Fiscal Cost Savings of Smart Growth (and Other Benefits)

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Fiscal Cost Savings of Smart Growth (and Other Benefits)

For the 2013 Massachusetts Smart Growth Conference

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Topics

- Housing demand and supply in MA and Greater Boston
- Fiscal cost savings of smart growth
  - Conceptual impacts
  - Estimates from around the country
- Framework for evaluating the triple bottom line impacts of smart growth – economic, environmental, social
- Case study from Goffstown, NH
- Challenges

Housing Supply "Shortages" in 2008 and 2020

2008 Housing Supply Shortage Estimates

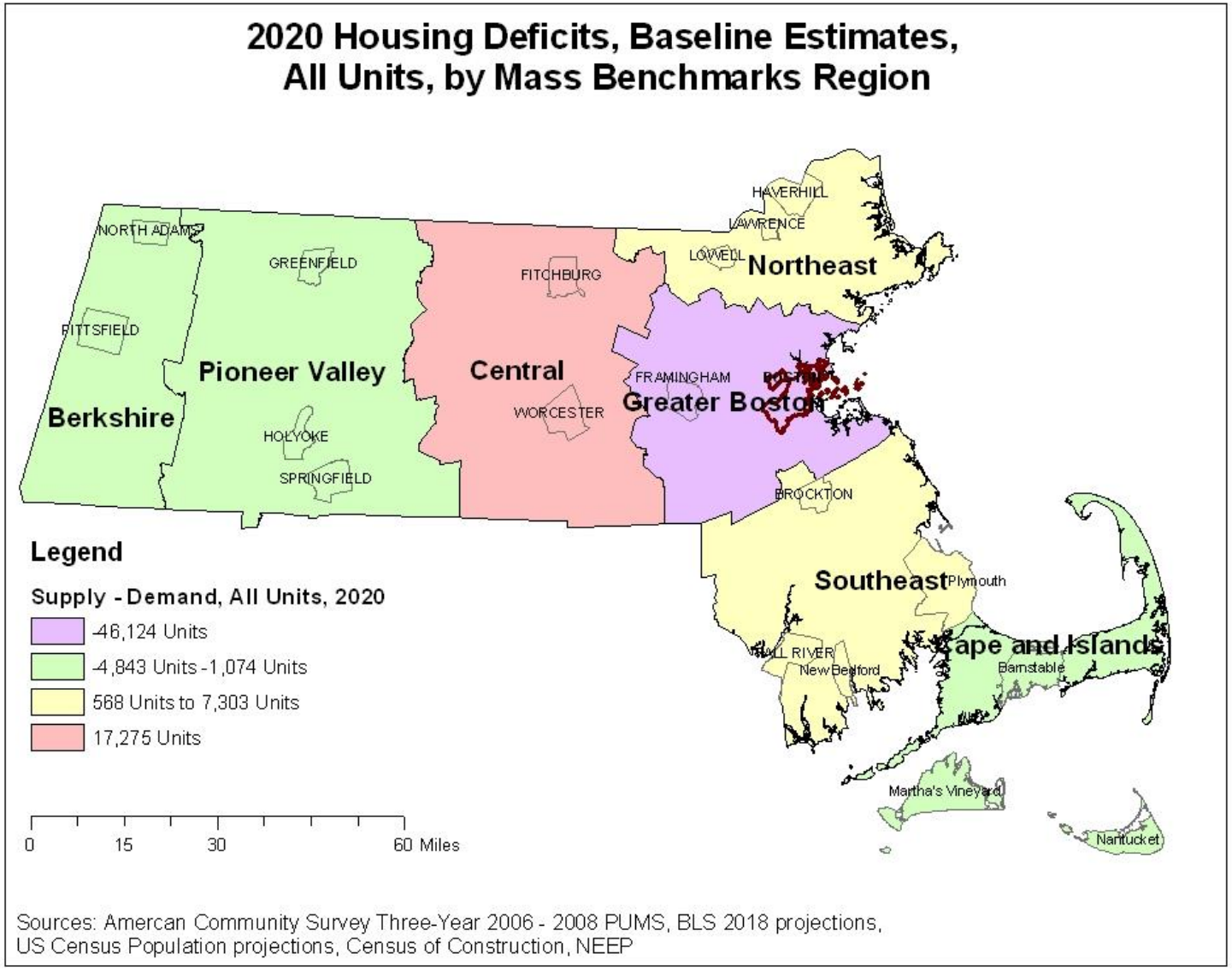
	Berkshire	Cape and Islands	Central	Boston Metro	Northeast	Pioneer Valley	Southeast	Total
Single-Family	96	796	-628	-4,077	-2,062	-1,853	-1,881	-9,610
Multi-Family	-1,187	43	838	-10,339	1,485	-1,183	-222	-10,565
Mobile	-27	-16	-0	73	-63	-69	162	59
Total	-1,118	823	210	-14,343	-641	-3,106	-1,942	-20,116

2020 Housing Supply Shortage Estimates

	Berkshire	Cape and Islands	Central	Greater Boston	Northeast	Pioneer Valley	Southeast	Total
Single-Family	-1,277	-17	18,220	-25,545	-3,889	6,757	12,202	6,452
Multi-Family	-2,007	-1,198	-309	-20,651	4,767	-10,396	-3,981	-33,775
Mobile	253	141	-636	72	-311	-1,205	-918	-2,603
Total	-3,031	-1,074	17,275	-46,124	568	-4,843	7,303	-29,926

Source: UMass Donahue Institute

Housing Supply Shortages by MA Region



2013 Greater Boston Housing Report Card

- Housing sales increasing in recent years (2011-2012):
  - 21 percent increase for single family
  - 25 percent increase for condominiums

- New housing permits increased over 50% in 2012, estimate of 40% increase in 2013

- “Seismic shift” from single-family to multifamily construction
  - 2/3 of permits for apartment/condos of 5 or more units
  - Led by Baby Boomers downsizing, young Millennials urban preferences

- Chapter 40R Smart Growth Overlay Zoning – incentives to municipalities to set aside land for development of denser, more affordable, transit-oriented housing

- Housing affordability (high rental costs) and housing cost burden (share of income to housing) remain a key issue

Fiscal (and Other) Benefits of Smart Growth

- Costs of Sprawl research studies date back to 1974, updated in late 1990s to find generally higher costs for sprawled development

- HUD-EPA-DOT Partnership for Sustainable Communities
  - More emphasis on regional planning to link housing, land use, transportation and examine implications of development patterns

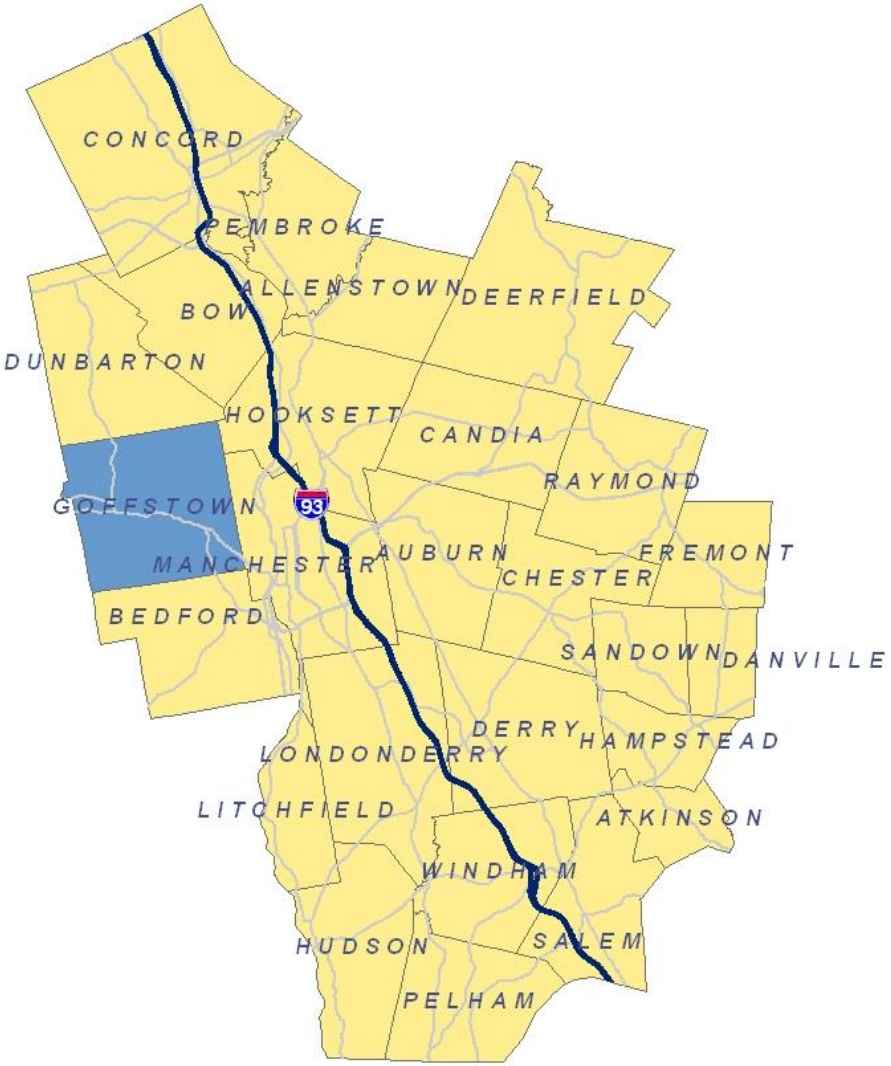
- Building Better Budgets – A National Examination of the Fiscal Benefits of Smart Growth Development (May 2013)
  - 38 percent less costs for upfront/ongoing infrastructure (roads, sewer, water, etc)
  - 10 percent cost savings on service delivery (police, ambulance, fire)
  - 10 times more tax revenue per acre
  - Cost savings estimated across 17 case studies in US (urban, rural, suburban)

- Fiscal Impacts – government expenditures and revenues (only)

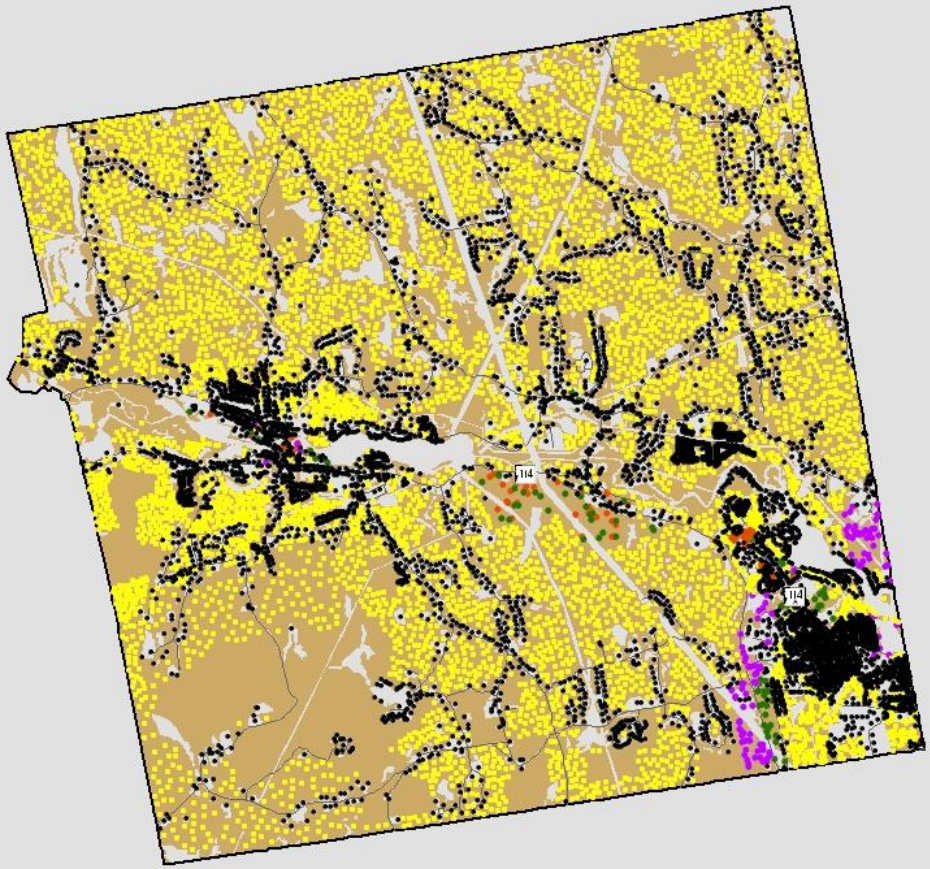
- Triple Bottom Line (or Benefit-Cost) includes environmental, economic, social effects (e.g., smart growth leads to less energy consumption)

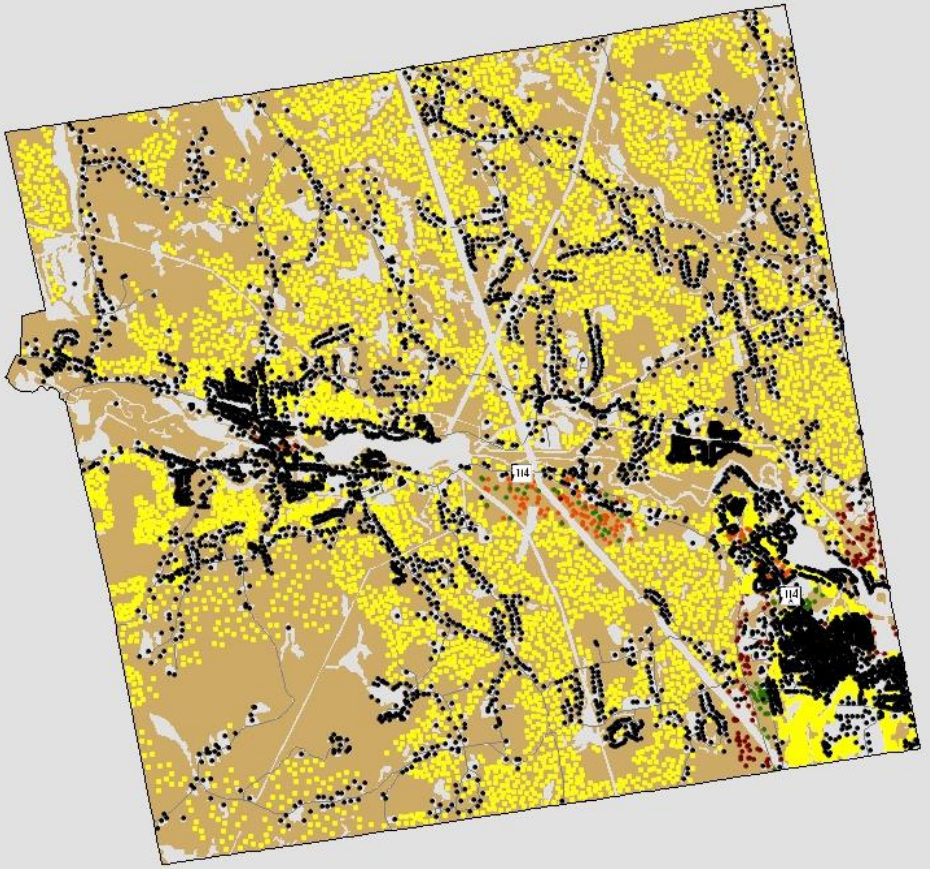
Build-Out Planning in Southern New Hampshire on I-93 Corridor

- Initiative to support communities in development planning for I-93 widening
- State, regional, local, non-profit partnership
- Promote beneficial growth patterns and development to minimize negative effects on community, open space, traffic, environment, etc.



Goffstown, NH – Base and Standard Build-Out Scenarios





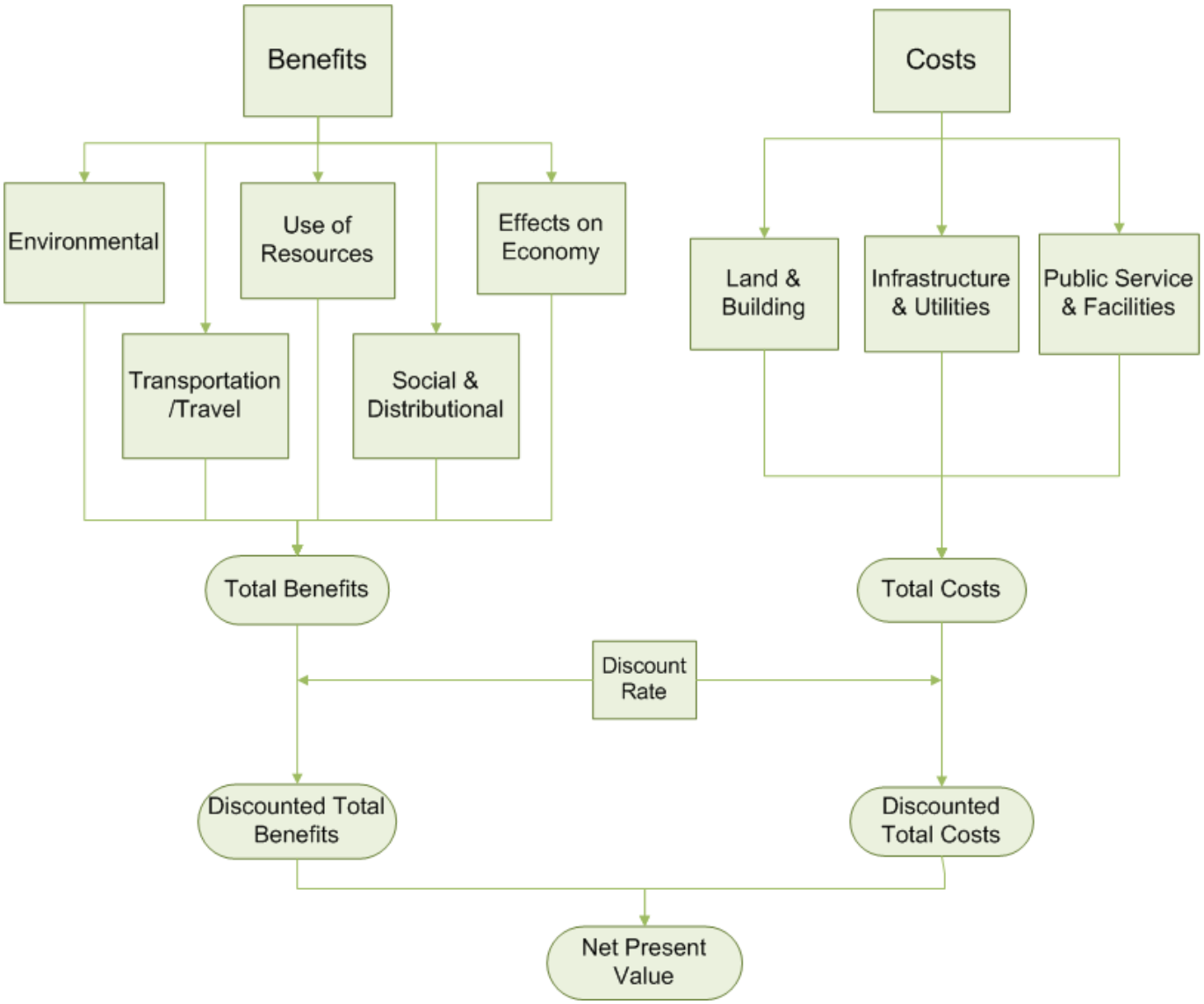
23 square miles of buildable land area in Base Buildout vs. 16.9 square miles in Standard Alternative

Indicators from SNHPC Analysis

Category	Indicator	Units	Current	Base Buildout	Percent Change	Standard Alternative Scenario	Percent Change	Town Scenario	Percent Change
Buildout	Developed Residential Acres	Acres	3,552	17,778	401%	14,739	315%	17,675	398%
	Developed Non-Residential Acres	Acres	1,246	1,589	28%	1,566	26%	1,621	30%
	Residential Dwelling Units	d.u.'s	5,705	12,487	119%	12,216	114%	12,281	115%
	Commercial Floor Area	sq. ft	3,480,786	5,480,440	57%	5,611,243	61%	5,770,272	66%
Demographics & Employment	Population	Persons	14,605	31,967	119%	31,273	114%	31,439	115%
	School Kids Population	School Kids	2,760	6,042	119%	5,911	114%	5,942	115%
	Labor Force Population	Workers	5,972	13,071	119%	12,788	114%	12,856	115%
	Commercial Jobs	Jobs	4,229	6,659	57%	6,818	61%	7,011	66%
	Jobs to Housing Ratio	Jobs/d.u.	0.74	0.53	-28%	0.56	-24%	0.57	-23%
Environmental & Open Space	Open Space Supply	Acres	18,894	4,315	-77%	7,387	-61%	4,396	-77%
	Impervious Surfaces	Percent	4.7	15.9	238%	13.6	189%	15.9	238%
Land Use Characteristics	Total Density	Persons/mi²	388	850	119%	832	114%	836	115%
	Residential Housing Density	d.u./Acre	1.61	0.7	-57%	0.83	-48%	0.69	-57%
	Residential Development Footprint	Acres/d.u.	0.62	1.42	129%	1.21	95%	1.44	132%
	Recreation Density	Ft²/person	590	267	-55%	275	-53%	274	-54%
	Housing Proximity to Recreation	Miles	0.71	0.87	23%	0.81	14%	0.79	11%
	Housing Proximity to Community Centers	Miles	1.1	1.4	27%	1.4	27%	1.3	18%
	Housing Proximity to Amenities	Miles	0.71	0.94	32%	0.91	28%	0.87	23%
	Walkability	Percent	23.33	13.69	-41%	13.7	-41%	14.93	-36%
	Housing Proximity to Transit	Miles	2.52	3.05	21%	2.84	13%	2.8	11%
	Employment Proximity to Transit	Miles	2.52	3.05	21%	2.84	13%	2.8	11%
Municipal Demands	Fire & Ambulance Service	Calls/Years	1,168	2,577	121%	2,502	114%	2,515	115%
	Police Service	Calls/Years	18,548	40,598	119%	39,717	114%	39,928	115%
	Solid Waste Demand	Annual Tons	7,887	17,262	119%	16,887	114%	16,977	115%
Water & Energy Use	Total Energy Use	mbtu/hh/yr	1,003,227	1,885,937	88%	1,776,024	77%	1,762,124	76%
	Residential Energy Use	mbtu/hh/yr	655,845	1,338,989	104%	1,206,022	84%	1,186,251	81%
	Commercial Energy Use	mbtu/hh/yr	347,382	546,948	57%	560,002	61%	575,873	66%
	Residential Water Use	mgals	699	910	30%	810	16%	803	15%
Transportation	Vehicles	Vehicles	10,497	22,976	119%	22,477	114%	22,597	115%
	Vehicle Trips per Day	Trips/Day	51,593	113,347	120%	107,440	108%	107,176	108%
	Annual CO Auto Emissions	Grams/Yr	7,771,094	17,113,453	120%	15,862,178	104%	15,733,048	102%
	Annual CO2 Auto Emissions	Tons/Yr	161	354	120%	328	104%	325	102%
	Annual NOx Auto Emissions	Grams/Yr	487,201	1,072,911	120%	994,464	104%	986,368	102%
	Annual Hydrocarbon Auto Emissions	Grams/Yr	981,574	2,161,616	120%	2,003,566	104%	1,987,256	102%

Source: Southern New Hampshire Planning Commission

Applying a Triple Bottom Line – Benefit/Cost Analysis Framework



Driving Factors for Cost Savings (and Benefits)

- Land devoted to residential, commercial, civic, green space uses
  - Directly impacts population and commercial/business activity
- Distance (sprawl) and density of use
  - Infrastructure to serve growth, average length of trips, transit ridership
- Single-family, multifamily, and mixed use development
  - Impacts energy consumption, spatial spread of growth
- Population
  - Many public expenditures roughly on a per capita basis
  - Ideal analysis holds population constant across scenarios to focus on cost implications of alternative development *patterns*

Residential Dwelling Units by Scenario

	Base Buildout		Standard Alternative		Community Alternative	
	New Dwelling Units	Share	New Dwelling Units	Share	New Dwelling Units	Share
Single Family	6,171	91%	5,360	82%	5,579	85%
Multi-family	304	4%	793	12%	775	12%
Mixed Use	307	5%	358	6%	222	3%
Total	**6,782**		**6,511**		**6,576**	

Source: Southern New Hampshire Planning Commission

Annual Impact Results of Standard and Community Scenarios (compared to Base)

Millions of 2008 $	Standard Alternative to Base	Community Scenario to Base
Cost Savings	**$9.4**	**$2.5**
Infrastructure & Utilities	$7.4	$0.9
Public Service & Facilities	$1.9	$1.6
Benefits	**$10.0**	**$2.8**
Environmental	$1.0	$0.4
Transportation	$6.4	$0.9
Energy Use	$2.5	$1.1
Effects on Economy	$0.2	$0.4
Cost Savings and Benefits	**$19.4**	**$5.3**

Source: HDR Decision Economics

Annual Impact Results of Standard and Community Scenarios (compared to Base)

Millions of 2008 $	Standard Alternative to Base	Community Scenario to Base
Cost Savings	**$7.3**	**$0.8**
Infrastructure & Utilities	$7.3	$0.8
Public Service & Facilities	$0.0	$0.0
Benefits	**$7.9**	**$1.2**
Environmental	$0.7	$0.1
Transportation	$6.0	$0.6
Energy Use	$1.1	$0.1
Effects on Economy	$0.2	$0.4
Cost Savings and Benefits	**$15.2**	**$2.0**

Source: HDR Decision Economics

Opportunities and Challenges

- Growing body of evidence, research and experience that “development patterns have a huge effect on the finances of a town or city”
  - Expectations remain high for public services but budgets are tight!
  - Academic/industry research on this topic is still relatively “young” (hesitations to draw conclusions) but with logical, intuitive rationale for cost savings
- Massachusetts policies providing various incentives to encourage compact development
  - Most case studies did not include assessment of “external” policies that could make smart growth development even more attractive
- Massachusetts has abundant cities/towns with strong transit/passenger rail service, traditional downtowns with potential for in-fill or new TOD
- Higher income, more single-family towns may have concerns about building multi-family
- Development planning scenarios should be based on *market realities*

For More Information:

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