interior.

- **Public Service of New Hampshire** makes community development grants in the PSNH service territory throughout the year. Contact Doris Burke, Community Development Manager, PSNH, 780 North Commercial Street, Manchester, NH 03101 (603-634-2442).
- At the regional level, the **National Trust for Historic Preservation** has several grant programs. The "Preservation Services Fund" provides small grants for technical studies, historic structures reports, fundraising assistance, architectural/engineering plans, and other non-construction activities. The Hart Family Fund for Small Towns will assist preservation and revitalization projects in towns with populations of 5,000 or less. The Trust's regional office staff may also be able to suggest other sources of encouragement and assistance, including new National Trust grants for preserving historic buildings. For more information, contact the Northeast Regional Office, National Trust for Historic Preservation, 7 Faneuil Hall Marketplace, 5th Floor, Boston, MA 02109 (617-523-0885; FAX 617-523-1199).
- **The Kresge Foundation** makes large capital grants for acquisition of real estate, and for construction work, both for new buildings, and for preservation or rehabilitation work. For more information, contact the Program Office, Kresge Foundation, 3215 Big Beaver Road, PO Box 3151, Troy MI 48007-3151 (313-643-9630).
- **Reconnecting America (formerly The Great American Station Foundation)** was created in 1996 to revitalize communities through new construction or conversion and restoration of existing rail passenger stations, and the possible conversion of historic non-railroad structures to active station use. These railroad stations will improve rail access and intermodal connections as well as stimulate community development. As the organization has grown and evolved, it has set a goal to become the national intermediary organization not only for station revitalization, but also for community revitalization in areas surrounding intercity, commuter and urban rail stations.
- **Save America's Treasures** is a joint program of the National Park Service and the National Trust for Historic Preservation to preserve nationally significant intellectual and cultural artifacts, and historic structures and sites. For more information, contact Save America's Treasures, Save America's Treasures, Heritage Preservation Services, National Park Service, 1201 "Eye" Street, NW, 6th Floor (ORG> 2255), Washington, DC 20005 (202-513-7370, ext. 6).
- The 1772 Foundation focuses on historic preservation, especially buildings related to farming, industrial development, transportation and unusual historical structures. Grants of %15,000 to \$50,000 are made to non-profit organizations throughout the nation.

Information about Other Funding Sources

- The **Federal Advisory Council on Historic Preservation** maintains a comprehensive reference site, "**Sources of Financial Assistance for Historic Preservation Projects.**" The Preserve America initiative is a special program of recognition and grants developed by the **ACHP** and First Lady Laura Bush. The ACHP is located at 1100 Pennsylvania Avenue, NW, Suite 809, Old Post Office Building, Washington, DC 2004 (202-606-8503).
- The "**Foundation Center Library**" **collection for New Hampshire** is located at the Concord Public Library and the Plymouth State College Library; make an appointment to use the library and its computerized data base search system for researching yet other possible funding sources. The New Hampshire library addresses are: Concord Public Library, 45 Green Street, Concord NH 03301 (603-225-8670); and Herbert H. Lamson Library, Plymouth NH 03264 (603-535-2256).
- **The Charitable Trusts Unit of the NH Department of Justice** maintains a comprehensive searchable web site for online research.
- **The New Hampshire State Council on the Arts** has posted an excellent collection of Grant Writing Tips and links on its web site.

Building Conservation & Technical Assistance:

- **The Preservation Institute** is a non-profit organization that is helping contractors, architects, building tradespeople and property managers in New Hampshire and Vermont (and nationally, through

cooperative training with the National Park Service) to develop specialized preservation expertise through courses, workshops, tours, and lectures. The Institute also maintains lists of consultants, contractors, and craftspeople with preservation skills, and for a minimal fee will provide names of qualified specialists. In addition, it presents a series of on-site training workshops (learning-by-doing) that provide preservation expertise to benefit historic properties. The Preservation Institute's address is PO Box 1777, Windsor, VT 05089-0021 (802-674-6752; FAX 802-674-6179); <http://www.preservationworks.org>; <http://www.preservationworks.org>; e-mail: "mailto:histwininc@valley.net"histwininc@valley.net.

- ✦ **Historic New England (formerly the Society for the Preservation of New England Antiquities / SPNEA)** employs experts in architectural conservation; historic carpentry, masonry, and plaster; historic paint color analysis; and furniture and upholstery conservation. Other staff members offer special expertise in architectural history, historic house furnishings, and textiles and wallpaper. Historic New England's offices are at 141 Cambridge Street, Boston MA 02114 (617-227-3956); the Conservation Center's address is 185 Lyman Street, Waltham MA 02154 (617-891-1985); <http://www.historicnewengland.org/index.htm>.
- ✦ If historic preservation restoration, repair, or rehabilitation work is contemplated, any alterations or additions to historic structures should be planned and built in conformance with **The Secretary of the Interior's Standards for the Treatment of Historic Properties**, which are available from the Division of Historical Resources on request. A booklet describing the "Rehabilitation" standards, with do/don't guidelines, is also available from the DHR.
- ✦ The **National Park Service** provides a wealth of educational information on the standards online, beginning with the standard's "home page" at http://www.cr.nps.gov/local-law/archstnds_8_2.htm <http://www.cr.nps.gov/hps/tps/care/sitemap.htm> . The sources listed under "Using the Standards and Guidelines" and "Planning Your Work on a Historic Building" are very helpful. In particular, an interactive web class on using the Standards for rehabilitation can be found at <http://www2.cr.nps.gov/e-rehab/>; <http://www.cr.nps.gov/hps/e-rehab/> ; <http://www2.cr.nps.gov/tps/tax/rhb> <http://www2.cr.nps.gov/tps/tax/rhb> offers illustrated guidance on topics such as wood, roofs, structures systems and health/safety. Much of this information is also available through the DHR.
- ✦ There are increasing numbers of historical architects who have experience in sympathetic restoration and rehabilitation of historic buildings; the **DHR keeps a file listing architects and building conservators with special historic preservation interests and expertise**. The list is maintained as an aid for those seeking professional assistance; it is not an endorsement of those listed, nor is it intended to limit a client's choice. Consultants must ask to be included, and the DHR is not responsible for a consultant's scope of work or work performance.
- ✦ **Although the Division of Historical Resources has no funds for financial assistance, it can sometimes provide technical assistance** (subject to staff workloads and other commitments) and review conceptual and preliminary plans for municipal and non-profit preservation projects. Such a review would determine whether the proposed work meets The Secretary of the Interior's Standards for Rehabilitation, or what would be needed to meet the standards; the DHR can also recommend less costly and damaging alternatives for work that would not comply with the standards.

Document Conservation

- ✦ **The Northeast Document Conservation Center (NEDCC)** is the largest nonprofit regional conservation center in the United States, and specializes in the treatment of paper and related materials, including photographs, books, architectural drawings, maps, posters, documents, and art on paper. NEDCC provides consulting services and performs surveys of preservation needs. It also does paper conservation, book binding, preservation microfilming, and duplication of photographic negatives. It can also advise museums and historical organizations about sources of conservation assistance and funding. For details, contact NEDCC, 100 Brickstone Square, Andover, MA 01810-1494 (978-470-1010; FAX 978-475-6021).

Tax credits, Affordable Housing & Community Facilities

- **The New Hampshire Housing Finance Authority** is the state's housing advocacy agency, and administers a variety of funding sources, including federal and state loans and grants, to support housing programs and projects. For more information about its programs and services, and about other funding sources for housing-related initiatives, contact: New Hampshire Housing Finance Authority, PO Box 5087, Manchester, NH 03108-5087 (603-472-8623; FAX 603-472-8501).
- **The New Hampshire Community Development Finance Authority (CDFA)** provides financial and technical assistance to community development corporations, worker cooperatives, and certain municipal entities. The Authority is unable to assist a for-profit business directly, but can work with a nonprofit partner. CDFFA funds major community development projects primarily with the Community Development Investment (Tax Credit) Program. It has proven to be a major source of support for affordable housing and economic development and is one CDFFA's most successful initiatives. For more information, contact CDFFA at 14 Dixon Avenue, Suite 102, Concord NH 03302 (603-226-2170).
- **The New Hampshire Community Development Finance Authority** administers the "Community Development Block Grant" (CDBG) program, which provides federal funds to communities for housing, economic development, and public facilities targeted so that they primarily benefit low and moderate income people. The program is complex and highly competitive, but well worth the effort invested in planning a project and submitting an application. CDBG Feasibility Grants are available for project planning (including feasibility studies, surveys, and professional architectural and engineering services); CDBG Implementation Grants provide substantial funding for construction and rehabilitation work. For more information, contact Community Development Block Grants (603-226-2170).
- **The New Hampshire Division of Historical Resources manages New Hampshire's Historic Preservation Investment Tax Credit Program for income-producing properties for the National Park Service.** Contact DHR at 603-271-3558 for more information.
- **The New Hampshire Rural Development Council** is a public/private partnership that acts as a "catalyst for community vitalization," removing organizational barriers and facilitating a team approach to rural development. The Rural Development Council fosters communication, cooperation, and information-sharing between the regional, state, and federal programs that offer development assistance to New Hampshire's rural communities; its process emphasizes listening and learning from communities, and engaging existing resources in more effective and less narrowly focused ways. For more information about the council and its activities, contact: Nancy DuBosque Berliner, Executive Director, NH Rural Development Council, 2 1/2 Beacon Street, Concord NH 03301 (603-229-0261; FAX 603-228-4827).

Arts & Cultural Facilities

- The "**Cultural Facilities Grant**" program of the **NH State Council on the Arts** provides matching grants for planning and capital projects to New Hampshire non-profit organizations with cultural facilities. Historic preservation projects are eligible only if the purpose of the project is to make the facility adequate for arts programming, but several grants have been awarded to historic cultural facilities because those projects met the program criteria. Facilities must meet minimum standards for architecturally barrier-free entrance before organizations may apply for a Cultural Facility Grant for any need other than to assist them in meeting those standards. For more information, contact Yvonne Stahr (603-271-0791).

Community Preservation Projects

- **The Townscape Institute, Inc.** is a public interest design, planning, education and advocacy organization that helps communities recognize and preserve their townscape assets. Enhancing the quality of the visual environment and all its component parts, particularly in urban and village centers, is a primary focus of the institute. For more information, contact Ronald Lee Fleming, AICP, President, The Townscape Institute, Eight Lowell Street, Cambridge, MA 02138 (617-491-8952; FAX 617-491-3734); <http://www.townscape-inst.com>.

Covered Timber Bridges

- **The National Society for the Preservation of Covered Bridges** promotes covered bridge preservation with research, structural analysis, graphic recording, and publications; through collecting artifacts and archival material relating to covered bridges; and by encouraging "restoration schemes employing devices and techniques dating from the period the spans in question were initially constructed." For more information, contact David W. Wright, President, National Society for the Preservation of Covered Bridges, Inc., PO Box 171, Westminster, VT 05158 (802-722-4040).

Museums

- **The American Association for State & Local History (AASLH)** has a variety of programs and services (including consultant grants) for member organizations; for more information, write to the AASLH, 1717 Church Street, Nashville TN 37203-2991 (615-255-2971; FAX 615-327-9013).
- **The federal Institute of Museum & Library Services** funds a broad range of museum and library projects. Its address is: Institute of Museum and Library Services, Office of Public and Legislative Affairs, 1100 Pennsylvania Avenue, NW, Room 510, Washington, DC 20506 (202-606-8339; FAX 202-606-8591).
- **The National Endowment for the Arts** promotes excellence in design fields and has a variety of grant programs, but it does not fund capital construction. For more information, contact the National Endowment for the Arts, 1100 Pennsylvania Avenue NW, Washington DC 20506 (202-682-5437).
- **The National Endowment for the Humanities** also has a broad range of grant programs to support projects in the humanities; and it also does not fund capital construction. For more information, contact: National Endowment for the Humanities, 1100 Pennsylvania Avenue NW, Washington DC 20506 (202-786-0438).

Public Libraries

- **The New Hampshire State Library** administers a federal program of "LSCA" (Library Services and Construction Act) grants for New Hampshire public libraries; to find out more about the program, contact: Janet Eklund, Administrator of Library Operations, NH State Library, 20 Park Street, Concord, NH 03301 (603-271-2393).

Religious Properties

- **Partners for Sacred Places (National Center for the Stewardship and Preservation of Religious Properties)** is a non-profit organization created to help congregations and communities continue the use and vitality of religious buildings and sites. Their "Information Clearinghouse" conducts research, maintains a reference/referral library (including unpublished materials), and answers questions by telephone or mail; PSP also sponsors an annual national conference; publishes self-help guides; supports a program of advocacy, outreach, public awareness and education; and in some circumstances provides consulting services and offers a traveling workshop series. PSP's address is 1700 Sansom Street, Tenth Floor, Philadelphia, PA 19103 (215-567-3234; FAX 215-567-3235).

Small Businesses

- **The federal Small Business Administration** doesn't target assistance to historic preservation projects; but some of its grants, loans, business development or business management programs may assist the property owners' overall enterprise, and as a by-product also help achieve their historic preservation goals. The SBA is at 143 North Main Street (PO Box 1257), Concord, NH 03302-1257 (603-225-1400; FAX 603-225-1409).

Theaters

- **The League of Historic Theaters** is the one national organization devoted exclusively to the needs of historic theaters. The address is 1511 K Street, NW, Suite 923, Washington DC 20005 (202-783-6966).

Periodicals

- **The Association of Preservation Technology International**, "an interdisciplinary...organization dedicated to the practical application of the principles and techniques necessary for the care and wise use of the built environment" publishes technical (and very practical) articles in its quarterly Bulletin (in print or microfiche). APT's address is: The Association for Preservation Technology International, PO Box 8178, Fredericksburg, VA 22404 (703-373-1621).
- **The Old-House Journal** is a bi-monthly magazine devoted exclusively to user-friendly technical and practical articles (and advertisements) on building preservation philosophy, techniques, tools, materials, supplies, and services. OHJ's address is: Old-House Journal Corporation, 435 Ninth Street, Brooklyn, NY 11215 (718-788-1700).
- **Small Town magazine**, although no longer published, remains an excellent source of information and contacts on a wide variety of issues--especially economic development, planning, and social concerns--viewed as they affect smaller communities. (Despite its name, Small Town considered any municipality with population under 50,000 a "small town.") The magazine was published by the Small Towns Institute, PO Box 517, Ellensburg, WA 98926 (509-925-1830). Copies are available at many libraries and academic institutions.
- **Traditional Building**, "the professional's sources for historical products," is published bimonthly by Historical Trends Corporation, 69A Seventh Avenue, Brooklyn, NY 11217 (718-636-0788; FAX 718-636-050); <http://www.traditional-building.com>. Each issue includes feature articles, book reviews, classifieds, extensive product advertising, and access to a FAX product information service.

Publications

- **Catalog of Historic Preservation Publications: Guidance on the Treatment of Historic Properties is published by the National Park Service** to broadly share technical information and assistance; the current edition lists more than 100 books, leaflets, videotapes, and data bases which are available at low or no cost. Single copies of the catalog are available from the Preservation Assistance Division, National Park Service, 1849 C Street, NW, Washington D.C. 20240.
- **Preserving Community Character: Ways to Reconcile Change with the Character of a Place is a manual published by the New Hampshire Association of Historic District Commissions in 1988.** This guidebook is the single most useful reference for communities that are interested in or have established a Historic District Commission. It has two parts: planning options and strategies for preserving community character, and detailed step-by-step instructions for establishing a local historic district (including a model ordinance and regulations). It has received a lot of favorable attention (and use) both in New Hampshire and nationwide. Copies are available from the DHR.

Internet Sites

1. Advisory Council on Historic Preservation: <http://www.achp.gov>.
2. American Association for State and Local History: <http://www.aaslh.org>.
3. American Institute for Conservation of Historic and Artistic Works: <http://aic.stanford.edu>.
4. Association of Preservation Technology International: <http://www.apti.org>.
5. Catalogue of Historic Preservation Publications: <http://www.cr.nps.gov/hps/bookstore.htm>.
6. Charitable Trusts Unit of the NH Department of Justice: <http://doj.nh.gov/charitable/consumers>.
7. Federal Institute of Museum & Library Services: <http://www.imls.gov>.
8. Foundation Center Library for New Hampshire: <http://fdncenter.org/learn/librarian>.
9. Government Printing Office: <http://www.access.gpo.gov>.
10. Great American Station Foundation [Reconnecting America] <http://www.stationfoundation.org> or <http://www.reconnectingamerica.org>.
11. Historic American Buildings (Library of Congress): <http://lcweb2.loc.gov/ammem/hhhtml>.
12. Historic New England: <http://www.historicnewengland.org>.

13. Kresge Foundation: <http://www.kresge.org>.
14. League of Historic Theaters: <http://www.lhat.org>.
15. Library of Congress: <http://thomas.loc.gov>.
16. Livable Communities Task Force: <http://www.house.gov/blumenauer/livable.htm> or http://www.rurdev.usda.gov/nrdp/national/taskforces/livable/livable_rural_communities.html.
17. National Alliance of Preservation Commissions: <http://www.sed.uga.edu/pso/programs/napc/napc.htm>.
18. National Center for Preservation Technology and Training: <http://www.ncptt.nps.gov>.
19. National Conference of State Legislatures Data Base: http://www.ncsl.org/programs/arts/statehist_intro.htm.
20. National Endowment for the Arts: <http://www.arts.endow.gov>.
21. National Endowment for the Humanities: <http://www.neh.fed.us>.
22. National Park Service: <http://www.cr.nps.gov>.
23. National Transportation Enhancements Clearinghouse: <http://www.enhancements.org>.
24. National Trust for Historic Preservation: <http://www.nthp.org> or <http://www.nationaltrust.org>.
25. New Hampshire Community Development Finance Authority: <http://www.nhcdfa.org>.
26. New Hampshire Conservation License Plate Program: <http://www.mooseplate.com>.
27. New Hampshire Department of Transportation: <http://nh.gov/dot/municipalhighways>.
28. New Hampshire Division of Historical Resources: <http://www.state.nh.us/nhdhr>.
29. New Hampshire Historical Society: <http://www.nhhistory.org>.
30. New Hampshire Land Conservation Investment Program: <http://www.lchip.org>.
31. New Hampshire Main Street Center: <http://www.nhcdfa.org/mainstreet.html>.
32. New Hampshire Preservation Alliance: <http://www.nhpreservation.org>.
33. New Hampshire Rural Development Council: <http://www.ruralnh.org>.
34. New Hampshire State Council on the Arts: <http://www.nh.gov/nharts/grantsandservices>.
35. Northeast Document Conservation Center: <http://www.nedcc.org>.
36. Old House Journal: <http://www.oldhousejournal.com>.
37. Partners for Sacred Places: <http://www.sacredplaces.org>.
38. Preservation Action: <http://www.preservationaction.org>.
39. Preservation Institute: <http://www.preservationworks.org>.
40. Public Service of New Hampshire: <http://www.prospernh.com> (Select "PSNH advantage").
41. Save America's Treasures: <http://www.saveamericastreasures.org>.
42. 1772 Foundation: <http://www.1772foundation.org>.
43. Scenic America: <http://www.scenic.org>.
44. State of New Hampshire: <http://www.state.nh.us> or <http://www.nh.gov>.
45. Society for American Archaeology: <http://www.saa.org>.
46. Society for Commercial Archeology: <http://www.sca-roadside.org>.
47. Sprawl Watch Clearinghouse: <http://www.sprawlwatch.org>.
48. Surface Transportation Policy Project: <http://www.istea.org>.
49. Townscape Institute: <http://www.townscape-inst.com>.
50. Traditional Building: <http://www.traditional-building.com>.

Chapter 11: Cultural Resources

- Peterborough Cultural Inventory
- Monadnock Region Arts and Economic Prosperity (Summary)
- Monadnock Region Arts and Economic Prosperity (Full Report)
- Art-Speak/Portsmouth, NH

Cultural Resources: Inventory

SECTOR	ARTS ORGANIZATION AFFILIATION	FIRST NAME	LAST NAME	DESCRIPTION/ OTHER DETAILS	WEBSITE	MAILING ADDRESS
Arts Org	Broke: The Affordable Arts Fair; Moo-Cow Fan Club; Toadstool Bookshop Music Dept.	Ryan	Wilson			P.O. Box 165, Peterborough, NH 03458
Arts Org	Children & the Arts Festival	Terry	Reeves	Annual Children & the Arts Festival	www.childrenandthearts.org	P.O. Box 771, Peterborough, NH 03458
Arts Org	Monadnock Art / Friends of the Dublin Art Colony	Catherine A.	LaRoche	(President) Annual Open Studio Art Tour (Sat. and Sun. of Columbus Day Weekend)	www.monadnockart.org	Monadnock Art / FDAC P.O. Box 39 Dublin NH, 03444
Arts Org	Monadnock Quilters' Guild	Jan	Hicks	Quilter	www.monadnockquiltersguild.org	P.O. Box 140, West Peterborough, NH 03468
Arts Org	Monadnock Quilters' Guild	Gail	Wilson	Quilter	www.monadnockquiltersguild.org	P.O. Box 140, West Peterborough, NH 03468
Arts Org	Monadnock Writers' Group	Tina	Rapp	Writer	www.monadnockwriters.org	P.O. Box 3071, Peterborough, NH 03458
Arts Org	The MacDowell Colony	David	Macy	(Resident Director) Artist Colony	www.macdowellcolony.org	100 High St., Peterborough, NH 03458
Arts Org; Education	Sharon Arts Center	Keri	Wiederspahn	(Executive Director) Art School, Gallery and Shop	www.sharonarts.org	457 Route 123, Sharon, NH 03458
Business	Fletcher & Wilder Communications	Marilyn & Jim	Fletcher		www.fletcherandwilder.com	94 Grove St., Peterborough, NH 03458
Business	InHaus Media				www.inhausmedia.com	
Business	The Cobbs Auctioneers	Dudley & Charlie	Cobb		www.thecobbs.com	
Business – Design	Baker-Salmon Design	Margaret	Baker			
Business – Music	Peterborough Music Company	Cathy	Leger		www.peterboroughmusiccompany.com	
Business – Retail	bowerbird & friends	Katherine	Forrest			
Business – Retail	Joseph's Coat	Francoise	Bourdon		www.jocoat.com	32 Grove St., Peterborough, NH 03458
Business – Retail	Toadstool Bookshop	Willard	Williams		www.toadbooks.com	
Business – Retail	Tribals, Rugs by Hand	Michaela	Chelminski			
Civic Org – Peterborough Town Library	Peterborough Town Library	Michael	Price			P.O. Box 7, Harrisville, NH 03450
Civic Org – Town of Peterborough	Peterborough Office of Community Development	Carol	Ogilvie			
Cultural	Mariposa Museum	David	Blair		www.mariposamuseum.org	26 Main St., Peterborough, NH 03458

Cultural Resources: Inventory

SECTOR	ARTS ORGANIZATION AFFILIATION	FIRST NAME	LAST NAME	DESCRIPTION/ OTHER DETAILS	WEBSITE	MAILING ADDRESS
Cultural	Mariposa Museum	Mose	Olenik		www.mariposamuseum.org	26 Main St., Peterborough, NH 03458
Cultural	Monadnock Summer Lyceum	Audrey	Cass		http://monadnocklyceum.org	25 Main St., Peterborough, NH 03458
Cultural	Peterborough Historical Society	Michelle	Stahl		www.peterboroughhistory.org	
Education	Arts Enrichment: ConVal School District	Monica	Riffle			
Education	Arts Enrichment: ConVal School District; Children & the Arts	Jeannie	Connolly			45 High St., Peterborough, NH 03458
Education	Peterborough Art Academy	Michaela	Chelminski		www.peterboroughartacademy.com	Depot Square, P.O. Box 315, Peterborough, NH 03458
Performing Arts – Dance	Monadnock Performing Arts Academy	Christina	Ahern		www.mpaa.biz	40 Depot Square, Peterborough, NH 03458
Performing Arts – Dance	Monadnock Performing Arts Academy	Pati	Cloutier		www.mpaa.biz	40 Depot Square, Peterborough, NH 03458
Performing Arts – Music	Kimberly Consort	Richard	Sanders	Musician: clarinet; Teacher	kimberlyconsort.com	
Performing Arts – Music	Kimberly Consort; Raylynmor Opera	Holly	Sanders	Musician: flute; Teacher	kimberlyconsort.com	7 Reynolds Dr., Peterborough, NH 03458
Performing Arts – Music	Monadnock Chorus	Caroll	Lehman		www.monadnock-chorus.org	
Performing Arts – Music	Monadnock Chorus	Nancy	Lundgren		www.monadnock-chorus.org	
Performing Arts – Music	Monadnock Folklore Society	Bruce	Myrick		monadnockfolk.org	54 Brook St., Keene, NH 03431
Performing Arts – Music	Monadnock Music	Miki	Osgood		www.monadnockmusic.org	2A Concord St., Peterborough, NH 03458
Performing Arts – Music	Old New England	Bob	McQuillen	Musician: contra dance piano and accordian; Composer; Teacher		27 Granite St., Peterborough, NH 03458
Performing Arts – Music	Peterborough Children's Choir	Maria	Belva		www.pcchoir.org	
Performing Arts – Music	Peterborough Fiddles	Flynn	Cohen		www.freewebs.com/peterboroughfiddles	
Performing Arts – Music	Peterborough Folk Music Society; NHDI (NH Dance Institute)	Deborah	McWethy		www.pfmsconcerts.org	P.O. Box 41, Peterborough, NH 03458
Performing Arts – Music	The Thing in the Spring	Eric	Gagne		www.thethinginthespring.com	
Performing Arts – Music	Two Rivers Music Studios					
Performing Arts – Music		Marybeth	Hallinan	Musician; Teacher	keysofmb.squarespace.com	

Cultural Resources: Inventory

SECTOR	ARTS ORGANIZATION AFFILIATION	FIRST NAME	LAST NAME	DESCRIPTION/ OTHER DETAILS	WEBSITE	MAILING ADDRESS
Performing Arts – Music		Ray	Sweeney	Musician: piano; Teacher (ConVal – retired)		
Performing Arts – Music		Michael C.	Wakefield	Musician: Jazz saxophone		94 Kaufmann Dr., Peterborough, NH 03458
Performing Arts – Music; Theater	Raylynmor Opera	Charlotte	Lesser		www.raylynmor.com	P.O. Box 261, Peterborough, NH 03458
Performing Arts – Theater	Actors Circle Theatre	Rob	Koch	Actor	www.actorscircletheatre.org	PO Box 374 Peterborough, NH 03458
Performing Arts – Theater	Ken Sheldon's Frost Heaves	Christine	Halvorson	Writer	www.frostheaves.com	9 Forest Rd., Hancock, NH 03449
Performing Arts – Theater	Ken Sheldon's Frost Heaves	Ken	Sheldon	Actor; Writer	www.frostheaves.com	9 Forest Rd., Hancock, NH 03449
Performing Arts – Theater	Peterborough Players	Keith	Stevens		www.peterboroughplayers.org	55 Hadley Rd., P.O. Box 118, Peterborough, NH 03458
Performing Arts – Theater	Peterborough Rec Dept./Theater for Young Performers					
Performing Arts – Theater		Jason	Lambert			
Visual Arts – Architect	Richard M. Monahon AIA Architects	Rick	Monahon		www.monahonarchitects.com	44 Main St., Peterborough, NH 03458
Visual Arts – Architect	Richard M. Monahon AIA Architects	Duffy	Monahon		www.monahonarchitects.com	44 Main St., Peterborough, NH 03458
Visual Arts – Architect		Len	Pagano			93 Grove St., Peterborough, NH 03458
Visual Arts – Architect		Susan	Phillips-Hungerford		www.spharchitect.com	19 Grove St., Peterborough NH 03458
Visual Arts – Architect		Jay Lawrence	Purcell			44 Main St., Peterborough, NH 03458
Visual Arts – Artist	Broke: Affordable Arts Fair; The Glass Museum Print Shop; ConVal Art Teacher	Mary	Goldthwaite	Artist; Teacher (ConVal)		50 Wilder St., Peterborough, NH 03458
Visual Arts – Artist	Moo-Cow Fan Club	Becky	Ances		www.moocowfanclub.com	P.O. Box 165, Peterborough, NH 03458
Visual Arts – Artist	Three Squared Artists	Colette	Lucas			323 Union St., Peterborough, NH 03458
Visual Arts – Artist	Three Squared Artists	Jane El	Simpson		www.threesquaredartists.com/JaneElSimpson.html	30 Main St., Peterborough, NH 03458
Visual Arts – Artist		Craig	Altobello	Marketry (wood inlay)		33 East Hill Rd., Peterborough, NH 03458

Cultural Resources: Inventory

SECTOR	ARTS ORGANIZATION AFFILIATION	FIRST NAME	LAST NAME	DESCRIPTION/ OTHER DETAILS	WEBSITE	MAILING ADDRESS
Visual Arts – Artist		Margaret	Baker			30 Main St., Peterborough, NH 03458
Visual Arts – Artist		Joan	Barrows			435 Union St., Peterborough, NH 03458
Visual Arts – Artist		Debra	Blore		www.debralore.com	
Visual Arts – Artist		Mona Adisa	Brooks		www.monaadisabrooks.com	77 Cheney Ave., Peterborough, NH 03458
Visual Arts – Artist		Barbara	Busenbark		www.paintbrushgraphics.com	
Visual Arts – Artist		Sue	Callihan		www.suecallihan.com	50 Cunningham Pond Rd, Peterborough, NH 03458
Visual Arts – Artist		Linda	Claff			442 Rte. 123, Sharon, NH 03458
Visual Arts – Artist		Kitty Bass	Cloud		www.newenglandpastels.com	
Visual Arts – Artist		Elaine	Cummings			
Visual Arts – Artist		David	Dodge		www.davedodge.com	333 East Mountain Rd., Peterborough, NH 03458
Visual Arts – Artist		Jan	Dolan	Portraiture		
Visual Arts – Artist		Emily	Drury			24 May St., Peterborough, NH 03458
Visual Arts – Artist		Soosen	Dunholter		www.soosendunholterart.com	145 Grove St. Ext., Peterborough, NH 03458
Visual Arts – Artist		Lulu	Fichter			375 Union St., Peterborough, NH 03458
Visual Arts – Artist		Toni	Garland			346 Middle Hancock Rd., Peterborough, NH 03458
Visual Arts – Artist		Genevieve	Groesbeck		www.geneviegroesbeck.com	349 Middle Hancock Rd., Peterborough, NH 03458
Visual Arts – Artist		Baxter	Harris			
Visual Arts – Artist		Jane	Howard			660 Jarmany Hill Rd., NH
Visual Arts – Artist		Erick	Ingraham		www.erickingraham.com	182 McCoy Rd., Sharon, NH 03458
Visual Arts – Artist		Lita	Judge		www.litajudge.com	77 Wilder Farm Rd., Peterborough, NH 03458
Visual Arts – Artist		Chris	Justice			53 May St., Peterborough, NH 03458
Visual Arts – Artist		Beth	Krommes		www.bethkrommes.com	310 Old Street Rd., Peterborough, NH 03458
Visual Arts – Artist		Carol	Lake		carollakestudios.wordpress.com	Dancing Dog Farm, Peterborough, NH

Cultural Resources: Inventory

SECTOR	ARTS ORGANIZATION AFFILIATION	FIRST NAME	LAST NAME	DESCRIPTION/ OTHER DETAILS	WEBSITE	MAILING ADDRESS
Visual Arts – Artist		Catherine A.	LaRoche	Calligraphy (traditional and contemporary)	www.LaRocheCalligraphy.com	94 Kaufmann Dr., Peterborough, NH 03458
Visual Arts – Artist		Mary	Lord			162 Middle Hancock Rd., Peterborough, NH 03458
Visual Arts – Artist		Eva-Lynn	Loy		www.eva-lynnloy.com	93 Cheney Ave., Peterborough, NH 03458
Visual Arts – Artist		Katina	Makris			8 Blueberry Lane, Peterborough, NH 03458
Visual Arts – Artist		Joanna Eldredge	Morrissey	Photographer		
Visual Arts – Artist		Jacqueline	O'Hare	Traditional and Contemporary Basket weaving		119 Old Street Rd., Peterborough, NH 03458
Visual Arts – Artist		Kimberly	Peck	Photographer	kimberlypeckphotography.com	Peterborough, NH
Visual Arts – Artist		Jessie	Pollock		www.jessiepollock.com	57 East Mountain Rd., Peterborough, NH 03458
Visual Arts – Artist		Alex	Pope			19 East Mountain Rd., Peterborough, NH 03458
Visual Arts – Artist		David	Rheubottom	Photographer		442 Rte. 123, Sharon, NH 03458
Visual Arts – Artist		John	Sirois	Painter	www.johnsiroisart.com	Union Mill #110, 374 Union St., Peterborough, NH 03458
Visual Arts – Artist	Lovely in the Home Press: Book Artist/Printmaker;Sculptor	Erin	Sweeney		www.erinsweeney.net	30 Main St., Peterborough, NH 03458
Visual Arts – Artist		Michael	Teitsch			77 Cheney Ave., Peterborough, NH 03458
Visual Arts – Artist		Daniel	Thibeault		danielthibeault.blogspot.com	Union Mill #206, 374 Union St., Peterborough, NH 03458
Visual Arts – Artist		Karin	Wells		www.KarinWells.com	408 Middle Hancock Rd., Peterborough, NH 03458
Visual Arts – Artist		Pashya	White		www.threesquaredartists.com/PashyaWhite.html	34 B Summer St., Peterborough, NH 03458
Visual Arts – Gallery	Launch Art	Tim	Donovan		www.launchart.net	28 Grove St., Peterborough, NH 03458
Writer		George	Duncan	Copywriter; consultant		
Writer		Annie	Graves	Contributing writer to Yankee Magazine		
Writer		Taylor	Morris	Author		
Writer		Tina	Rapp			

Cultural Resources: Inventory

SECTOR	ARTS ORGANIZATION AFFILIATION	FIRST NAME	LAST NAME	DESCRIPTION/ OTHER DETAILS	WEBSITE	MAILING ADDRESS
Writer		Elizabeth Marshall	Thomas	Author		
Writer		Linda J.	Thomas	Freelance writer, editor and writing instructor		
	Green Table Productions	Hari	Kirin			48 High St., Peterborough, NH 03458
		Dale	Lowery			47 High St., Peterborough, NH 03458
		Lisa	Rogers			P.O. Box 33, Peterborough, NH 03458

Resources in the Region that affect Peterborough Resources: *(Should we include these? Others?)*

Arts Org	Monadnock Arts Alive				www.monadnockartsalive.org	39 Central Square, Ste. 203, Keene, NH 03431
Cultural	Jaffrey Civic Center	Dion	Owens		www.jaffreyciviccenter.com	40 Main St., Jaffrey, NH 03452
	Redfern Arts Center on					
Cultural	Brickyard Pond	Bill	Menezes		www.keene.edu/racbp	Keene, NH
Arts Org	The Colonial Theatre				www.thecolonial.org	Keene, NH
Arts Org	Park Theatre				theparktheatre.org	Jaffrey, NH
					www.thestarvingartistcollective.com	Keene, NH
Arts Org	The Starving Artist					Keene, NH
Visual Arts – Gallery	Thorne-Sagendorf Art Gallery				www.keene.edu/tsag	Keene, NH

The Economic Impact of Nonprofit Arts and Culture Organizations and Their Audiences in New Hampshire's Monadnock Region (FY 2008)

Direct Economic Activity	Arts and Culture Organizations	+	Arts and Culture Audiences	=	Total Expenditures
Total Industry Expenditures	\$13,089,626		\$3,542,020		\$16,631,646

Spending by Arts and Culture Organizations and Their Audiences Supports Jobs and Generates Government Revenue

Economic Impact of Expenditures (Direct & Indirect Combined)	Economic Impact of Organizations	+	Economic Impact of Audiences	=	Total Economic Impact
Full-Time Equivalent (FTE) Jobs Supported	405		72		477
Household Income Paid to Residents	\$9,026,000		\$1,559,000		\$10,585,000
Revenue Generated to <u>Local</u> Government	\$516,000		\$150,000		\$666,000
Revenue Generated to <u>State</u> Government	\$438,000		\$205,000		\$643,000

Event-Related Spending by Arts and Culture Audiences Totaled \$3.5 million (excluding the cost of admission)

Attendance to Arts and Culture Events	Resident* Attendees	+	Non-Resident* Attendees	=	All Attendees
Total Attendance to Arts and Culture Events	135,730		55,979		191,709
Percentage of Total Attendance	70.8%		29.2%		100%
Average Event-Related Spending Per Person	\$14.28		\$28.65		\$18.46
Total Event-Related Expenditures	\$1,938,224		\$1,603,796		\$3,542,020

Nonprofit Arts and Culture Event Attendees Spend an Average of \$18.46 Per Person (excluding the cost of admission)

Category of Event-Related Expenditure	Resident* Attendees	Non-Resident* Attendees	All Attendees
Meals and Refreshments	\$9.88	\$14.14	\$11.12
Souvenirs and Gifts	\$1.13	\$2.12	\$1.42
Ground Transportation	\$1.01	\$3.22	\$1.65
Overnight Lodging (one night only)	\$0.74	\$6.79	\$2.51
Other/Miscellaneous	\$1.52	\$2.38	\$1.76
Average Event-Related Spending Per Person	\$14.28	\$28.65	\$18.46

* Residents are attendees who live within the Monadnock Region (all of Cheshire County and western Hillsborough County); non-residents live outside the region. The Monadnock Region is defined as the towns of Alstead, Antrim, Bennington, Chesterfield, Deering, Dublin, Fitzwilliam, Frankestown, Gilsum, Greenfield, Greenville, Hancock, Harrisville, Hillsborough, Hinsdale, Jaffrey, Keene, Lyndeborough, Marlborough, Marlow, Mason, Milford, Nelson, New Ipswich, Peterborough, Richmond, Rindge, Roxbury, Sharon, Stoddard, Sullivan, Surry, Swanzey, Temple, Troy, Walpole, Westmoreland, Wilton, Winchester, and Windsor.

Source: *Arts & Economic Prosperity III: The Economic Impact of Nonprofit Arts and Culture Organizations and Their Audiences in New Hampshire's Monadnock Region*. For more information about this study or about other cultural initiatives in the Monadnock Region, contact Arts Alive!, a group of regional artists and organizations dedicated to advancing the arts and culture in the region.

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Arts & Economic Prosperity^{III}

The Economic Impact of Nonprofit Arts and
Culture Organizations and Their Audiences
in NEW HAMPSHIRE'S MONADNOCK REGION



Arts and Economic Prosperity III was conducted by Americans for the Arts, the nation's leading nonprofit organization for advancing the arts in America. Established in 1960, we are dedicated to representing and serving local communities and creating opportunities for every American to participate in and appreciate all forms of the arts.

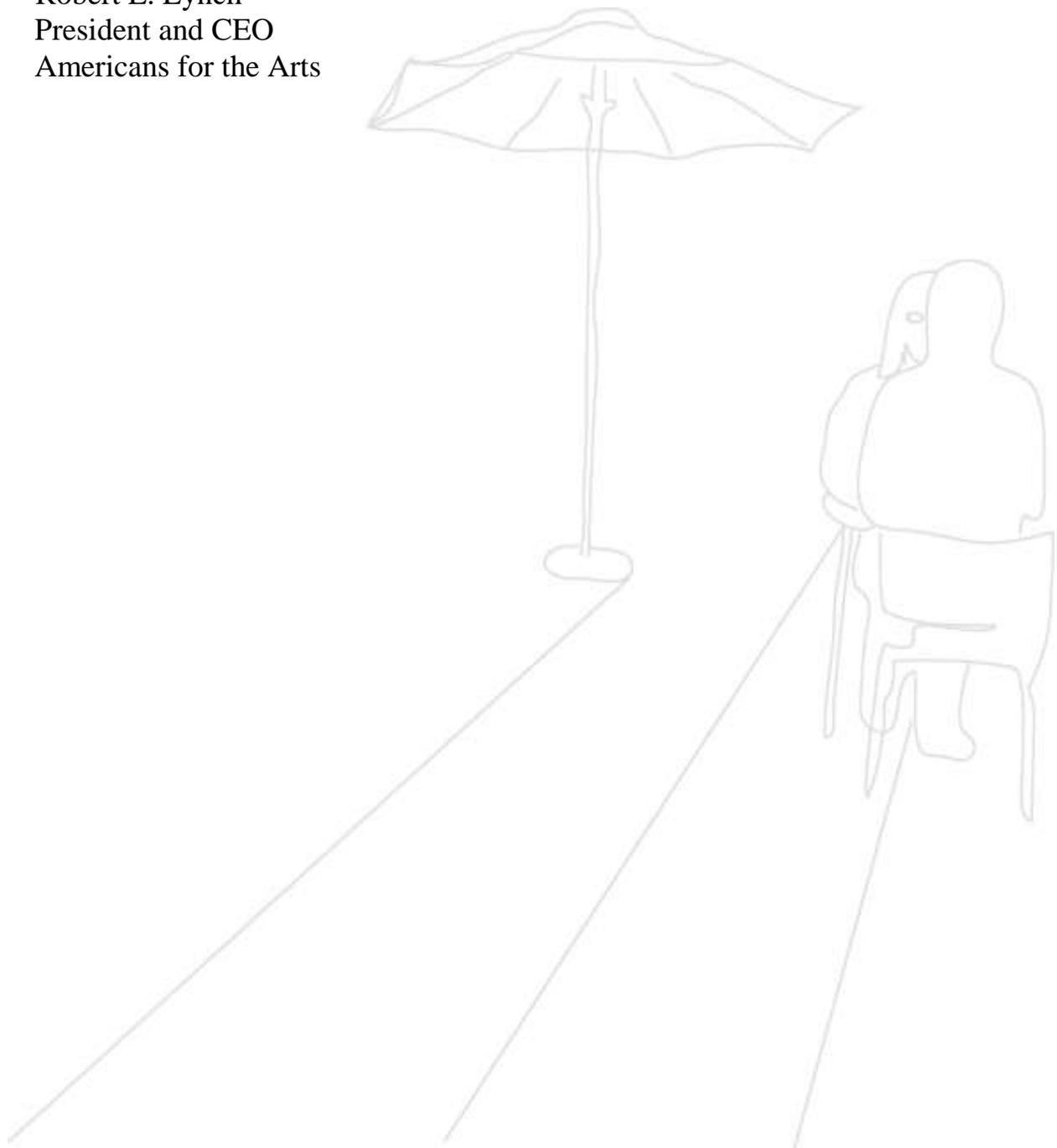


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"Understanding and acknowledging the incredible economic impact of the nonprofit arts and culture, we must always remember their fundamental value. They foster beauty, creativity, originality, and vitality. The arts inspire us, sooth us, provoke us, involve us, and connect us. But they also create jobs and contribute to the economy."

—Robert L. Lynch
President and CEO
Americans for the Arts



The Arts Mean Business

ROBERT L. LYNCH, PRESIDENT AND CEO, AMERICANS FOR THE ARTS

The key lesson from *Arts & Economic Prosperity III* is that communities that invest in the arts reap the additional benefit of jobs, economic growth, and a quality of life that positions those communities to compete in our 21st century creative economy. In my travels across the country, business and government leaders often talk to me about the challenges of funding the arts and other community needs amid shrinking resources. They worry about jobs and the economic performance of their community. How well are they competing in the high-stakes race to attract new businesses? Is their region a magnet for a skilled and creative workforce? I am continually impressed by their commitment to doing what is best for their constituents and to improving quality of life for all. The findings from *Arts & Economic Prosperity III* send a clear and welcome message: leaders who care about community and economic development can feel good about choosing to invest in the arts.

Most of us appreciate the intrinsic benefits of the arts—their beauty and vision; how they inspire, sooth, provoke, and connect us. When it comes time to make tough funding choices, however, elected officials and business leaders also need to have strong and credible data that demonstrate the economic benefits of a vibrant nonprofit arts and culture industry.

Arts & Economic Prosperity III is our third study of the nonprofit arts and culture industry's impact on the nation's economy. Because of their rigor and reliability, results from the 1994 and 2002 studies have become the most frequently used statistics to demonstrate the value of arts and culture locally, statewide, and nationally. This new study is our largest ever, featuring findings from 156 study regions (116 cities and counties, 35 multi-county regions, and five statewide studies). Data were collected from an impressive 6,080 nonprofit arts and culture organizations and 94,478 of their attendees across all 50 states and the District of Columbia.

By every measure, the results are impressive! Nationally, the nonprofit arts and culture industry generates \$166.2 billion in economic activity annually—a 24 percent increase in just the past five years. That amount is greater than the Gross Domestic Product of most countries. This spending supports 5.7 million full-time jobs right here in the U.S.—an increase of 850,000 jobs since our 2002 study. What's more, because arts and culture organizations are strongly rooted in their community, these are jobs that necessarily remain local and cannot be shipped overseas.

Our industry also generates nearly \$30 billion in revenue to local, state, and federal governments every year. By comparison, the three levels of government collectively spend less than \$4 billion annually to support arts and culture—a spectacular 7:1 return on investment that would even thrill Wall Street veterans.

Arts & Economic Prosperity III has more good news for business leaders. Arts and culture organizations—

businesses in their own right—leverage additional event-related spending by their audiences that pumps vital revenue into restaurants, hotels, retail stores, and other local businesses. When patrons attend a performing arts event, for example, they may park their car in a toll garage, purchase dinner at a restaurant, and eat dessert after the show. Valuable commerce is generated for local merchants. This study shows that the typical attendee spends \$27.79 per person, per event, in addition to the cost of admission. When a community attracts cultural tourists, it harnesses even greater economic rewards. Non-local audiences spend twice as much as their local counterparts (\$40.19 vs. \$19.53). Arts and culture is a magnet for tourists, and tourism research repeatedly shows that cultural travelers stay longer and spend more. Whether serving the local community or out-of-town

visitors, a vibrant arts and culture industry helps local businesses thrive.

Right now, cities around the world are competing to attract new businesses as well as our brightest young professionals. International studies show that the winners will be communities that offer an abundance of arts and culture opportunities. As the arts flourish, so will creativity and innovation—the fuel that drives our global economy.

Arts & Economic Prosperity III is great news for those whose daily task is to strengthen the economy and enrich quality of life. No longer do business and elected leaders need to choose between arts and economic prosperity. Nationally, as well as locally, the arts mean business!



The Economic Impact of the Nonprofit Arts and Culture Industry in New Hampshire's Monadnock Region

Arts & Economic Prosperity III provides compelling new evidence that the nonprofit arts and culture are a significant industry in the Monadnock Region—one that generates \$16.6 million in local economic activity. This spending—\$13.1 million by nonprofit arts and culture organizations and an additional \$3.5 million in event-related spending by their audiences—supports 477 full-time equivalent jobs, generates \$10.6 million in household income to local residents, and delivers \$1.3 million in local and state government revenue. This economic impact study sends a strong signal that when we support the arts, we not only enhance our quality of life, but we also invest in the Monadnock Region's economic well-being.

In 2007, Americans for the Arts published *Arts & Economic Prosperity III*, the most comprehensive study of its kind ever conducted. It documents the economic impact of the nonprofit arts and culture industry in 116 cities and counties, 35 multi-county regions, and five states—representing all 50 states and the District of Columbia. The diverse study regions range in population (4,000 to 3 million) and type (rural to urban). Researchers collected detailed expenditure and attendance data from 6,080 nonprofit arts and culture organizations and 94,478 of their attendees to measure total industry spending. Project economists customized input/output analysis models to calculate specific and reliable findings for each study region. This study focuses solely on the economic impact of nonprofit arts and culture organizations and event-related spending by their audiences. Not included in this study are spending by individual artists and the for-profit arts and culture sector (e.g., Broadway or the motion picture industry).

This report presents the findings of a new study measuring the economic impact of the nonprofit arts and culture industry in the Monadnock Region. The methodology used is identical to the national study methodology, providing the ability to compare the results with those of the national study participants.

DEFINING ECONOMIC IMPACT

This study uses four measures to define economic impact:

Full-Time Equivalent (FTE) Jobs describes the total amount of labor employed. Economists measure FTE jobs, not the total number of employees, because it is a more accurate measure that accounts for part-time employment.

Resident Household Income (often called Personal Income) includes salaries, wages, and entrepreneurial income paid to local residents.

Revenue to Local and State Government includes revenue from taxes (i.e., income, property, or sales) as well as funds from license fees, utility fees, filing fees, and similar sources.

ECONOMIC IMPACT OF THE ENTIRE NONPROFIT ARTS AND CULTURE INDUSTRY IN THE MONADNOCK REGION

Total spending by nonprofit arts and culture organizations and their audiences totaled \$16.6 million in the Monadnock Region during 2008. The following table shows the direct economic impact of this spending—that is, the initial economic effect of these expenditures.

DIRECT Economic Impact of the Nonprofit Arts and Culture Industry in the Monadnock Region (Spending by Nonprofit Arts and Culture Organizations <u>and</u> Their Audiences)			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Total Expenditures ¹	\$16,631,646	\$27,988,656	\$41,315,605
Full-Time Equivalent Jobs	230	501	778
Resident Household Income	\$5,780,000	\$7,648,000	\$13,519,000
Local Government Revenue	\$210,000	\$364,000	\$845,000
State Government Revenue	\$233,000	\$460,000	\$1,593,000

These direct economic impacts create an additional indirect economic impact on the economy. The local expenditures continue to have an economic impact on the economy until the money eventually “leaks out” of the region (i.e., is spent outside the Monadnock Region). The total economic impact is the combination of the direct economic impact and the indirect economic impact. The table below shows the total economic impact of the \$16.6 million spent by nonprofit arts and culture organizations and their audiences during 2008.

TOTAL Economic Impact of the Nonprofit Arts and Culture Industry in the Monadnock Region (Spending by Nonprofit Arts and Culture Organizations <u>and</u> Their Audiences)			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Total Expenditures ¹	\$16,631,646	\$27,988,656	\$41,315,605
Full-Time Equivalent Jobs	477	824	1,386
Resident Household Income	\$10,585,000	\$14,646,000	\$26,369,000
Local Government Revenue	\$666,000	\$1,170,000	\$2,486,000
State Government Revenue	\$643,000	\$1,513,000	\$3,042,000

DIRECT AND INDIRECT ECONOMIC IMPACT: HOW A DOLLAR IS RE-SPENT IN THE ECONOMY

Arts & Economic Prosperity III uses a sophisticated economic analysis called input/output analysis to measure economic impact. It is a system of mathematical equations that combines statistical methods and economic theory. Input/output analysis enables economists to track how many times a dollar is “re-spent” within the local economy, and the economic impact generated by each round of spending. How can a dollar be re-spent? Consider the following example:

A theater company purchases a gallon of paint from the local hardware store for \$20, generating the direct economic impact of the expenditure. The hardware store then uses a portion of the aforementioned \$20 to pay the sales clerk’s salary; the sales clerk respends some of the money for groceries; the grocery store uses some of the money to pay its cashier; the cashier then spends some for the utility bill; and so on. The subsequent rounds of spending are the indirect economic impacts.

Thus, the initial expenditure by the theater company was followed by four additional rounds of spending (by the hardware store, sales clerk, grocery store, and the cashier). The effect of the theater company’s initial expenditure is the direct economic impact. The effects of the subsequent rounds of spending are all of the indirect impacts. The total impact is the sum of the direct and indirect impacts.

A dollar “ripples” through communities very differently, which is why a customized input/output model was created for the Monadnock Region.

"Mayors understand well the connection between the arts industry and city revenues. Besides providing thousands of jobs, the arts industry generates billions in government and business revenues. Additionally, the arts have played an important role in the economic revitalization of many of our nation’s cities."

—Mayor Douglas H. Palmer
Mayor of Trenton, New Jersey
President, The United States Conference of Mayors

ECONOMIC IMPACT OF SPENDING BY NONPROFIT ARTS AND CULTURE ORGANIZATIONS IN THE MONADNOCK REGION

Nonprofit arts and culture organizations are active contributors to their business community. They are employers, producers, and consumers. They are members of the chamber of commerce as well as key partners in the marketing and promotion of their cities, regions, and states. Spending by nonprofit arts and culture organizations totaled \$13.1 million in the Monadnock Region during 2008. This spending is far-reaching: organizations pay employees, purchase supplies, contract for services, and acquire assets within their community. These actions, in turn, support jobs, create household income, and generate revenue to the local and state governments.

Data were collected from 24 nonprofit arts and culture organizations in the Monadnock Region. Each provided detailed budget information about more than 40 expenditure categories for fiscal year 2008 (e.g., labor, payments to local and non-local artists, operations, materials, facilities, and asset acquisition) as well as their total attendance figures. The following tables demonstrate the direct and total impacts of this spending.

<u>DIRECT</u> Economic Impact of Spending by Nonprofit Arts and Culture Organizations in the Monadnock Region			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Total Expenditures ¹	\$13,089,626	\$16,498,717	\$17,346,252
Full-Time Equivalent Jobs	176	247	244
Resident Household Income	\$4,840,000	\$5,290,000	\$6,049,000
Local Government Revenue	\$147,000	\$115,000	\$179,000
State Government Revenue	\$107,000	\$148,000	\$200,000

<u>TOTAL</u> Economic Impact of Spending by Nonprofit Arts and Culture Organizations in the Monadnock Region			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Total Expenditures ¹	\$13,089,626	\$16,498,717	\$17,346,252
Full-Time Equivalent Jobs	405	541	675
Resident Household Income	\$9,026,000	\$9,565,000	\$13,310,000
Local Government Revenue	\$516,000	\$535,000	\$719,000
State Government Revenue	\$438,000	\$662,000	\$770,000

ECONOMIC IMPACT OF SPENDING BY NONPROFIT ARTS AND CULTURE AUDIENCES IN THE MONADNOCK REGION

The nonprofit arts and culture, unlike most industries, leverage a significant amount of event-related spending by its audiences. For example, when patrons attend an arts event, they may pay to park their car in garage, purchase dinner at a restaurant, eat dessert after the show, and pay a babysitter upon their return home. This spending generates related commerce for local businesses such as restaurants, parking garages, hotels, and retail stores.

To measure the impact of nonprofit arts and culture audiences in the Monadnock Region, data were collected from 1,629 event attendees during 2009-09. Researchers used an audience-intercept methodology, a standard technique in which patrons complete a written survey about their event-related spending while attending the event. The 24 nonprofit arts and culture organizations that responded to the detailed organizational survey reported that the aggregate attendance to their events was 191,709. These attendees spent a total of \$3.5 million, excluding the cost of event admission. The following tables demonstrate the direct and total impacts of this spending.

DIRECT Economic Impact of Spending by Nonprofit Arts and Culture Audiences in the Monadnock Region (excluding the cost of event admission)			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Total Expenditures ¹	\$3,542,020	\$10,572,810	\$24,772,704
Full-Time Equivalent Jobs	54	248	500
Resident Household Income	\$940,000	\$2,886,000	\$7,382,000
Local Government Revenue	\$63,000	\$193,000	\$516,000
State Government Revenue ¹	\$126,000	\$342,000	\$1,282,000

TOTAL Economic Impact of Spending by Nonprofit Arts and Culture Audiences in the Monadnock Region (excluding the cost of event admission)			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Total Expenditures	\$3,542,020	\$10,572,810	\$24,772,704
Full-Time Equivalent Jobs	72	315	711
Resident Household Income	\$1,559,000	\$4,451,000	\$13,059,000
Local Government Revenue	\$150,000	\$474,000	\$1,390,000
State Government Revenue	\$205,000	\$579,000	\$2,176,000

VISITORS SPEND MORE

In addition to spending data, the 1,629 audience survey respondents were asked to provide the ZIP code of their primary residence, enabling researchers to determine which attendees were local (i.e., reside within the Monadnock Region) and which were non-local (reside outside the Region). In the Monadnock Region, 70.8 percent of the 191,709 nonprofit arts attendees were local; 29.2 percent were non-local.

Non-local arts and culture event attendees spent an average of 101 percent more than local attendees per person (\$28.65 vs. \$14.28). As would be expected from a traveler, higher spending was typically found in the categories of lodging, meals, and transportation. These data demonstrate that when a community attracts cultural tourists, it harnesses significant economic rewards.

Event-Related Spending by Arts and Culture Event Attendees Totaled \$3.5 million in the Monadnock Region (excluding the cost of event admission)			
	Residents	Non-Residents	All Monadnock Region Event Attendees
Total Event Attendance	135,730	55,979	191,709
Percent of Attendees	70.8%	29.2%	100%
Average Dollars Spent Per Attendee	\$14.28	\$28.65	\$18.46
Total Event-Related Spending	\$1,938,224	\$1,603,796	\$3,542,020

Nonprofit Arts and Culture Event Attendees Spend an Average of \$18.46 Per Person in the Monadnock Region (excluding the cost of event admission)			
	Residents	Non-Residents	All Monadnock Region Event Attendees
Refreshments/Snacks During Event	\$1.31	\$2.12	\$1.55
Meals Before/After Event	\$8.57	\$12.02	\$9.57
Souvenirs and Gifts	\$1.13	\$2.12	\$1.42
Clothing and Accessories	\$0.94	\$1.12	\$0.99
Ground Transportation	\$1.01	\$3.22	\$1.65
Event-Related Child Care	\$0.26	\$0.42	\$0.30
Overnight Lodging (<i>one night only</i>)	\$0.74	\$6.79	\$2.51
Other	\$0.32	\$0.84	\$0.47
Total Per Person Spending	\$14.28	\$28.65	\$18.46

Voluntarism and In-Kind Contributions

AN ECONOMIC IMPACT BEYOND DOLLARS

Arts & Economic Prosperity III reveals a significant contribution to nonprofit arts and culture organizations as a result of voluntarism. In 2008, 1,537 arts volunteers donated 74,551 hours to the Monadnock Region's nonprofit arts and culture organizations. This represents a donation of time with an estimated value of \$1,509,658 (Independent Sector estimates the value of the average 2008 volunteer hour to be \$20.25).² While these arts volunteers may not have an economic impact as defined in this study, they clearly have an enormous impact by helping the Monadnock Region's nonprofit arts and culture organizations function as a viable industry.

In addition, the nonprofit arts and culture organizations surveyed for this study were asked about the sources and value of their in-kind support. In-kind contributions are non-cash donations such as materials (e.g., office supplies from a local retailer), facilities (e.g., rent), and services (e.g., printing costs from a local printer). The 24 responding nonprofit arts and culture organizations in the Monadnock Region reported that they received in-kind contributions with an aggregate value of \$185,546 during 2008. These contributions were received from a variety of sources including corporations, individuals, local and state arts agencies, and government.

"The arts benefit communities as well as individuals. Cities and towns with flourishing cultural activities attract businesses and tourists and provide tremendous incentives for families. There are wonderful models in Massachusetts and across the country of communities that have integrated cultural institutions into revitalizations efforts. They have strengthened their economies and greatly improved quality of life in their neighborhoods."

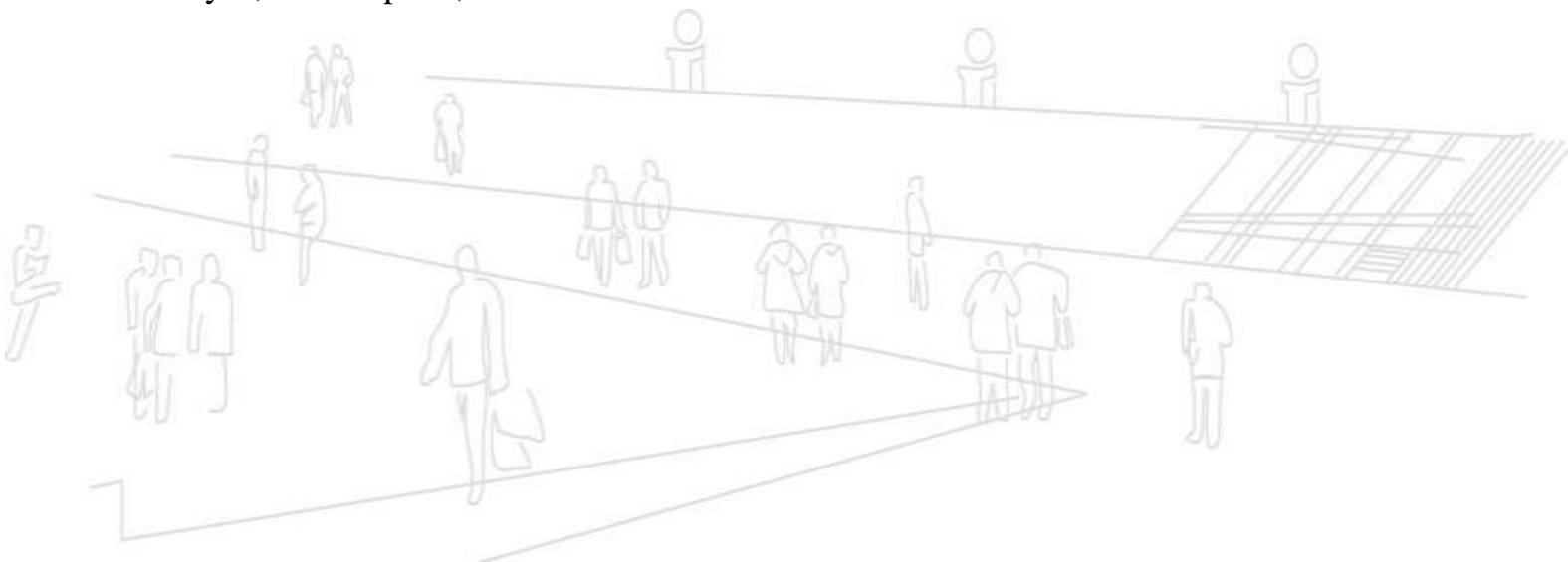
—Senator Edward Kennedy, Massachusetts
Co-Chairman, Senate Cultural Caucus

"Across America, cities that once struggled economically are reinventing and rebuilding themselves by investing in arts and culture. Both are proven catalysts for growth and economic prosperity. By creating cultural hubs, nonprofit art businesses help cities define themselves, draw tourists, and attract investment. Federal support for America's nonprofit cultural organizations must go on if we hope to continue enjoying the substantial benefits they bring."

—Representative Louise M. Slaughter, U.S. House of Representatives
Co-Chair, Congressional Arts Caucus

"This report reinforces why many cities and towns across the nation are stepping up to support the continued growth of arts and culture. Not only do the arts provide a much needed social escape for many in our communities – they also help drive local economies. Having an abundance of unique arts and events means more revenue for local businesses and makes our communities more attractive to young, talented professionals—whose decisions on where to start a career or business are increasingly driven by quality of life and the availability of cultural amenities."

—Bart Peterson
President, National League of Cities
Mayor, Indianapolis, Indiana



Conclusion

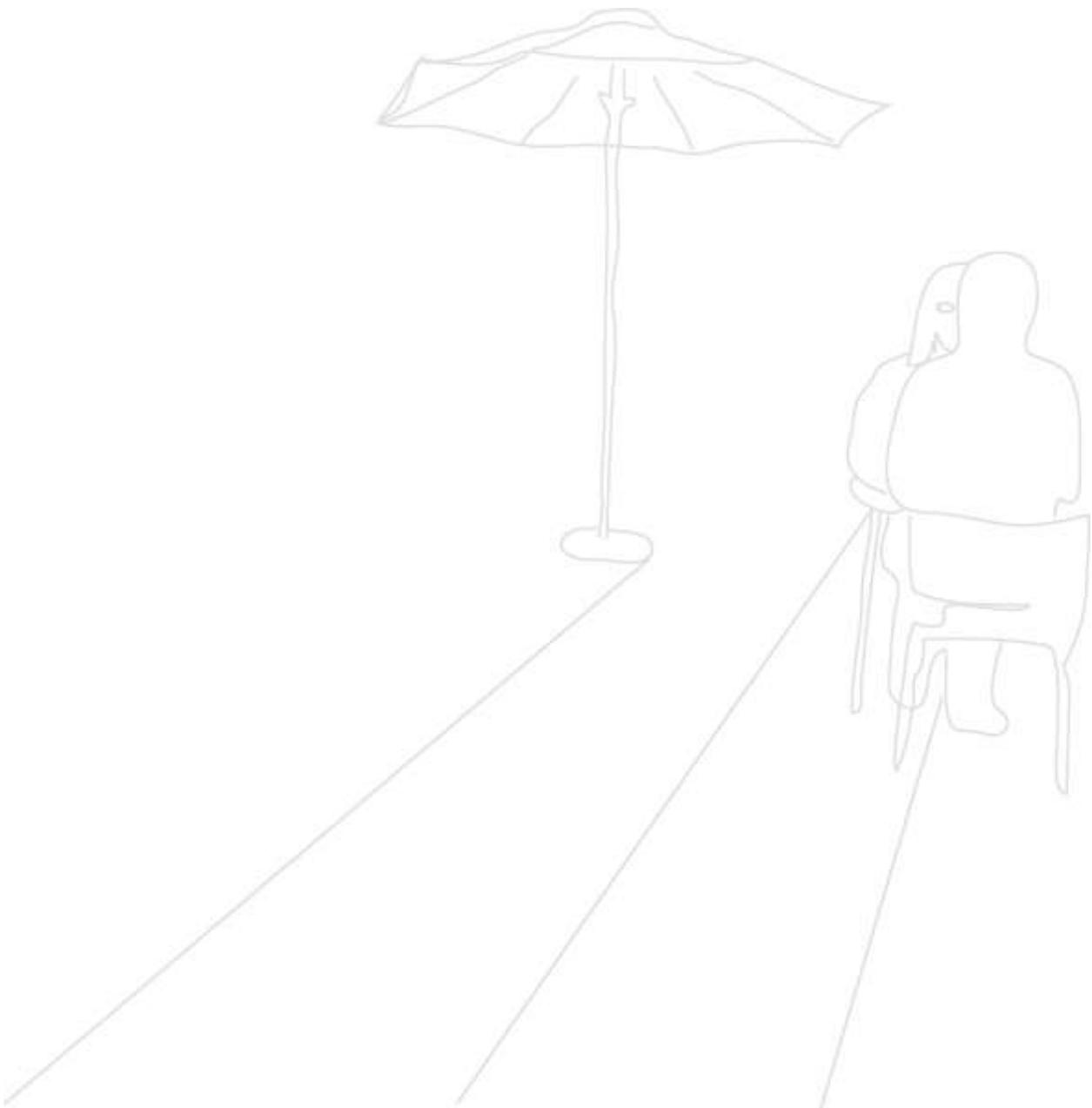
The nonprofit arts and culture are a \$16.6 million industry in the Monadnock Region—one that supports 477 full-time equivalent jobs and generates \$1.3 million in local and state government revenue. Nonprofit arts and culture organizations, which spend \$13.1 million annually, leverage a remarkable \$3.5 million in additional spending by arts and culture audiences—spending that pumps vital revenue into local restaurants, hotels, retail stores, parking garages, and other businesses in the Monadnock Region. By demonstrating that investing in the arts and culture yields economic benefits, *Arts & Economic Prosperity III* lays to rest a common misconception: that communities support the arts and culture at the expense of local economic development. In fact, they are investing in an industry that supports jobs, generates government revenue, and is a cornerstone of tourism. This report shows conclusively that **the arts mean business in New Hampshire’s Monadnock Region!**

"In my own philanthropy and business endeavors I have seen the critical role that the arts play in stimulating creativity and in developing vital communities. As this study indicates, the arts have a crucial impact on our economy and are an important catalyst for learning, discovery, and achievement in our country."

—Paul G. Allen
Philanthropist
Co-Founder, Microsoft

"On a personal level, I recognize the joyous celebration I experience from the arts and as a policy-maker, I recognize the tremendous economic contribution of the arts, from the most sophisticated urban center to the most precious rural community."

—Senator Leticia Van de Putte, Texas
President, National Conference of State Legislatures



Arts & Economic Prosperity III Calculator

ESTIMATING ECONOMIC IMPACT IN THE MONADNOCK REGION

To make it easier to compare the economic impacts of different organizations within the Monadnock Region, the project researchers calculated the economic impact per \$100,000 of spending by nonprofit arts and culture organizations and their audiences.

ECONOMIC IMPACT PER \$100,000 OF SPENDING BY NONPROFIT ARTS AND CULTURE ORGANIZATIONS

For every \$100,000 in spending by a nonprofit arts and culture organization in the Monadnock Region, there was the following total economic impact.

Ratios of Economic Impact Per \$100,000 of Spending by Nonprofit Arts and Culture Organizations in the Monadnock Region			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Full-Time Equivalent Jobs	3.09	2.86	3.46
Resident Household Income	\$68,955	\$64,896	\$71,221
Local Government Revenue	\$3,942	\$3,588	\$4,200
State Government Revenue	\$3,346	\$4,051	\$6,979

An Example of How to Use the Organizational Spending Calculator Table (above)

An administrator from a nonprofit arts and culture organization that has total expenditures of \$250,000 wants to determine the organization’s total economic impact on full-time equivalent (FTE) employment in the Monadnock Region. The administrator would:

1. Determine the amount spent by the nonprofit arts and culture organization;
2. Divide the total expenditure by 100,000; and
3. Multiply that figure by the FTE employment ratio per \$100,000 for the Monadnock Region.

Thus, \$250,000 divided by 100,000 equals 2.5; 2.5 times 3.09 (from the table above—*Ratios of Economic Impact Per \$100,000 of Spending by Nonprofit Arts and Culture Organizations in the Monadnock Region*) equals a total of 7.7 full-time equivalent jobs supported (both directly and indirectly) within the Monadnock Region by that nonprofit arts and culture organization. Using the same procedure, the estimate can be calculated for resident household income and local and state government revenue.

ECONOMIC IMPACT PER \$100,000 OF SPENDING BY NONPROFIT ARTS AND CULTURE AUDIENCES

The economic impact of event-related spending by arts audiences also can be derived for individual or groups of nonprofit arts and culture organizations and events in the Monadnock Region.

The first step is to determine the total estimated event-related spending by arts and culture event attendees (excluding the cost of admission). To derive this figure, multiply the average per person event-related expenditure in the Monadnock Region by the total event attendance. The ratios of economic impact per \$100,000 in spending then can be used to determine the total economic impact of the total estimated audience spending.

Average Per Person Event-Related Spending by All Arts and Culture Event Attendees in the Monadnock Region (excluding the cost of event admission)			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Refreshments/Snacks During Event	\$1.55	\$2.85	\$2.94
Meals Before/After Event	\$9.57	\$9.26	\$10.06
Souvenirs and Gifts	\$1.42	\$3.42	\$3.90
Clothing and Accessories	\$0.99	\$1.31	\$1.62
Ground Transportation	\$1.65	\$2.18	\$2.72
Event-Related Child Care	\$0.30	\$0.31	\$0.34
Overnight Lodging (<i>one night only</i>)	\$2.51	\$4.17	\$5.01
Other	\$0.47	\$1.09	\$1.20
Total Per Person Spending	\$18.46	\$24.59	\$27.79

Ratios of Economic Impact Per \$100,000 of Spending by Nonprofit Arts and Culture Audiences in the Monadnock Region			
	Monadnock Region	Median of Similar Study Regions Pop. = 100,000 to 249,999	National Median
Full-Time Equivalent Jobs	2.03	2.97	2.60
Resident Household Income	\$44,014	\$43,562	\$47,591
Local Government Revenue	\$4,235	\$5,073	\$4,628
State Government Revenue	\$5,788	\$5,398	\$8,586

An Example of How to Use the Audience Spending Calculator Tables (on the preceding page)

An administrator wants to determine the total economic impact of the 25,000 total attendees to his/her organization's nonprofit arts and culture events on full-time equivalent (FTE) employment in the Monadnock Region. The administrator would:

1. Determine the total estimated audience spending by multiplying the average per person expenditure for the Monadnock Region by the total attendance to nonprofit arts and culture events;
2. Divide the resulting total estimated audience spending by 100,000; and
3. Multiply that figure by the FTE employment ratio per \$100,000 for the Monadnock Region.

Thus, 25,000 times \$18.46 (from the top table on the preceding page—*Average Per Person Event-Related Spending by Arts and Culture Event Attendees in the Monadnock Region*) equals \$923,000; \$923,000 divided by 100,000 equals 9.23; 9.23 times 2.03 (from the bottom table on the preceding page—*Ratios of Economic Impact Per \$100,000 of Spending by Nonprofit Arts and Culture Audiences in the Monadnock Region*) equals a total of 18.7 full-time equivalent jobs supported (both directly and indirectly) within the Monadnock Region by that nonprofit arts and culture organization. Using the same procedure, the estimate can be calculated for resident household income and local and state government revenue.



"We in the public sector need to keep in mind what an important role the arts play in economic development. Part of a community's vibrancy is defined by its arts and culture quality and diversity. All the things we do at the county level to support the arts can make a difference and I encourage county officials to step up to make sure their communities understand the linkage between local economic development and the arts."

—Linda Langston
Linn County Supervisor, Iowa
Chair, Arts Commission, National Association of Counties

"North Dakota's participation in this study shows the economic impact the arts can have in rural and urban economies alike. We look forward to the state arts council further exploring the role of arts in rural economic development."

—Jack Dalrymple

Lt. Governor, North Dakota

Chair Elect, National Lieutenant Governors Association



Comparisons with Similarly Populated Study Regions

For the purpose of this study, the Monadnock Region is defined as all of Cheshire County and western Hillsborough County (in total, the Monadnock Region includes the towns of Alstead, Antrim, Bennington, Chesterfield, Deering, Dublin, Fitzwilliam, Frankestown, Gilsun, Greenfield, Greenville, Hancock, Harrisville, Hillsborough, Hinsdale, Jaffrey, Keene, Lyndeborough, Marlborough, Marlow, Mason, Milford, Nelson, New Ipswich, Peterborough, Richmond, Rindge, Roxbury, Sharon, Stoddard, Sullivan, Surry, Swanzey, Temple, Troy, Walpole, Westmoreland, Wilton, Winchester, and Windsor).

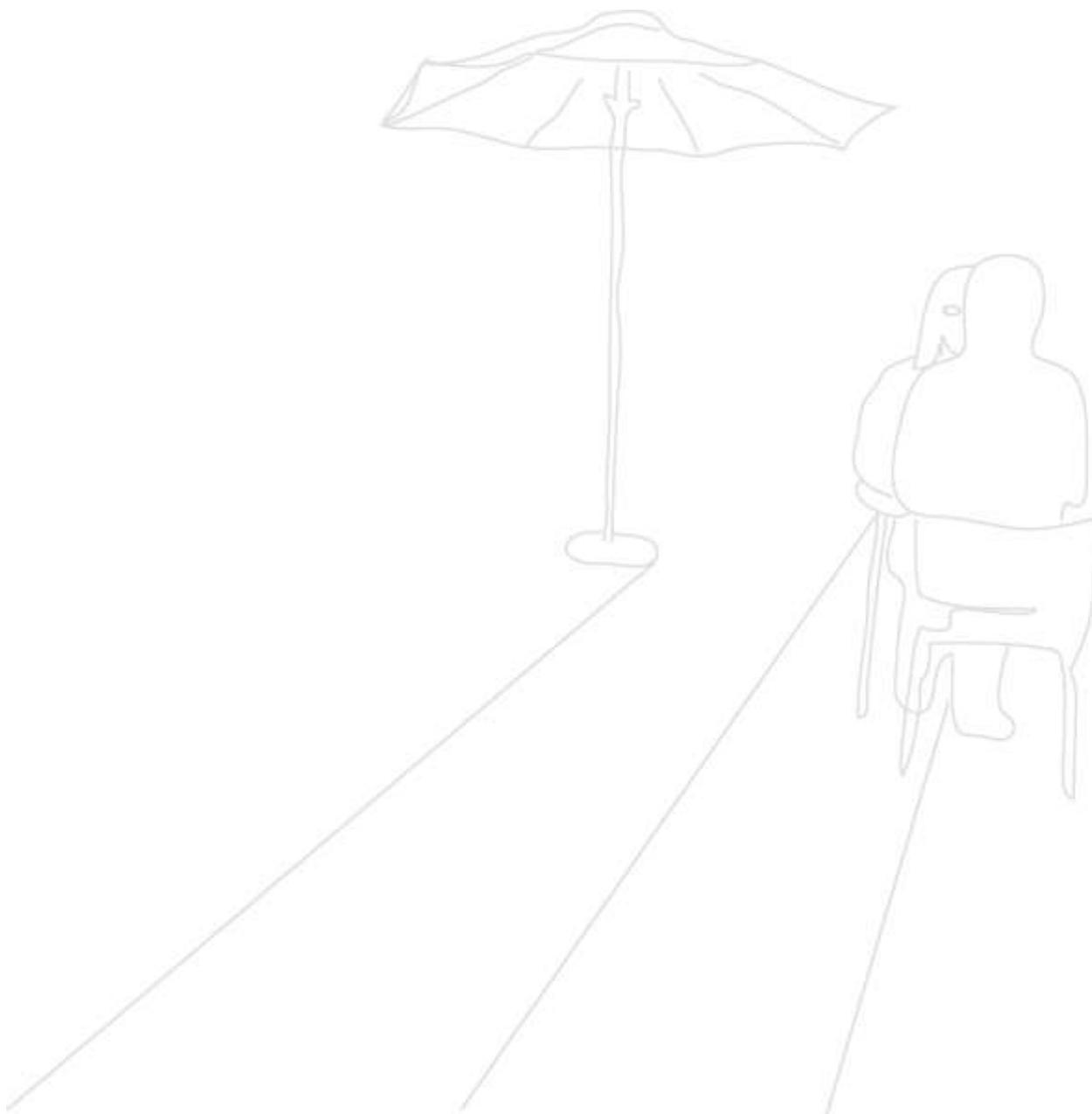
According to the most recent data available from the U.S. Census Bureau, the population of the Monadnock Region was estimated to be 131,886 during 2008. The table below compares the economic impact results for the Monadnock Region with those of other similarly sized economic impact study participants (populations of 100,000 to 199,999).

For more comparisons, data tables containing the detailed survey results for all 156 communities that participated in *Arts & Economic Prosperity III* are located in Appendix A of the full National Report. **All three national study reports are available for download and purchase at www.AmericansForTheArts.org/EconomicImpact**, including the Highlights Brochure, the Summary Report, and the full National Report.

Study Region	2005 Population	Total Industry Expenditures (Organizations & Audiences)	Full-Time Equivalent Jobs	Resident Household Income	Local Government Revenue	State Government Revenue
Abilene, TX	114,757	\$17,853,499	540	\$9,238,000	\$1,170,000	\$738,000
Fort Collins, CO	128,026	\$15,974,827	467	\$7,530,000	\$1,103,000	\$567,000
Humboldt County, CA	128,376	\$16,097,731	424	\$7,318,000	\$682,000	\$795,000
Savannah, GA	128,453	\$46,632,526	1,606	\$26,496,000	\$2,898,000	\$1,901,000
Marathon County, WI	128,941	\$9,766,793	334	\$5,823,000	\$334,000	\$451,000
Monadnock Region, NH	131,886	\$16,631,646	477	\$10,585,000	\$666,000	\$643,000
Fullerton, CA	132,787	\$69,484,580	1,349	\$28,013,000	\$1,760,000	\$2,380,000
Alexandria, VA	135,337	\$80,009,394	1,803	\$30,192,000	\$3,072,000	\$2,639,000
Island of Maui, HI	139,884	\$22,187,843	544	\$9,896,000	\$296,000	\$1,023,000
Greater Burlington, VT	149,613	\$26,892,997	889	\$14,646,000	\$754,000	\$1,565,000
Tempe, AZ	161,143	\$27,988,656	722	\$15,620,000	\$940,000	\$1,041,000
Bay County, FL	161,558	\$3,184,461	92	\$1,656,000	\$151,000	\$143,000
Ulster County, NY	182,693	\$3,976,415	86	\$1,956,000	\$274,000	\$146,000
Whatcom County, WA	183,471	\$14,102,559	511	\$9,515,000	\$538,000	\$666,000
Champaign County, IL	184,905	\$25,152,865	824	\$13,337,000	\$1,070,000	\$933,000
Doña Ana County, NM	189,444	\$3,853,446	79	\$2,088,000	\$139,000	\$229,000
Boise, ID	193,161	\$38,024,057	1,262	\$23,613,000	\$1,280,000	\$2,228,000
Tacoma, WA	195,898	\$36,758,318	967	\$17,976,000	\$1,500,000	\$1,868,000

"The arts have been and continue to be an important part of Arizona's culture. By igniting the mind, the arts can spark new ways of thinking, communicating, and doing business.

—Janet Napolitano
Governor, Arizona
Chair, National Governors Association



About This Study

The *Arts & Economic Prosperity III* study was conducted by Americans for the Arts to document the economic impact of the nonprofit arts and culture industry in 156 communities and regions (116 cities and counties, 35 multi-county regions, and five states)—representing all 50 states and the District of Columbia.

The diverse communities range in population (4,000 to 3 million) and type (rural to urban). The study focuses solely on nonprofit arts and culture organizations and their audiences. Public arts councils and public presenting facilities/institutions are included as are select programs embedded within another organization (that have their own budget and play a substantial role in the cultural life of the community). The study excludes spending by individual artists and the for-profit arts and entertainment sector (e.g., Broadway or the motion picture industry). Detailed expenditure data were collected from 6,080 arts and culture organizations and 94,478 of their attendees. The project economists, from the Georgia Institute of Technology, customized input/output analysis models for each study region to provide specific and reliable economic impact data about their nonprofit arts and culture industry, specifically full-time equivalent jobs, household income, and local and state government revenue.

THE 156 LOCAL AND REGIONAL STUDY PARTNERS

Americans for the Arts published a Call for Participants in 2005 seeking communities interested in participating in the *Arts & Economic Prosperity III* study. Of the more than 200 potential partners that expressed interest, 156 agreed to participate and complete four participation criteria: (1) identify and code the universe of nonprofit arts and culture organizations in their study region; (2) disseminate,

collect, and review for accuracy expenditure surveys from those organizations; (3) conduct audience-intercept surveys at a minimum of 16 diverse arts events; and (4) pay a modest cost-sharing fee (no community was refused participation for an inability to pay).

Arts Alive! contracted with Americans for the Arts to conduct an economic impact study focusing on the nonprofit arts and culture industry in the Monadnock Region. The methodology used is identical to the national study methodology, providing the ability to compare the results for the Monadnock Region with those of the national study participants.

SURVEYS OF NONPROFIT ARTS AND CULTURE ORGANIZATIONS

Each of the 156 study regions attempted to identify its complete universe of nonprofit arts and culture organizations using the Urban Institute's National Taxonomy of Exempt Entity (NTEE)³ codes as a guideline. Eligible nonprofit arts and culture organizations—those whose primary purpose is to promote appreciation for and understanding of the visual, performing, folk, and media arts—received a web-based survey. Sent via email, the survey collected detailed information about their 2005 fiscal year expenditures in more than 40 expenditure categories, including labor, local and non-local artists, operations, materials, facilities, and asset acquisition. Data were collected from 6,080

organizations for this study. Response rates for the 156 communities averaged 41.3 percent and ranged from 10.4 percent to 100 percent. Responding organizations had budgets ranging from a low of \$0 to a high of \$159.2 million. Each study region's results are based solely on the actual survey data collected, not on fiscal projections. The less-than-100 percent response rates suggest an understatement of the economic impact findings in most of the individual study regions. The following NTEE categories of nonprofit arts, culture, and humanities organizations were included in this study:

- A02, Management and Technical Assistance Organizations
- A03, Professional Societies and Associations
- A05, Research Institutes and Policy Analysis Organizations
- A11, Single Support Organizations
- A12, Fund Raising and Fund Distributing Organizations
- A23, Cultural and Ethnic Awareness Organizations
- A24, Folk Arts and Traditional Arts Organizations
- A25, Arts Education Organizations
- A26, Arts Councils and City Presenting Facilities
- A31, Film and Video Organizations
- A32, Public Access Television Studios
- A40, Visual Arts Organizations
- A45, Architectural Organizations
- A46, Drawing Organizations
- A47, Ceramic Arts Organizations
- A48, Art Conservation Organizations
- A51, Art Museums
- A52, Children's Museums
- A53, Folk Arts and Ethnic Museums
- A54, History Museums
- A55, Marine and Maritime Museums
- A56, Natural History and Natural Science Museums
- A57, Science and Technology Museums
- A58, Sports and Hobby Museums
- A59, Specialized Museums
- A61, Performing Arts Centers
- A62, Dance Organizations
- A63, Ballet Organizations
- A64, Choreography Organizations
- A65, Theaters
- A66, Playwriting Organizations
- A67, Musical Theaters

- A68, Music Organizations
- A69, Symphony Orchestras
- A6A, Theaters
- A6B, Singing or Choral Organizations
- A6C, Music Groups, Bands, or Ensembles
- A6D, Music Composition Organizations
- A6E, Performing Arts Schools
- A71, Art History Organizations
- A76, Literary Service Organizations and Activities
- A82, Historical Societies
- A84, Fairs, Festivals, and other Commemorative Events
- A91, Artist Service Organizations

In the Monadnock Region, 24 of the 58 total eligible nonprofit arts and culture organizations identified by Arts Alive! responded to the survey—a response rate of 41 percent. The responding organizations had a range of operating budgets from \$0 to \$3,938,698.

SURVEYS OF NONPROFIT ARTS AND CULTURE AUDIENCES

Audience-intercept surveying, a common and accepted research method, was completed in 152 of the 156 study regions to measure spending by audiences at nonprofit arts and culture events. Patrons were asked to complete a short survey while attending an event. A total of 94,478 attendees completed the survey for an average of 673 surveys per community. The randomly selected respondents provided itemized expenditure data on attendance-related activities such as meals, souvenirs, transportation, and lodging. Data were collected throughout 2006 (to guard against seasonal spikes or drop-offs in attendance) as well as at a broad range of events (a night at the opera will typically yield more spending than a Saturday children's theater production, for example). Using total attendance data for 2005 (collected from the organization surveys), standard statistical methods were then used to derive a reliable estimate of total expenditures by attendees in each community. The survey respondents provided information about the entire party with whom they

were attending the event. With an average travel party size of three people, these data actually represent the spending patterns of more than 280,000 attendees, significantly increasing the reliability of the data.

In the Monadnock Region, a total of 1,629 audience intercept surveys were collected from attendees to nonprofit arts and culture events during 2008-09.

ECONOMIC ANALYSIS

A common theory of community growth is that an area must export goods and services if it is to prosper economically. This theory is called economic-base theory, and it depends on dividing the economy into two sectors: the export sector and the local sector. Exporters, such as automobile manufacturers, hotels, and department stores, obtain income from customers outside of the community. This “export income” then enters the local economy in the form of salaries, purchases of materials, dividends, and so forth, and becomes income to local residents. Much of it is re-spent locally; some, however, is spent for goods imported from outside of the community. The dollars re-spent locally have a positive economic impact as they continue to circulate through the local economy. This theory applies to arts organizations as well as to other producers.

STUDYING ECONOMIC IMPACT USING INPUT/OUTPUT ANALYSIS

To derive the most reliable economic impact data, input-output analysis is used to measure the impact of expenditures by nonprofit arts and culture organizations and their audiences. This is a highly regarded type of economic analysis that has been the basis for two Nobel Prizes in economics. The models are systems of mathematical equations that combine statistical methods and economic theory in an area of study called econometrics. The analysis traces how

many times a dollar is re-spent within the local economy before it leaks out, and it quantifies the economic impact of each round of spending. This form of economic analysis is well suited for this study because it can be customized specifically to each community.

An input/output model was customized for the Monadnock Region based on the local dollar flow between 533 finely detailed industries within its economy. This was accomplished by using detailed data on employment, incomes, and government revenues provided by the U.S. Department of Commerce (e.g., County Business Patterns, Regional Economic Information System, Survey of State and Local Finance), local tax data (sales taxes, property taxes, and miscellaneous local option taxes), as well as the survey data from the responding nonprofit arts and culture organizations and their audiences.

THE INPUT/OUTPUT PROCESS

The input-output model is based on a table of 533 finely detailed industries showing local sales and purchases. The local and state economy of each community is researched so the table can be customized for each community. The basic purchase patterns for local industries are derived from a similar table for the U.S. economy for 2002 (the latest detailed data available from the U.S. Department of Commerce). The table is first reduced to reflect the unique size and industry mix of the local economy, based on data from County Business Patterns and the Regional Economic Information System of the U.S. Department of Commerce. It is then adjusted so that only transactions with local businesses are recorded in the inter-industry part of the table. This technique compares supply and demand and estimates the additional imports or exports required to make total supply equal total demand. The resulting table shows the detailed sales and purchase patterns of the local industries. The 533-industry table is then aggregated

to reflect the general activities of 32 industries plus local households, creating a total of 33 industries. To trace changes in the economy, each column is converted to show the direct requirements per dollar of gross output for each sector. This direct-requirements table represents the “recipe” for producing the output of each industry.

The economic impact figures for *Arts & Economic Prosperity III* were computed using what is called an “iterative” procedure. This process uses the sum of a power series to approximate the solution to the economic model. This is what the process looks like in matrix algebra:

$$T = IX + AX + A^2X + A^3X + \dots + A^nX.$$

T is the solution, a column vector of changes in each industry’s outputs caused by the changes represented in the column vector X. A is the 33 by 33 direct-requirements matrix. This equation is used to trace the direct expenditures attributable to nonprofit arts organizations and their audiences. A multiplier effect table is produced that displays the results of this equation. The total column is T. The initial expenditure to be traced is IX (I is the identity matrix, which is operationally equivalent to the number 1 in ordinary algebra). Round 1 is AX, the result of multiplying the matrix A by the vector X (the outputs required of each supplier to produce the goods and

services purchased in the initial change under study). Round 2 is A²X, which is the result of multiplying the matrix A by Round 1 (it answers the same question applied to Round 1: “What are the outputs required of each supplier to produce the goods and services purchased in Round 1 of this chain of events?”). Each of columns 1 through 12 in the multiplier effects table represents one of the elements in the continuing but diminishing chain of expenditures on the right side of the equation. Their sum, T, represents the total production required in the local economy in response to arts activities.

Calculation of the total impact of the nonprofit arts on the outputs of other industries (T) can now be converted to impacts on the final incomes to local residents by multiplying the outputs produced by the ratios of household income to output and employment to output. Thus, the employment impact of changes in outputs due to arts expenditures is calculated by multiplying elements in the column of total outputs by the ratio of employment to output for the 32 industries in the region. Changes in household incomes, local government revenues, and state government revenues due to nonprofit arts expenditures are similarly transformed. The same process is also used to show the direct impact on incomes and revenues associated with the column of direct local expenditures.

END NOTES

¹ Americans for the Arts’ proprietary economic impact methodology does not employ the use of an expenditure multiplier. The “Total Expenditures” figure listed on the data tables on Pages 4, 6, and 7 of this report are identical because we measure the economic impacts of only the actual expenditures reported. An explanation of the difference between “direct” and “total” economic impacts can be found on Page 5 of this report.

² Giving and Volunteering in the United States 2008, Independent Sector, 2009.

³ The National Taxonomy of Exempt Entities (NTEE)—developed by the National Center for Charitable Statistics at the Urban Institute—is a definitive classification system for nonprofit organizations recognized as tax exempt by the Internal Revenue Code. This system divides the entire universe of nonprofit organizations in ten broad categories, including “Arts, Culture, and Humanities.” The Urban Institute estimates that approximately 100,000 are currently in operation.

Frequently Used Terms

This section provides a glossary of economic impact terminology, sorted alphabetically in ascending order.

CULTURAL TOURISM

Travel directed toward experiencing the arts, heritage, and special character of a place.

DIRECT ECONOMIC IMPACT

A measure of the economic effect of the initial expenditure within a community. For example, when the symphony pays its players, each musician's salary, the associated government taxes, and full-time equivalent employment status represent the direct economic impact.

DIRECT EXPENDITURES

The first round of expenditures in the economic cycle. A paycheck from the symphony to the violin player and a ballet company's purchase of dance shoes are examples of direct expenditures.

ECONOMETRICS

The process of using statistical methods and economic theory to develop a system of mathematical equations that measures the flow of dollars between local industries. The input-output model developed for this study is an example of an econometric model.

ECONOMETRICIAN

An economist who designs, builds, and maintains econometric models.

FULL-TIME EQUIVALENT (FTE) JOBS

A term that describes the total amount of labor employed. Economists measure FTE jobs—not the total number of employees—because it is a more accurate measure of total employment. It is a manager's discretion to hire one full-time employee, two half-time employees, four quarter-time employees, etc. Almost always, more people are affected than are reflected in the number of FTE jobs reported due to the abundance of part-time employment, especially in the nonprofit arts and culture industry.

INDIRECT IMPACT

Each time a dollar changes hands, there is a measurable economic impact. When people and businesses receive money, they re-spend much of that money locally. Indirect impact measures the effect of this re-spending on jobs, household income, and revenue to local and state government. It is often referred to as secondary spending or the dollars "rippling" through a community. When funds are eventually spent non-locally, they are considered to have "leaked out" of the community and therefore cease to have a local economic impact. Indirect impact is the sum of the impact of all rounds of spending.

INPUT-OUTPUT ANALYSIS

A system of mathematical equations that combines statistical methods and economic theory in an area of economic study called econometrics. Economists use this model (occasionally called an inter-industry model) to measure how many times a dollar is re-spent in, or “ripples” through, a community before it leaks out (see Leakage). The model is based on a matrix that tracks the dollar flow between 533 finely detailed industries in each community. It allows researchers to determine the economic impact of local spending by nonprofit arts and culture organizations on jobs, household income, and government revenue.

LEAKAGE

The money that community members spend outside of a community. This non-local spending has no economic impact within the community. A ballet company purchasing shoes from a non-local manufacturer is an example of leakage. If the shoe company were local, the expenditure would remain within the community and create another round of spending by the shoe company.

MULTIPLIER (often called Economic Activity Multiplier)

An estimate of the number of times that a dollar changes hands within the community before it leaks out of the community (for example, the theater pays the actor, the actor spends money at the grocery store, the grocery store pays its cashier, and so on). This estimate is quantified as one number by which all expenditures are multiplied. For example, if the arts are a \$10 million industry and a multiplier of three is used, then it is estimated that these arts organizations have a total economic impact of \$30 million. The convenience of a multiplier is that it is one simple number; its shortcoming, however, is its reliability. Users rarely note that the multiplier is developed by making gross estimates of the industries within the local economy with no allowance for differences in the characteristics of those industries, usually resulting in an overestimation of the economic impact. In contrast, the input-output model employed in *Arts & Economic Prosperity III* is a type of economic analysis tailored specifically to each community and, as such, provides more reliable and specific economic impact results.

RESIDENT HOUSEHOLD INCOME (often called Personal Income)

The salaries, wages, and entrepreneurial income residents earn and use to pay for food, mortgages, and other living expenses. It is important to note that resident household income is not just salary. When a business receives money, for example, the owner usually takes a percentage of the profit, resulting in income for the owner.

REVENUE TO LOCAL AND STATE GOVERNMENT

Local and state government revenue is not derived exclusively from income, property, sales, and other taxes. It also includes license fees, utility fees, user fees, and filing fees. Local government revenue includes funds to city and county government, schools, and special districts.

Frequently Asked Questions

This section answers some common questions about this study and the methodology used to complete it.

HOW WERE THE 156 PARTICIPATING COMMUNITIES AND REGIONS SELECTED?

In 2005, Americans for the Arts published a Call for Participants for communities interested in participating in the *Arts & Economic Prosperity III* study. Of the more than 200 participants that expressed interest, 156 agreed to participate and complete four participation criteria: (1) identify and code the universe of nonprofit arts and culture organizations in their study region; (2) disseminate, collect, and review for accuracy expenditure surveys from those organizations; (3) conduct audience-intercept surveys at a minimum of 15 diverse arts events; and (4) pay a modest cost-sharing fee (no community was refused participation for an inability to pay).

HOW WERE THE ELIGIBLE NONPROFIT ARTS ORGANIZATIONS IN EACH COMMUNITY SELECTED?

Local partners attempted to identify their universe of nonprofit arts and culture organizations using the Urban Institute's National Taxonomy of Exempt Entity (NTEE) codes as a guideline. Eligible organizations included those whose primary purpose is to promote appreciation for and understanding of the visual, performing, folk, and media arts. Public arts councils, public presenting facilities or institutions, and embedded organizations that have their own budget also were included if they play a substantial role in the cultural life of the community.

WHAT TYPE OF ECONOMIC ANALYSIS WAS DONE TO DETERMINE THE STUDY RESULTS?

An input-output analysis model was customized for each of the participating communities and regions to determine the local economic impact their nonprofit arts and culture organizations and arts audiences. Americans for the Arts, which conducted the research, worked with a highly regarded economist to design the input-output model used for this study.

WHAT OTHER INFORMATION WAS COLLECTED IN ADDITION TO THE ARTS SURVEYS?

In addition to detailed expenditure data provided by the surveyed organizations, extensive wage, labor, tax, and commerce data were collected from local, state, and federal governments for use in the input-output model.

WHY DOESN'T THIS STUDY USE A MULTIPLIER?

When many people hear about an economic impact study, they expect the result to be quantified in what is often called a multiplier or an economic activity multiplier. The economic activity multiplier is an estimate of the number of times a dollar changes hands within the community (e.g., a theater pays its actor, the actor spends money at the grocery store, the grocery store pays the cashier, and so on). It is quantified as one number by which expenditures are multiplied. The convenience of the multiplier is that it is one simple number. Users rarely note, however, that the multiplier is developed by making gross estimates of the industries within the local economy and does not allow for differences in the characteristics of those industries. Using an economic activity multiplier usually results in an overestimation of the economic impact and therefore lacks reliability.

WHY ARE THE ADMISSIONS EXPENSES EXCLUDED FROM THE ANALYSIS OF AUDIENCE SPENDING?

Researchers make the assumption that any admissions dollars paid by event attendees are typically collected as revenue for the organization that is presenting the event. The organization then spends those dollars. The admissions paid by audiences are excluded because those dollars are captured in the operating budgets of the eligible nonprofit arts and culture organizations on the Organizational Expenditure Survey. This methodology avoids “double-counting” those dollars in the analysis.

HOW IS THE ECONOMIC IMPACT OF ARTS AND CULTURE ORGANIZATIONS DIFFERENT FROM OTHER INDUSTRIES?

Any time money changes hands there is a measurable economic impact. Social service organizations, libraries, and all entities that spend money have an economic impact. What makes the economic impact of arts and culture organizations unique is that, unlike most other industries, they induce large amounts of related spending by their audiences. For example, when patrons attend a performing arts event, they may purchase dinner at a restaurant, eat dessert after the show, and return home and pay the baby-sitter. All of these expenditures have a positive and measurable impact on the economy.

WILL MY LOCAL LEGISLATORS BELIEVE THESE RESULTS?

Yes, this study makes a strong argument to legislators, but you may need to provide them with some extra help. It will be up to the user of this report to educate the public about economic impact studies in general and the results of this study in particular. The user may need to explain (1) the study methodology used; (2) that economists created an input-output model for each community and region in the study; and (3) the difference between input-output analysis and a multiplier. The good news is that as the number of economic impact studies completed by arts organizations and other special interest areas increases, so does the sophistication of community leaders whose influence these studies are meant to affect. Today, most decision makers want to know what methodology is being used and how and where the data were gathered.

You can be confident that the input-output analysis used in this study is a highly regarded model in the field of economics (the basis of two Nobel Prizes in economics). However, as in any professional field, there is disagreement about procedures, jargon, and the best way to determine results. Ask 12 artists to define art and you will get 24 answers; expect the same of economists. You may meet an economist who believes that these studies should be done differently (for example, a cost-benefit analysis of the arts).

HOW CAN A COMMUNITY NOT PARTICIPATING IN THE ARTS AND ECONOMIC PROSPERITY III STUDY APPLY THESE RESULTS?

Because of the variety of communities studied and the rigor with which the *Arts & Economic Prosperity III* study was conducted, nonprofit arts and culture organizations located in communities that were not part of the study can estimate their local economic impact. Estimates can be derived by using the *Arts & Economic Prosperity III* Calculator (found at www.AmericansForTheArts.org/EconomicImpact). Additionally, users will find sample PowerPoint presentations, press releases, Op-Ed, and other strategies for proper application of their estimated economic impact data.

In Appreciation

Americans for the Arts expresses its gratitude to the many people and organizations who made *Arts & Economic Prosperity III: The Economic Impact of Nonprofit Arts and Culture Organizations and Their Audiences in New Hampshire's Monadnock Region* possible and assisted in its coordination and production. Generous funding for this project was provided by Arts Alive!, which also served as the local project partner and as such was responsible for the local implementation and data collection requirements of the study.

Special thanks to the Paul G. Allen Family Foundation, the John D. and Catherine T. MacArthur Foundation, and The Ruth Lilly Fund of Americans for the Arts for their financial support of the national implementation of *Arts & Economic Prosperity III*.

THE MONADNOCK REGION'S PARTICIPATING NONPROFIT ARTS AND CULTURE ORGANIZATIONS

This study could not have been completed without the cooperation of the 24 nonprofit arts and culture organizations in the Monadnock Region, listed below, that provided detailed financial and event attendance information about their organization.

Apple Hill Center for Chamber Music; Chamber Singers of Keene; Cheshiremen Chorus (Keene Chapter of SPEBSQSA); Colonial Theatre; Giving Monadnock; Harris Center for Conservation Education; Historical Society Cheshire County; Jaffrey Civic Center; Journeys in Education (Mariposa Museum); Keene Chorale; Keene Community Music Center; Keene Public Library; MacDowell Colony; Monadnock Area Artists Association; Monadnock Art (Friends of the Dublin Arts Colony); Monadnock Music; Monadnock Summer Lyceum; Moving Company Dance Center (dba Moco Arts); Peterborough Players; Redfern Arts Center on Brickyard Pond; Sharon Arts Center; The Greater Keene Chamber of Commerce; The Park Theatre; and Thorne-Sagendorph Art Gallery.

THE MONADNOCK REGION'S PARTICIPATING NONPROFIT ARTS AND CULTURE PATRONS

Additionally, this study could not have been completed without the cooperation of the 1,629 arts and culture patrons who generously took the time to complete the audience-intercept survey while attending an arts and culture event in the Monadnock Region.

AMERICANS FOR THE ARTS' 156 ARTS & ECONOMIC PROSPERITY III NATIONAL STUDY PARTNER REGIONS

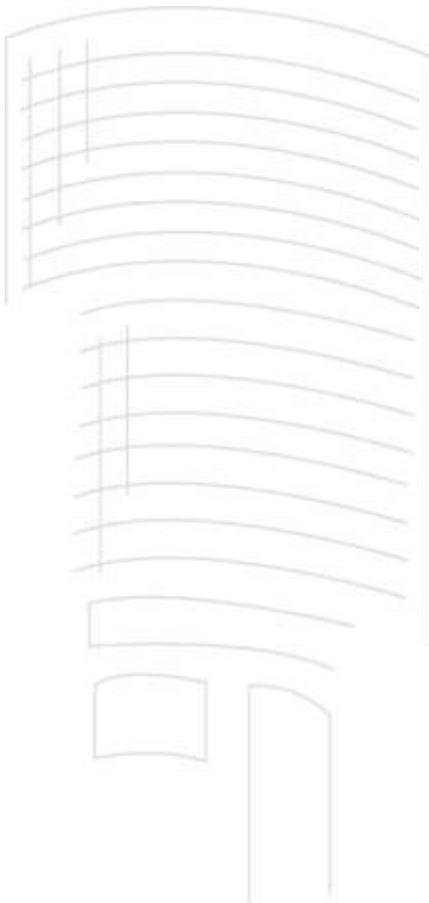
The following are the 156 communities and regions (116 cities and counties, 35 multi-county regions, and five states) that participated in the national study, representing all 50 states and the District of Columbia.

Jefferson County, AL; Greater Birmingham Region, AL; Anchorage, AK; Homer, AK; Chandler, AZ; Eastern Maricopa County, AZ; Mesa, AZ, Phoenix, AZ; Pima County, AZ, Tempe, AZ; Northwest Arkansas Region, AR; Fullerton, CA; Glendale, CA; Humboldt County, CA; Laguna Beach, CA; Pasadena, CA; Riverside County, CA; San Francisco, CA; Santa Barbara County, CA; Santa Clara County, CA; Santa Cruz County, CA; Sonoma County, CA; Walnut Creek, CA; Boulder, CO; Colorado Springs, CO; Fort Collins, CO; Gunnison County, CO; Loveland, CO; Greater Hartford, CT; Dover, DE; Wilmington, DE; the State of Delaware; Washington, DC; Greater Washington DC Metropolitan Region; Alachua County, FL; Bay County, FL; Broward County, FL; Central Florida Region; Miami, FL; Miami Beach, FL; Miami-Dade County, FL; Orange

County, FL; Orlando, FL; Palm Beach County, FL; Pinellas County, FL; Winter Park, FL; Atlanta, GA; Savannah, GA; the Island of Maui, HI; Boise, ID; Wood River Valley Region, ID; Champaign County, IL; Chicago, IL; Indianapolis, IN; Saint Joseph County, IN; Iowa Cultural Corridor Region; Salina, KS; Sedgwick County, KS; Louisville-Jefferson County, KY; Northwest Louisiana Region; Portland, ME; Baltimore, MD; Montgomery County, MD; Prince George's County, MD; Pittsfield, MA; Kalamazoo County, MI; Brainerd Lakes Region, MN; Central Minnesota; East Central Minnesota; Minneapolis, MN; Minnesota Arrowhead Region; Minnesota Lake Region; Minnesota Twin Cities' Metropolitan Region; North Central Minnesota; Northwest Minnesota; Saint Cloud, MN; Saint Paul, MN; South Central Minnesota; Southeast Minnesota; Southwest Minnesota; Washington and Chicago Counties, MN; the State of Minnesota; Lauderdale County, MS; Metropolitan Kansas City Region, MO/KS; Saint Louis City and County, MO; Missoula, MT; Lincoln, NE; Portsmouth Seacoast Area, NH/ME; Newark, NJ; New Brunswick, NJ; Doña Ana County, NM; Buncombe County, NC; Forsyth County, NC; Guildford County, NC; Mecklenburg County, NC; Wake County, NC; Fargo-Moorhead Region, ND/MN; Greater Minot Region, ND; the State of North Dakota; Clark County, NV; Greater Buffalo Region, NY; Monroe County, NY; Orange County, NY; Suffolk County, NY; Ulster County, NY; Westchester County, NY; Greater Columbus, OH; Greater Cincinnati Region, OH/KY/IN; Mansfield, OH; Tulsa, OK; Greater Portland Region, OR; Josephine County, OR; Allegheny County, PA; Bradford County, PA; Erie County, PA; Greater Harrisburg Region, PA; Greater Philadelphia Region, PA; Lackawanna County, PA; Lancaster, PA; Luzerne County, PA; Lehigh Valley Region, PA; Philadelphia County, PA; Somerset County, PA; the State of Pennsylvania; Providence, RI; Greater Columbia; SC; Black Hills Region, SD; Nashville-Davidson County, TN; Abilene, TX; Austin, TX; Houston, TX; Iron County, UT; Greater Burlington, VT; Windham County, VT; Alexandria, VA; Arlington County, VA; Fairfax, VA; Fairfax County, VA; Bainbridge Island, WA; Seattle, WA; Tacoma, WA; Whatcom County, WA; Wheeling, WV; Dane County, WI; Greater Milwaukee Region, WI; La Crosse, WI; Marathon County, WI; Milwaukee County, WI; Northeast Wisconsin Region, WI; Oshkosh, WI; Pierce County, WI; Polk County, WI; St. Croix County, WI; St. Croix Valley Region, WI; the State of Wisconsin; and Teton County, WY.

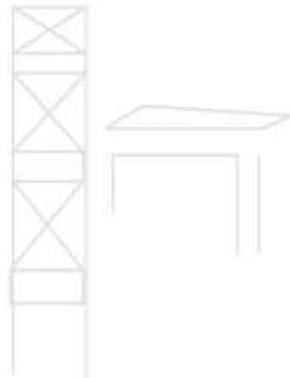
"There is no better indicator of the spiritual health of our city, its neighborhoods, and the larger region than the state of the arts. The arts deepen our understanding of the human spirit, extend our capacity to comprehend the lives of others, allow us to imagine a more just and humane world. Through their diversity of feeling, their variety of form, their multiplicity of inspiration, the arts make our culture richer and more reflective."

—Jonathan Fanton
President
MacArthur Foundation

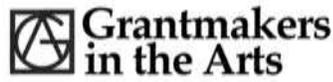


"As Chairman of the Oklahoma Chamber of Commerce, I visited almost every city and town in the state. There is a visible difference in places with an active cultural community. I see people looking for places to park, stores staying open late, and restaurants packed with customers. The business day is extended and the cash registers are ringing."

—Ken Ferguson
Chairman and CEO, NBanC
Past President, American Bankers Association

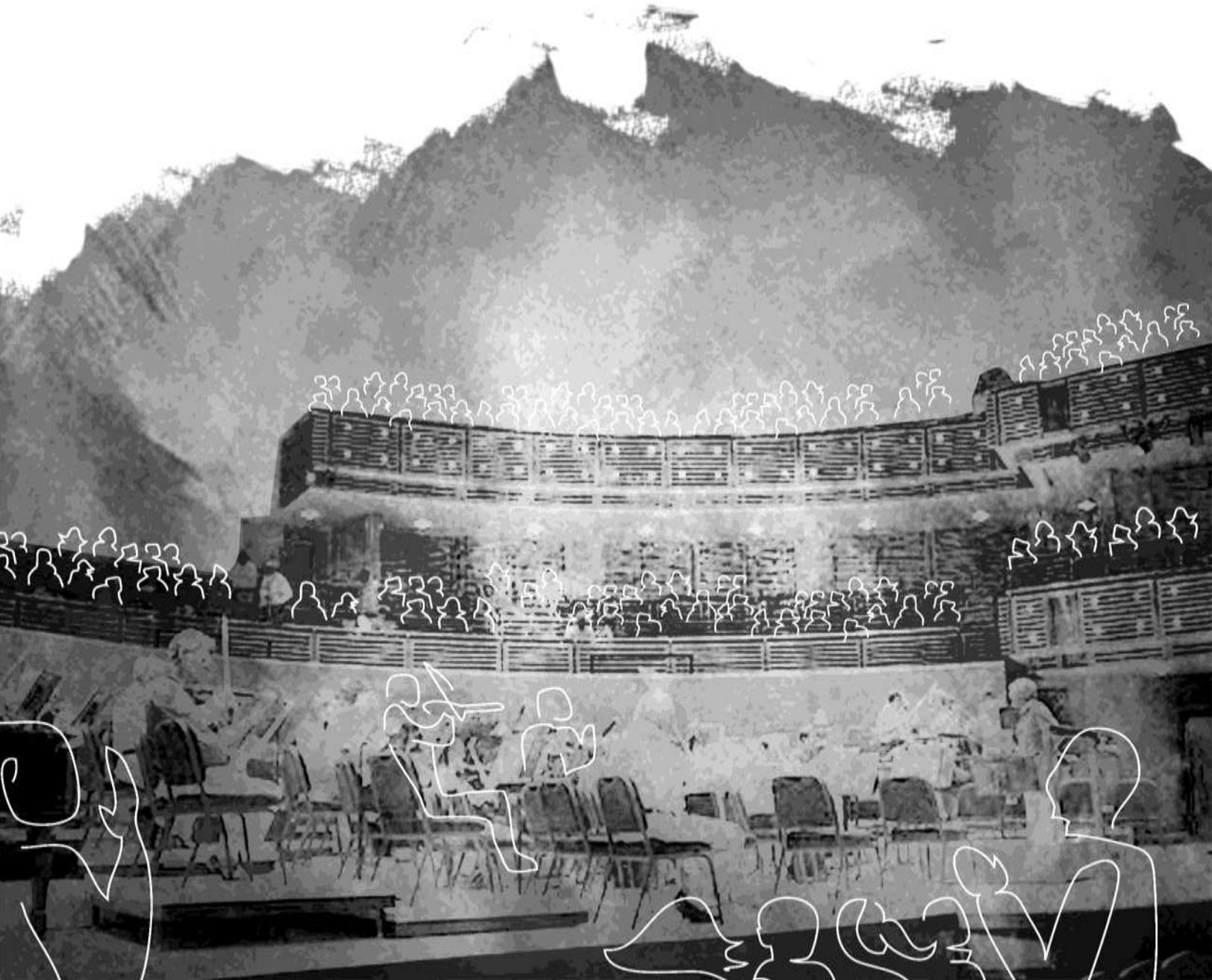


PARTNERS



**NATIONAL CONFERENCE
of STATE LEGISLATURES**

The Forum for America's Ideas



Art-Speak

CITY OF PORTSMOUTH CULTURAL COMMISSION

Mission

The mission of **Art-Speak** is to promote appreciation, awareness, participation and dialogue in the support of arts and culture. **Art-speak** performs these services for the citizens of the City of Portsmouth, its City Council and all artists and art/cultural-related organizations in the Seacoast Community. The agency exists officially on behalf of the City of Portsmouth, to represent and promote arts and culture, and to act on all related matters.



Funding

Art-Speak was formed as the City of Portsmouth's Cultural Commission in October 2002. As a quasi-public agency, **Art-Speak** has non-profit status allowing the commission to secure private grant funding to accomplish many of the city's arts and culture goals, as stated in the City's Master Plan. The city of Portsmouth provides office space and associated services as well as limited funding.



Staff

Art-Speak employs a part-time coordinator for 24 hours a week to manage the day-to-day activities of the organization. **Art-Speak** has an independent volunteer Board of Directors consisting of up to 18 individuals. The Board consists of business and arts and cultural professionals from the seacoast area.

Functions

The purpose of **Art-Speak** is to:

- Promote public appreciation, participate, dialogue and support for the invaluable contribution that arts, culture and history makes to our City's economic vitality and quality of life;
- Serve as an advisor to all departments of City government on arts and cultural issues;
- Perform a coordination function for local cultural organizations and advocate on their behalf at the local, state and national level;
- Market and promote Portsmouth as a cultural destination;
- Create new resources to support local artists and cultural organizations Prepare annually a state-of-the-city cultural report for the City Council;
- Implement and periodically update the cultural plan;
- Convene and annual forum for community dialogue related to arts and culture;
- Introduce new businesses to expectations of supporting the cultural community;
- Collaborate with regional and state arts and cultural organizations.



Significant Accomplishments



- **Art-Speak** provided staff support and artist advocacy for "Percent for Art Ordinance" requiring that one percent of construction costs for new and renovated municipal buildings be designated for public art (within certain cost limits); conducted a "Percent for Art Forum" for all stakeholders including artists, municipal workers and architects.
- **Art-Speak** secured funding from National Endowment for the Arts to conduct an Arts District Feasibility Study for the Islington Street Corridor. This study will be completed by spring of 2008.
- **Art-Speak**, in Partnership with Americans for the Arts, conducted the Arts & Economic Prosperity III Survey. This survey provides economic data to encourage business to support Arts; data also provides artist and organizations with concrete data to be used as leverage when approaching business and other sponsors for funding. Funding for this work was provided by New Hampshire Charitable Foundation and the Provident Bank Community Foundation.
- **Art-Speak** held Overnight Art Events in 2005 and 2008. Overnight Art is a public art competition resulting in a temporary public art exhibit in downtown Portsmouth viewed by 1000's of residents and visitors.

