CHAPTER 2

RESEARCH METHODOLOGY AND REGULATORY FRAMEWORKS

The central question of this evaluation is how effective state programs have been in achieving their commonly shared smart growth goals. The study also examines the manner in which states and local jurisdictions have configured their institutions, policies, and procedures to achieve these ends.

The following section describes the criteria for selecting the dimensions of state-sponsored smart growth programs for analysis, as well as the indicators used to measure performance. The next section introduces the eight case study states and examines the differences in their regulatory systems and defined goals. If a state intends to achieve specific smart growth goals, its regulatory system must explicitly identify and support those objectives. The presence of such provisions can therefore be treated as an *a priori* measure of effectiveness in that the states have laid the foundation for goal achievement. Chapters 3 through 7 examine these propositions empirically.

POLICY GOALS AND PERFORMANCE INDICATORS

State smart growth programs address a bundle of interrelated goals associated with the evolving physical—and consequently social—development of towns, cities, and regions. These goals are achieved largely by influencing both the sequence and pattern of land development and the placement of infrastructure (Downs 2005; Yin and Sun 2007). State and local efforts to regulate growth "smartly" therefore succeed to the degree that fiscal, regulatory, and other means shape development patterns in desired ways, and that these altered spatial outcomes help to achieve the broader goals associated with smart growth (Howell-Moroney 2007; Gale 1992).

This study focuses on five commonly shared goals of state smart growth programs.

1. Promote compact development.
2. Protect natural resources and environmental quality.
3. Provide and promote a variety of transportation options.
4. Supply affordable housing.
5. Create positive fiscal impacts.

The 52 performance indicators used to gauge the effectiveness of state smart growth programs in achieving these selected goals are listed in the appendix of this chapter. Three criteria were used for choosing these measures.

1. *Validity*. The linkage between a statewide planning policy intervention and the relevant indicator must be relatively strong and theoretically sound, and must affect the indicator in observable ways. In addition, anyone with knowledge of state and local land use planning must be able to easily understand the connection between the indicator and the policy goal, as well as the units of measurement.

2. *Availability*. The indicators must be quantifiable, and relevant secondary data must be available.

3. *Reliability*. To ensure comparability, data must be collected by a federal agency or by the states or other entities. In the latter case, the formats must be consistent across all states. If federal regulations or reporting requirements change, time series data may not be comparable; in these instances, adjustments to the data or caveats are noted.

The analysis also includes a survey of opinion leaders to provide additional perspective on the effectiveness of state smart growth programs versus local land management initiatives. Responses from 117 individuals addressed five key topics: effectiveness in achieving smart growth goals; public participation; costs of regulatory compliance; effectiveness of sanctions and incentives; and government role in guiding land development decisions.

REGULATORY SYSTEMS IN THE CASE STUDY STATES

Selection of the eight case study states was based on similarities in their population growth and differences in the stringency of their regulatory regimes. The states in the smart growth group—Florida, Maryland, New Jersey, and Oregon—had ambitious state-level smart growth programs in effect during the 1990s. Those in the other group—Colorado, Indiana, Texas, and Virginia—did not adopt such programs and thus provide a point of reference for comparison. In some instances the analysis looks at particular pairings of these states: Florida and Texas, Maryland and Virginia, New Jersey and Indiana, and Oregon and Colorado. However, the states in these pairs are very different in terms of land area, industrial base, level of economic development, political ideology, and local culture. Thus, the other states should not be treated as counterfactuals of the smart growth states.

The state regulatory systems were rated on their state-level consistency, goal-specific requirements, capacity to achieve smart growth goals, and the stringency of their local regulations, to come up with projections of which states might perform best in particular policy areas.

INTEGRITY OF STATE REGULATORY SYSTEMS

Land use–related laws, together with provisions for their administration, comprise a state's regulatory system. These systems provide the capacity both to regulate private action and to tax and spend in ways that encourage or discourage private action, or that empower government to amass revenues to be spent in ways that shape development patterns.

Public expenditures can profoundly shape land development through fiscal actions that, for example, preserve open space, protect environmentally sensitive places, encourage housing affordability, or—perhaps most importantly—build infrastructure. Indeed, the presence of critical infrastructure for transportation, water supply, waste management, and energy transmission can fundamentally alter the landscape of development opportunity.

Table 2.1 compares the current planning and regulatory regimes of the eight case study states. Given that smart growth programs represent a set of interdependent goals, the regulatory

framework developed to achieve those goals requires a high degree of coordination and integration between the state and its municipalities. The state stipulations for planning and coordination, rated in columns 3–7, have the following dimensions.

- *Local plan content* denotes the specificity, degree, and manner in which the state stipulates the extent of local plans.

- *Mandate to plan* defines the threshold for local planning. In Colorado, for example, all counties with populations over 100,000 must plan, but among counties with populations over 10,000, only those with growth rates above a prescribed threshold must do so.

- *Internal consistency* refers to the integration of local or regional land use plans, typically the conformance of zoning ordinances and the zoning map with the plan itself. In some states, the zoning map indicating future placements of infrastructure must be generally or specifically consonant with the plan (Burby and May 1997; Carruthers 2002; Gale 1992).

- *Vertical consistency* implies oversight of local and/or regional plans by higher-order governments. Such consistency can be achieved either by top-down prescriptions that provide the standard of sufficiency for local plans, or by adjusting regional or state plans to accommodate local plans.

- *Horizontal consistency* means that the content of local plans is coordinated with that of adjoining jurisdictions overseen by co-equal governments. This may also entail a broader requirement for regional coordination, in which the state defines regions and designates the coordinating agency (such as a regional planning council).

Columns 8–10 rate the recent activism of the state legislature and high court, and measure the degree of statewide tolerance for planning regulation.

In general, all eight states score as expected on these criteria. The four smart growth states scored high in their commitment to state-level planning (columns 1–2), while the other selected states did not. Although Oregon does not mandate local plans per se (column 3), the state does call upon localities to set urban growth boundaries (UGBs). This policy yields a "plan-like" outcome—hence Oregon's high score on this criterion. Moreover, all of the smart growth states include a land use element in their guidelines. Even so, the mandate for local planning (column 4) is as strong in Colorado and Virginia as it is in three of the four smart growth states.

SMART GROWTH GOAL-SPECIFIC REQUIREMENTS

Table 2.2 rates the capacity of each state's regulatory system to produce favorable outcomes in four smart growth goal areas.[1] These assessments reflect a thorough examination of local, regional, and statewide institutional practices rather than on-the-ground performance. In addition, the assessments do not anticipate how much actual conditions might accelerate or impede the favorable effects of regulatory and fiscal provisions.

To promote compact development (columns 1–2), states generally intervene in two distinct ways: limiting sprawl and encouraging urban infill. Provision of public transit is often regarded as a further boost to compact development. Explicit state legislative encouragement to secure compact development is moderate to high among the smart growth states, but essentially absent in the other selected states. Oregon stands apart in mandating urban growth boundaries throughout the state, although Maryland's designation of urban development areas achieves much the same result.

In terms of coordinating growth patterns with infrastructure capacity (columns 3–5), Florida receives high scores because of its concurrency requirement, even though this regulation has induced more sprawl rather than less. New Jersey ranks next in line, with Oregon third and Maryland last among the smart growth states. Among the other selected states, Indiana leads the list, with Colorado second, and Texas and Virginia trailing behind.

As for environmental protection (columns 6–8), Maryland and New Jersey score the highest while Florida, Oregon, and Colorado tie for second. Indiana, Texas, and Virginia lag well

Table 2.1 **State-level Land Use Planning and Regulatory Criteria, 2007**

	STATE-LEVEL SPATIAL PLANNING		STATE STIPULATIONS REGARDING SUBSTATE PLANNING					MUNICIPAL REGULATORY ACTION, 2005			UNWEIGHTED ROW TOTALS
			Local Plan Content	Mandate to Plan	Internal Consistency	Vertical Consistency	Horizontal Consistency				
	1 Strength of State Plan Guidelines	2 Presence of Land Use Element in State Plan Guidelines	3 Degree to Which State Specifies Local Plan Content	4 Threshold of State Mandate for Local Planning	5 Strength of State Requirement that Local Zoning Conform with Local Plans	6 Strength of State Requirement that Local Plans Be Consonant with State or Regional Plans	7 Strength of State Requirement that Local Plans Conform with Those of Neighboring Jurisdictions	8 Level of Recent Local Regulatory Involvement	9 Tolerance of Appellate Courts for Local Regulatory Action	10 Degree of Acceptance of Residential Regulatory Action	11
SMART GROWTH STATES											
Florida	3	3	3	3	3	3	3	2	2	2	27
Maryland	3	3	3	3	3	3	3	3	2	3	29
New Jersey	3	3	2	1	3	3	3	3	2	3	26
Oregon	3	3	3	3	3	3	3	2	2	2	27
OTHER SELECTED STATES											
Colorado	1	1	2	3	2	2	1	3	2	3	20
Indiana	1	1	2	1	2	1	1	1	3	1	14
Texas	1	1	1	1	1	1	1	2	2	2	13
Virginia	1	1	1	3	1	1	1	2	2	2	15

Notes: Because information about the state regulatory systems in the 1990s was difficult to compile, their 2007 systems are used as proxies to construct the *a priori* measures of effectiveness.
Scores in columns 1–7 were reported originally by the Institute for Business and Home Safety (2007) and updated to 2008. On this 3-point scale, "3" indicates the greatest degree of state-level activity or influence. For example, in columns 1–2, a rating of "1" means no state stipulation to plan at all or in a particular fashion, and "3" means such stipulations exist. In columns 3–7, "1" denotes no state involvement; "2" means a state prescription exists but is unenforceable; and "3" means there is an enforceable state provision.
Scores in columns 1–2 were derived from the IBHS assessment.
Scores in columns 8–10 are from Foster and Summers (2005). In column 8, a score of "1" indicates little recent regulatory activity; "3" indicates recent activity has been high. In column 9, "1" means the courts have been highly restrictive of municipal regulation; "3" means the courts have been highly supportive. In column 10, "1" indicates state legislature and appellate courts have been unwilling to tolerate local regulatory approaches that might advance smart growth practices; "3" indicates their willingness to tolerate such approaches.

Sources: Institute for Business and Home Safety (2007); Foster and Summers (2005).

behind. What sets the leaders apart in this goal area is the determination to protect both agricultural and sensitive lands, and the ongoing dedication of revenues for the purchase of development rights and outright acquisition of real property (in fee simple). Colorado is particularly effective in such funding, and is nearly alone in the awarding of marketable tax credits for development easements. Although it has no such program, Oregon is noteworthy for its regulations for preserving open space and setting urban growth boundaries.

Of all eight states, only New Jersey has strong provisions for expanding the supply of affordable housing (columns 9–10). A series of State Supreme Court decisions provided the impetus for a coordinated statewide approach to eliminating barriers to affordable housing production and proactively supplying residential units. Because such policies are inseparable from more general planning, these court cases provided a strong stimulus for more aggressive regional planning overall.

Table 2.2 **Intermediate Policy Outputs of State Policy/Planning Systems: *A Priori* Effectiveness of Regulatory and Fiscal Criteria, 2007**

	COMPACT DEVELOPMENT			COORDINATION OF GROWTH PATTERNS WITH INFRASTRUCTURE CAPACITY			ENVIRONMENTAL PROTECTION				AFFORDABLE HOUSING			UNWEIGHTED ROW TOTALS
	1 Degree to Which State Legislation Encourages Compact Development	2 Effectiveness of Urban Growth Boundaries (UGBs) or Urban Development Areas (UDAs)	Subtotal Columns 1–2	3 Strength of Concurrency or Adequate Public Facilities Requirement	4 Utility of State Provisions for Exactions, Dedications, and Impact Fees	5 Effectiveness of State Limits on Formation of Special Districts to Slow Sprawl	Subtotal Columns 3–5	6 Effectiveness of State Policies to Preserve Agricultural Land	7 Effectiveness of State Policies to Protect Sensitive Lands	8 Sufficiency of Dedicated Funding Streams to Preserve Open Space using Easements or Fee-Simple Purchases	Subtotal Columns 6–8	9 Strength of State Guidelines	10 Degree of Financial Support for Affordable Housing	Subtotal Columns 9–10	11
SMART GROWTH STATES															
Florida	2	1	**3**	3	3	3	**9**	1	3	3	**7**	2	2	**4**	23
Maryland	2	2	**4**	2	3	1	**6**	3	3	3	**9**	2	1	**3**	22
New Jersey	2	1	**3**	3	2	3	**8**	3	3	3	**9**	3	3	**6**	26
Oregon	3	3	**6**	2	2	3	**7**	3	3	1	**7**	2	1	**3**	23
OTHER SELECTED STATES															
Colorado	1	2	**3**	1	3	1	**5**	2	2	3	**7**	1	1	**2**	17
Indiana	1	1	**2**	1	2	3	**6**	1	2	1	**4**	1	1	**2**	14
Texas	1	1	**2**	1	2	1	**4**	1	2	1	**4**	1	1	**2**	12
Virginia	1	1	**2**	1	2	1	**4**	1	2	1	**4**	1	1	**2**	12

Notes: Each criterion is scored on a 3-point scale. A "3" denotes the greatest degree of state-level activity or influence; "1" denotes no state involvement. These assessments derive from an analysis of state statutes, with some regard for case law. The scores are inferred from the nature and degree of the *a priori* legislative intent, gauged in accord with generally held understanding of what approaches tend to be most effective. This appraisal, then, does not rely on actual empirical outcomes and is therefore "intermediate" as the title suggests.

It should be noted that the *a priori* output categories in table 2.2 involve complex tradeoffs, and some are problematic. For example, fostering compact development preserves peripheral open space, but increasing population and employment densities can also drive up the cost of land, which in turn can at times raise the cost of producing housing, including affordable units. Similarly, concurrency requirements may increase the spatial congruence between land development and infrastructure and other related capacities, but they may also encourage sprawl when that capacity is located in suburban and exurban areas. As a result, funding infrastructure and related public service capacities in urban regions is sometimes essential if the concurrency requirement is to foster higher density infill. When local preferences for low density development are strong, however, regulatory efforts to promote infill may on occasion meet resistance—yielding public dissatisfaction with the regulatory process itself.

CAPACITY TO ACHIEVE SMART GROWTH GOALS

Table 2.3 combines the results of the preceding analyses of state regulatory systems and goal-specific requirements to project the rating of states on their capacity to achieve specific goals. Each score is a composite index, standardized by dividing points

Table 2.3 **State-level Policy/Planning Inputs and Intermediate *A Priori* Outputs**

		STATUTORY LAND USE PLANNING INPUTS (From Table 2.1)			INTERMEDIATE POLICY OUTPUTS (From Table 2.2)				SUMMARY SCORES	
	Year Comprehensive Program First Established or Substantially Augmented	State-level Spatial Planning	State Stipulations Regarding Substate Planning	Degree of Acceptance of Municipal Regulatory Action, 2005	Compact Development	Coordination of Growth Patterns with Infrastructure Capacity	Environmental Protection	Affordable Housing	Unweighted Row Totals	Rank
SMART GROWTH STATES										
Florida	1974, 1985	100	100	67	50	100	78	67	562	4
Maryland	1992, 1997	100	100	89	67	67	100	50	573	2.5
New Jersey	1986, 1997	100	80	89	50	89	100	100	608	1
Oregon	1973	100	100	67	100	78	78	50	573	2.5
OTHER SELECTED STATES										
Colorado		33	67	89	50	56	78	33	406	5
Indiana		33	47	56	33	67	44	33	313	6
Texas		33	33	67	33	44	44	33	287	8
Virginia		33	47	67	33	44	44	33	301	7

Notes: Standardization is achieved by dividing the points assigned in each column by the total possible and multipling by 100. As a result, each column in this table is on an equal footing with all others, while expressly allowing for the fact that the degree of difference among states in individual columns does vary. Since each criterion in prior tables is scored on a 3-point scale, the maximum number of points achievable is 3 times the number of associated columns in those tables. The maximum score for each state on each criterion is 100.

assigned by total points possible and multiplying by 100. In this rating system, the higher the number, the greater the state's capacity to achieve a specific smart growth goal.

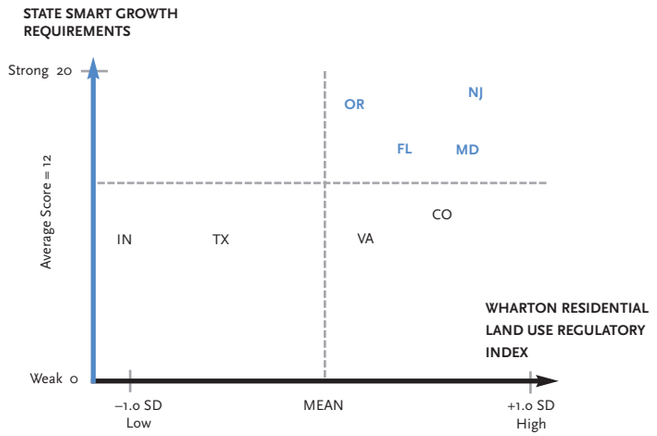
Among the smart growth states, New Jersey occupies the top rank in terms of having the regulatory capacity that would enable the state to meet its smart growth goals. Maryland and Oregon tie for second, and Florida is last. Among the other selected states, Colorado leads Indiana, Virginia, and Texas (in that order).

In terms of ability to achieve specific policy goals, Oregon has the highest score in compact development. Florida appears to be more capable of coordinating growth patterns with infrastructure development than the other states. Both Maryland and New Jersey are expected to perform well on environmental protection. New Jersey is most likely to attain the goal of providing affordable housing. These projections of state performance are tested and discussed in chapters 3 through 6.

STATE VERSUS LOCAL REGULATION

The analyses underlying the preceding tables all favor smart growth states in that they focus on state laws designed to achieve smart growth goals. But many municipalities within the states that do not have smart growth programs may act on their own initiative to pass land use regulations intended to achieve smart growth goals. Voluntary local action could arguably be as effective as the presence of statewide regulations. Having some measure of local regulation is therefore important when comparing measures of regulation (inputs) against performance (outputs).

Figure 2.1 **State versus Local Residential Regulation in the Eight Case Study States**



SD=Standard deviation.

Source: Gyourko, Saiz, and Summers (2006).

Figure 2.2 **Consistency and Effectiveness of State Planning Systems**

AGGREGATE CONSISTENCY (Internal, Vertical, and Horizontal)	LOCAL PLANNING EFFECTIVENESS: LOW (3)	MODERATE (4–5)	HIGH (6)
HIGH (9)	NJ	AR, MN, WA	DE, FL, MD, ME, NV, OR, PA, RI
MODERATE (6–8)	CT, MO	GA, HI, KY, MT, VT, WI	CA, SC, WY
LOW (3–5)	AL, IA, IN, KS, LA, MI, ND, NH, NM, NY, OH, OK, WV	CO, IL, MA, MS, NC, NE, TX	AK, AZ, ID, SD, TN, UT, VA

Sources: Institute for Business and Home Safety (2007); Foster and Summers (2005).

A recent survey by the Zell/Lurie Real Estate Center at the University of Pennsylvania's Wharton School provides a useful measure for this purpose. In this study, planning officials from communities across the country were asked to assess the degree of local regulation of residential land uses (Gyourko, Saiz, and Summers 2006). The summary score on the resulting Wharton Residential Land Use Regulatory Index is a measure of deviation from the mean for all states. A score of one represents one standard deviation above the mean. The higher the score is, the heavier the local regulation over residential development. Similarly, a minus score indicates lighter than average regulation.

Figure 2.1 graphs the aggregate scores from table 2.1 against the Wharton Index, providing a visual comparison of the relative intensity of state versus local regulations. Not surprisingly, all of the smart growth states score above average on the Wharton Index. Colorado, however, scores higher on this index than two of the smart growth states and tops the list of other selected states in terms of local regulation. As a result, Colorado should be a good state to look at when considering the performance of regulatory systems.

NATIONWIDE COMPARISON OF STATE PLANNING STRUCTURES

Figure 2.2 sorts all 50 states according to their planning characteristics and capacities. Aggregate consistency, shown in the rows, is the sum of scores for internal, vertical, and horizontal consistency. Each state is assigned a score from one to three for each consistency dimension. Numeric intervals in each row are low (3–5), moderate (6–8), and high (9).

The numeric values for local planning effectiveness, shown in the columns, are low (3), moderate (4–5), and high (6). This dimension is based on the sum of two scores: first, the presence or absence of a state mandate for local plans; and second, whether formal adoption of the local plan is required.

The four smart growth states score uniformly high on aggregate consistency. Three of the four—Florida, Maryland, and Oregon—also receive high scores on local planning effective-

ness. New Jersey is the exception. While that state subsequently strengthened the mandate to plan, it nevertheless remains in the lowest class of local effectiveness. Meanwhile, the other selected states have uniformly low scores on aggregate consistency, but show considerable variation on local planning effectiveness. Virginia is the only one of the four to score high on this criterion.

LIMITATIONS OF DATA AND METHODOLOGY

The original objective of this evaluation was to compare the performance of states with and without smart growth programs in the 1980s (before the programs were enacted) and in the 1990s (after they were in effect). The four smart growth states initiated their programs in different decades, however. For example, Florida and Oregon launched their smart growth programs in the mid-1970s. As a result, the 1990s outcomes for these two states differ little from 1980s outcomes because their land use regulations were in place during both decades. In sharp contrast, Maryland did not enact its comprehensive smart growth plan until 1997.

In addition, some parts of the analysis focus on different time periods because of data constraints. Chapter 7, for instance, bases its fiscal impact analysis on U.S. Census of Governments data for the years 1982 to 2002. The period for the opinion leaders survey described in chapter 8 is from 2000 to the present.

While considerable effort was made to standardize the data and to control for factors other than smart growth policies that might affect outcomes, full comparability cannot be assured for several reasons.

1. The sample states are neither randomly selected nor are they grouped in statistically matched pairs.

2. Although the data sources are the most authoritative available, their statistical methods, coverage, practices, and definitions sometimes differ. In some instances, estimates indicate trends and characterize major differences in policy effectiveness among the case study states, rather than provide precise quantitative measures of those differences.

3. While most economic and demographic data are drawn from regular administrative files, some are from special surveys or periodic census inquiries. For census data, figures for intermediate years have to be interpolated or estimated from the base reference statistics. These estimates are derived from models based on assumptions about prevailing trends and conditions.

4. These analyses can neither control perfectly for the enactment of key public policies, nor discern with precision the baseline trends that would have existed in each goal area if those policies had not been in place.

Readers should keep these limitations in mind when comparing the results for the smart growth states and those for the other selected states. Regardless, the analyses offered in this book provide the most comprehensive investigation into the impacts of state smart growth programs undertaken to date. One of our recommendations based on this evaluation is to improve the measurement and collection of data for assessing the performance of smart growth policies, particularly those related to environmental quality and public finance (see chapter 9).

Note

1. This approach is subject to two types of error. In the first instance, reasonable state regulatory systems may appear to fall short when the challenge is great and measurable progress is slow. In the second instance, favorable trend lines may appear to follow the onset of various interventions, but may not necessarily be attributable to them.

APPENDIX 2
SMART GROWTH POLICY GOALS, INDICATORS, AND DATA SOURCES

Policy Goals and Indicators	Data Sources
PROMOTE COMPACT DEVELOPMENT	
Size and Growth	
Changes in employment and population densities	U.S. Census Bureau (1990b; 1996; 2000b; 2006b)
Land Use	
Change in land use shares	U.S. Department of Agriculture (2000)
Land use by category	Same as above
Developed land per capita	Same as above
Marginal developed land per capita	Same as above
Concentration	
Spatial Gini coefficient for population distribution	U.S. Census Bureau (1990b; 2000b); GeoLytics (2002)
Spatial Gini coefficient for employment distribution	U.S. Census Bureau (1996; 2006b)
Gini coefficients for population distribution for every metropolitan area with more than one million residents	U.S. Census Bureau (1990b; 2000b); GeoLytics (2002)
Gini coefficients for employment distribution for every metropolitan area with more than one million residents	U.S. Census Bureau (1996; 2006b)
Urbanization	
Shares and densities of urban land	U.S. Census Bureau (1990b; 2000b); GeoLytics (2002)
Percent of population growth in urban, new urban, and rural areas	Same as above
Percent change in densities in urban, new urban, and rural areas of major metropolitan areas	Same as above
Centralization	
Distribution of metropolitan area population in concentric rings	U.S. Census Bureau (1996; 2006b)
Change in metropolitan area population density in concentric rings	Same as above
Distribution of metropolitan area employment in concentric rings	Same as above
Change in metropolitan area employment density in concentric rings	Same as above

Policy Goals and Indicators	Data Sources
PROTECT NATURAL RESOURCES AND ENVIRONMENTAL QUALITY	
Change in acres of resource land	U.S. Department of Agriculture (2000)
Change in resource land per additional person	Same as above
Change in farmland per additional person	U.S. Department of Agriculture (1987b; 2002)
Change in farmland enrolled in conservation programs	Same as above
Change in acres held in private land trusts	Land Trust Alliance (n.d.; 2005)
Change in state parkland	National Association of State Park Directors (n.d.)
PROVIDE AND PROMOTE A VARIETY OF TRANSPORTATION OPTIONS	
Modal Mix	
Share of commute trips by public transportation	U.S. Census Bureau (1990e; 2000f)
Share of commute trips by bicycling and walking	Same as above
Trip Time and Distance	
Change in mean annual delay per peak-period traveler in large cities	Texas Transportation Institute (n.d.)
Change in population density and effect on automobile congestion	Same as above
Change in annual per capita public transit trips	Same as above
Change in daily per capita vehicle miles traveled	Same as above
SUPPLY AFFORDABLE HOUSING	
Affordability	
Median housing values and percent of change	U.S. Census Bureau (1990a; 2000a)
Median gross rent as a percent of household income	Same as above
Median selected monthly owner costs as a percent of household income	Same as above
Shares of cost-burdened households (paying at least 30 percent of income on housing)	Same as above
Housing Mix	
Percent of new rental housing in the total of added housing units	U.S. Census Bureau (2003)
Percent of multi-family units in the total of added housing units	Same as above

Policy Goals and Indicators	Data Sources
CREATE POSITIVE FISCAL IMPACTS	
Population growth by county type	U.S. Census Bureau (1980; 1990c; 2000c)
Population density change by county type	Same as above
Household growth by county type	Woods and Poole Economics, Inc. (2005)
Employment growth by county type	Same as above
Personal income growth by county type	Same as above
Retail sales growth by county type	Same as above
Tax base growth by county type	Same as above
Housing value growth by county type	Same as above
Multifamily unit growth by county type	U.S. Census Bureau (1980; 1990c; 2000c)
Journey-to-work time change by county type	Same as above
Aggregate expenditure change by county type	U.S. Census Bureau (1982b; 1992; 2002b)
Per capita expenditure change by county type	Same as above
Aggregate revenue change by county type	Same as above
Per capita revenue change by county type	Same as above
Ratio between aggregate revenue change and aggregate expenditure change	U.S. Census Bureau (1992; 2002b)
Ratio between per capita revenue change and per capita expenditure change	Same as above
Change in aggregate property tax, tax base, and tax rate in urban/suburban counties	Same as above
Change in per capita property tax, tax base, and tax rate in urban/suburban counties	Same as above

PART II.
EVALUATION