# TRACKING GROWTH AND CHANGE IN NEW JERSEY

## A FRAMEWORK FOR A GROWTH MANAGEMENT INFORMATION PROGRAM

## FOR THE NEW JERSEY STATE DEVELOPMENT

## AND REDEVELOPMENT PLAN

Submitted to the New Jersey State Planning Commission

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## Introduction

In August, 1988, the State Planning Commission of New Jersey requested the Urban Land Institute to recommend a framework for a monitoring and assessment system that- would provide a continuous flow of information on the effects and effectiveness of the proposed state plan. The State Planning Commission recognizes that the plan will be implemented within a context of continuous change—in internal as well as external conditions. In such circumstances, the Commission must be prepared to identify changes, measure them against the plan's objectives and policies, and make appropriate adjustments to the plan. Given that the growth management policies in the plan represent an effort to balance competing, dynamic forces (such as those encouraging economic development vs. protection of environmental resources), a tracking and response mechanism becomes a critical component of a truly proactive plan.

The Urban Land Institute accepted this assignment as part of its continuing interest in determining and disseminating workable solutions to current problems and issues, both in the development industry and in the realm of public policy. Across the nation, the effects of growth management policies and the role of state governments in growth management have become major issues in the land use and development community. "Slow-growth" and "no-growth" measures are disrupting development processes in numerous communities, raising exclusionary and economic concerns. Some states are responding to these concerns and to infrastructure and environmental issues by asserting a greater role in determining the course of development in individual communities.

The New Jersey effort, in this regard, is notably more ambitious and more action-oriented than other states' initiatives. The principal function of the New Jersey state plan is to set goals and objectives for the state's development and to establish development policies to accomplish these goals. The state plan lays down broad policy guidelines for development throughout the state, and encourages local governments', plans to be consistent with these guidelines. In this respect, the plan is similar to planning programs such as Florida's and Oregon's. The New Jersey plan goes considerably farther than those states', however, by establishing measurable criteria and mapped locations to guide future land use—in effect, laying out a vast, though general, comprehensive land use plan for the state. The plan's basic strategy is to accommodate expected growth in each county and

municipality but to guide it towards existing urban settlements where infrastructure systems are already in place or can be efficiently provided, and through that clustering of development preserve valuable agricultural land and environmentally-sensitive land.

In other words, while the Florida and Oregon plans focus on assisting growth management in individual communities, the New Jersey plan attempts to guide and coordinate growth management actions within and among all the communities of the state, as well as state agencies.

Given New Jersey's size and geography, it is apparent that urban growth taking place in many parts of the state is interrelated and directly affects the coastal, environmental, and agricultural resources of the state. Unlike Florida and Oregon, New Jersey communities form an urban network that affects most of the state.[i] This may justify a more "hands-on" approach by the state in directing urban growth policy.

As the plan has taken shape, however, it has become increasingly clear that the plan's objectives and policies rest on numerous judgments and assumptions concerning the interplay of many economic, environmental, social, Intergovernmental, and fiscal trends and conditions. In the field of community development, such judgments and assumptions by necessity are based on a fragile foundation of empirical data. The facts required to

establish cause-and-effect relationships among components of community growth and change are often difficult to obtain and tainted by external influences. Analyses of such relationships, therefore, are rarely conclusive. And perhaps most important, it is an absolute that conditions both internal and external to .the state will change over time.

Elevated to application at the state level, planning premises become even less firmly grounded in fact and more allied to theories and hypotheses. To what degree, for example, will clustering future development in and around existing settlements • affect quality of life, infrastructure, public revenues, and other factors? At what level of growth controls will industries and consumers decide that locations in other states are preferable to those in New Jersey? What densities are most appropriate—and acceptable to consumers—to encourage greater i use of transit systems? with today's state of the art, questions like these can be answered only in general, highly-qualified terms.

Recognizing this essential problem, the State Planning Commission set out to forge a plan based on the best available knowledge, employing some of the foremost experts in such matters, and then to establish a management mechanism that will allow the Commission to adjust, fine-tune, and alter the plan to meet actual conditions as they evolve. In this sense, the Commission is behaving no differently than any major private business, which

plans its future corporate ventures with infirm data and cloudy •breadlines, and expects to redirect its course as new data becomes available.

This plan and process stand in sharp contrast to the present course, by which growth problems are subject to crisis management and piecemeal solutions. In New Jersey, as in most states, key transportation decisions are often determined without reference to other developmental issues such as water supply. Municipalities control growth for their own benefit rather than statewide objectives. In a state like New Jersey, pressed to find solutions to many urban and environmental problems within a relatively small geographic area, some type of state action seems warranted.

## The Study Approach

As indicated previously, New Jersey's approach to state planning is unique, and so is this proposal for a state growth management information program. For many years, impact assessments have been required of many proposed development projects, growing out of federal and state requirements for environmental impact evaluations. These assessments, however, have been directed at single projects or groups of projects relatively limited in time and space. To our knowledge, no state has attempted to assess the potential or actual impacts of development across the state, comprehensively. This proposal, then, represents a state-of-the-

art venture — a package of suggestions for developing an ongoing program for monitoring future urban and rural conditions and their performance relative to state plan objectives. Accordingly, it should be received as a set of ideas for establishing such a system, subject to further thought and experimentation, and subject also to major revision over time.

The proposal suggests a framework for a monitoring program and sketches the contents of that framework. Within the time available — less than two months — we have surveyed the literature, interviewed experts in a number of fields, constructed what we believe is a workable approach, and identified specific indicators of change in key components of growth, and described in preliminary fashion the major actions required to implement a monitoring program. As we agreed in our earliest discussions with the Commission, this framework represents a first-phase effort, which should lead to a second phase of work in which the proposal can be further detailed, refined, and tested. A summary approach to that second phase is incorporated in this report.

## Potential Effects of the State Plan

It has been suggested that prior to adoption of the state plan it should be evaluated for its potential effects on economic, environmental, fiscal, and other conditions in New Jersey. Such an evaluation would be desirable If it could be accomplished within the means and time available. As the later discussion of

a monitoring system will indicate, however, a rigorous evaluation of the effects of the plan would require a vast array of data, much of which is currently unavailable, and a host of premises, assumptions, and caveats which probably would cloud conclusions to the point of complete obscurity. After a review of the literature on impact analyses and discussions with experts around the nation, it is clear that, as a practical matter, a comprehensive evaluation would demand a state of the art that has not matured as yet.

Of course hundreds, even thousands of environmental impact analyses have been carried out for proposed development projects since the passage of the National Environmental Policy Act in 1969. Those analyses have often included evaluations of economic, fiscal, and other factors in addition to specific environmental elements. To reach conclusions about the probable pros and cons of specific projects, dozens of variable factors must be measured, weighed, and balanced. Although the techniques and skills used in such analyses have improved tremendously over the years—often incorporating sophisticated computerized models, for example—the practitioners that prepare those studies would be the first to admit that their conclusions often rest on inadequate data and incomplete formulations of cause-and-effect equations. Even for individual projects, therefore, evaluations of probable effects are not absolutely conclusive.

Those impact analyses, moreover, are carried out for projects limited in scope and space, unlike the state plan that contemplates growth and change over a large geographic area, incorporating many types of land use activities, and subject to significant externalities at the state, national, and even international levels. An evaluation of the state plan's effects, then, must consider a much larger array of variable factors over a much greater area and longer time frame than posed by a typical individual development project.

It is not surprising, then, that there is little experience with statewide plan impact analyses. In fact, a review of the extant literature on land use impact analyses turned up many reports and guidebooks describing techniques and measures for environmental, fiscal, and other impact analyses for individual projects, including the landmark series of volumes on impact analysis methods published by the Urban Institute in 1974-1976, and individual studies of such subjects as effects of growth management on housing prices. But no treatise on statewide impact analysis of a proposed plan appears to be available.

Any study of the plan's potential effects on New Jersey's growth and change also must reckon with the degree that the plan will actually impact development. It is axiomatic that urban development and redevelopment is an engine with considerable driving power and built-in inertia, propelled by strong economic and social forces. Although regulatory actions can guide growth

and change, they cannot be expected to cause radical alterations in the course of events, especially in the near term. Studies to define the fraction of development affected by the state plan, therefore, will leave aside more profound changes that can be ascribed to other causes.

An objective and credible examination of the potential effects of the state plan on growth and change in New Jersey would require projections into the future of the most likely results of planned restrictions and incentives affecting land use, infrastructure, tax policies, housing policies, and many other components of urban and rural development. The projections would have to be based on extensive data describing current conditions of a wide variety of growth components, such as current excess capacities of water supply systems, highways, and other infrastructure, and labor characteristics of industries by type of industry. Intensive analyses of cause-and-effect relationships among growth components would also be necessary, to establish the degree to which transportation improvements, for example, would influence industrial site locations, or the effects of restrictions on amounts of developable land on housing affordability. The projections would also have to take into account changing external conditions such as interest rates, national economic cycles, regulatory actions by bordering states, new federal legislative requirements, and population migration patterns.

To take just one aspect of growth as an example, consider the potential effect of the state plan on the location of manufacturing plants. Some industries moving to New Jersey have sought locations in rural areas where they hoped to find inexpensive land and low-priced labor drawn from an underemployed rural population. The state plan proposes to cluster development around existing settlements in rural areas, thus reducing choices of sites for new development and potentially raising land costs. what are the potential effects (and implementation requirements) of such a policy?

Industries desiring to expand or start up in rural areas would have several options under the plan:

* Firms could hope to find an existing vacant or underutilized plant in a rural settlement, thereby accomplishing its objectives but possibly increasing the existing level of activity (in terms of population, incomes, infrastructure needs, etc.) in the area.

* Lacking that possibility, industries might search for sites in or adjoining an existing settlement, where they would probably be required to pay higher prices for sites. If accomplished, this action would support the plan's objectives to concentrate development but at a cost to the individual industry. Furthermore, the industry might utilize existing excess capacity in infrastructure systems in such locations but might necessitate

capacity additions, depending on the specific conditions in the area.

* A third possibility is that industries would attempt to avoid higher costs by relocating to another nearby state, thereby depriving New Jersey of an employment and income generator. It is also possible that industries, after considering locations in other states, would determine that the quality of life created by clustering development and preserving open space is worth paying the somewhat higher price for land.

How would an impact analysis anticipate the probable decision of the industry? The analysis would need to consider such factors as the existing constellations of similar industries that might attract or detract from locational attributes of various potential sites, the importance of site and labor costs to such industries, the labor pools available at various income and skill levels in each area of the state, the probable effects of the plan on industry site prices, the availability of affordable housing for the industry's workers, and infrastructure conditions and capacities in potential site areas, to suggest a few factors. To assess the plan's effects on such a decision, the specific incentives that would encourage location in settled areas must be known and reckoned with, will special financial assistance be available, sufficient to make up some of cost differentials between sites? If infrastructure improvements will be necessary, what programs will assure that such improvements will be made?

Are tax incentives available? Can the plan assure a quality of life that will satisfy industrial employees?

Many other questions could be posed concerning the factors that would influence an industry's locational decision. The point is that a conclusion on this one type of economic behavior—which hypothesizes a fairly crucial modification of present-behavior—requires a great many bits of data and several Important judgments about the likelihood of a decision one way or the other. In the end, even with the use of computer models, such a projected conclusion would depend on a subjective balancing of many variables, each with an error factor. Multiply that process by several hundred others, each of which would probably affect the others to some degree, and the problem of determining the effects of an action such as a state plan becomes evident.

## An Alternative Approach to ^ear-Term Evaluations

Recognizing that a full-scale impact analysis would be costly, time-consuming, and possibly inconclusive, we believe that it is still worthwhile to study the plan's potential effects on several especially Important conditions. In addition to the longer-range growth management monitoring program described below, it is recommended that the State Planning Commission and/or other appropriate state agencies undertake plan impact analyses of selected critical factors during the cross-acceptance phase.

Such an evaluation would be most feasible if carried out according to the following guidelines:

1. The evaluation of the plan's impact on selected growth factors should determine potential impacts for the entire state and for each tier. It is unlikely that findings can be easily derived for specific municipalities at this- stage of data availability and manipulation.

2. The evaluation should use currently available data, recognizing the limitations of the analysis that may result. Attempts to derive new data within the short time frame would probably prove unsuccessful. (It is assumed that available data would include the commission's definition of target populations and employment and determinations of developable land in each tier).

3. Computer models already exist to carry out some types of evaluations. Proprietary models such as those available from Chase Econometrics and other private firms should be investigated for possible use, thus reducing time requirements and producing results within the necessary time frame.

4. As with all such assessments, the conclusions of the studies should be treated as guides and estimates of probable results rather than absolute truth. The studies

should include appropriate descriptions of assumptions and premises incorporated in the evaluations, as well as caveats on the probability ratings of conclusions.

The following list suggests, as a preliminary judgment, some critical factors that might be assessed during cross-acceptance, the conclusions of which could be valuable in shaping the final content of the state plan:

1. Effects of the plan on housing prices in high-growth tiers, to ascertain that the :plan allocates sufficient developable land and anticipates adequate infrastructure investments to accommodate expected growth without forcing price increases.

2. Effects of the plan on selected infrastructure systems, such as roads and water systems* in high-growth areas, including probable costs for expanding such systems to meet growth needs.

3. Effects on selected environmental qualities, such as groundwater quality, in low-growth areas, to determine the likelihood of significant benefits from the plan's proposed development restrictions in these areas.

4. Effects on existing constellations of businesses in terms of their agglomeration economies, especially in high-growth areas.

The selection of these or other appropriate factors for study during the cross-acceptance period should depend" on the importance of such factors in the future development of the state and the availability of credible data and evaluation methodologies .

Looking Forward: Basic Approaches to Growth Management Monitoring

A growth management monitoring program for New Jersey can be structured in a number of ways, depending on the objectives to be served and the time/money constraints likely to face any long-range planning effort.

Objectives

The monitoring program should be framed to accomplish three principal ends :

1. To determine whether development conditions and trends are evolving towards or away from state plan goals and objectives, in the state as a whole and within each region, county, and municipality. The program should determine whether development is being guided towards existing

settlements and whether it is meeting the standards set forth in the plan.

2. To provide enough' information about development conditions and trends to enable state officials to evaluate alternative approaches and trade-offs that may be necessary to achieve state goals.

3. To provide individual state agencies and local municipalities with information concerning development trends that may be factored into their decisions on annual " budgets, growth management programs, and capital improvements programs. ,

To these general goals should be added some operational principles that further describe a basic monitoring program:

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1. Use of the existing data base as fully as possible, which will require, in many cases, assembling and coordinating data sources not previously identified or effectively employed. The monitoring program should examine proprietary data sources and targeted sampling techniques in addition to traditional sources such as the U.S. Census and state and local periodic reports.

2. To provide a complete data base, the monitoring program should embrace all the sections of the state currently

omitted from the state plan: the Hackensack Meadowlands area, the Pinelands, and the CAFRA coastal strip. Conditions in these areas must be monitored to understand conditions in the adjacent areas and the entire state.

3. To structure a monitoring program that will allow, even encourage procedures to weigh and reconcile competing or conflicting objectives in reaching conclusions about solutions to emerging problems.

The approaches considered below are intended to address these goals and principles.

## Alternative Approaches

The ideal monitoring program would be comprehensive in scope, tracking data on all significant components of growth and change, and intensive in detail, allowing evaluations of conditions in areas as small as census tracts. This type of program would almost certainly require the use of computer models to absorb and analyze endless streams of data emanating from numerous sources. It would also require the organization of new data sources to enable monitoring of many components of growth not currently tracked. Clearly, such a program could be expanded almost indefinitely, but the costs would rise commensurately, quickly outstripping reasonable budget allocations.

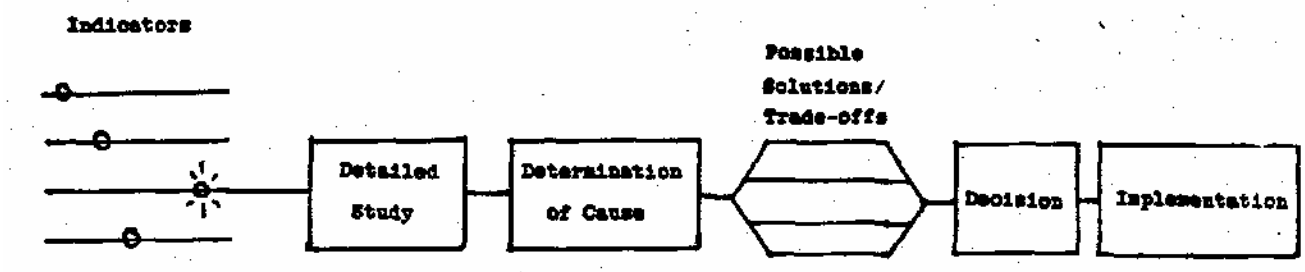
As a practical matter, then, something short of a comprehensive program should be considered. It appears that there are three alternatives to a large, comprehensive program structure: (1) focusing the program on one policy area, such as environmental factors or economic factors; (2) concentrating -on the plan's effects in one or two tiers—in effect, in designated critical areas; or (3) establishing a relatively broad but selective data reporting system that will serve to warn of emerging anomalies in the components of growth and change, which can then be subjected to in-depth targeted studies.

The latter approach is recommended, borrowing some elements from the other two. Neither of the other approaches is deemed satisfactory in either the short or long range, A program focused on just one policy area or only one or two tiers would fail to address some important concerns of the state plan. It would also produce information on some policy matters but provide no basis for determining future trade-offs among policy goals. A finding that certain economic goals were not being attained, for example, is relatively meaningless if potentially offsetting gains in environmental conditions cannot be weighed.

\ The fourth option, which might be termed the "smoke detector" alternative, holds promise for tracking important trends and providing information needed to evaluate potential plan revisions while keeping the program within budget bounds. The premise is that the monitoring program would focus information-gathering on

a relatively limited number of data sources that would indicate when critical trends appear to i>e " off -course." With that warning that something is amiss, targeted studies would be launched to determine detailed conditions and chart potential course corrections. Plan revisions or other actions could then be scheduled as necessary.

Suppose that regularly-collected data, for example, revealed that land prices in one tier were inflating at greater rates than expected—compared to past rates, rates of nearby areas, and state or national rates. A brief study would determine whether prices were responding to shortages of developable land, changes in migration patterns, a new industry's wage rates, the construction of value-inducing public facilities, unique land sales transactions, or other factors. Depending on the cause found, recommendations might be made for state plan changes—to increase the inventory of developable land, for instance—or for other actions, or for none. This process would allow state and local officials to deliberate their options with a reasonable amount of information and within the context of an overall plan.




Summary Description of Basic Approach to Monitoring System

This approach suggests a two-level approach to data gathering. One level would consist of primary indicators of significant trends and conditions throughout the state and in specific subareas. A second level of information would assemble many other data sources that would be useful in detailed studies but not necessarily monitored on a continuous basis. The first level would incorporate the key indicators of growth and change, for which information would be collected for the state as a whole and for municipalities and tiers (probably aggregated from census tract data in many cases). This primary level would also include major out-of-state indicators such as national economic trend data.

The second level of information would include all other data sources from which information can be collected on a periodic basis, plus identified special sources pertaining to specific geographic or functional areas. Detailed studies would employ this information to verify and explain the trends or conditions identified by the first data level.

In addition to the indicators themselves, baseline data must be assembled to describe existing conditions existing at or about the time the plan is adopted, and quantifiable targets must be set for basic components of growth such as population and employment. Increases or decreases from the baseline can then be measured against targets and plan objectives.

The basic components of the "smoke detector" approach are outlined in greater detail in the next section.

## Elements of the Monitoring Program

For purposes of this report, five categories of information are analyzed as sources of data for a monitoring program: economic, environmental, infrastructure/fiscal, intergovernmental, and community quality/social. In each of these categories, the discussion on the following pages describes the questions and issues to be addressed and suggests potential indicators of significant trends.

Monitoring Economic Effects of Growth and Change

The objectives of the program to monitor economic effects of growth and change are similar to the objectives of other components of the monitoring system in that the system should be designed to serve several very important functions.

1. First, it should provide measures or indicators of the extent to which the objectives served by the plan are being achieved (i. e. to what extent to desired outcomes match actual outcomes).

2. Secondly, the system should provide information on changes in conditions which are important to signaling a need to change plan policies or specific provisions.

3. Thirdly, the system should provide information which assists in evaluating the effectiveness of plan policies and provisions.

Eajsifi System Design Factors: Economic conditions are the product of a very complex set of interactions among consumers, producers, distributors, financial institutions, investors, governments, and natural forces across local, state, national and international boundaries. In order to reach conclusions about the extent to

which economic effects can be attributed to the plan provisions, plan process, or other factors, the monitoring program must be , structured to permit complex analytical processes to be carried out. In turn, in order to build this structure a model must be formulated to explain how the plan provisions, plan process and the consequent plan implementation interact with the New Jersey economy. Furthermore, in arriving at conclusions regarding the net effects of planning decisions one must mix economic with non-economic factors such as health and safety considerations that usually can not be priced or translated by use of a measure comparable to economic measures (jobs, costs of living, income, wage rates, etc.).

A factor that needs to be recognized in designing the system is that data collection and analysis tend to be costly exercises that typically do not fare well in the competition for scarce planning dollars. This factor coupled with the general lack of systematic collection of data which relates economic activity to property markets makes the implementation of an effective economic effects monitoring system somewhat of a challenge.

The program should also recognize that the-plan's goals and objectives, as well as plan provisions, are premised on the continuation of fairly substantial growth pressures. Recognizing the difficulties in forecasting long term economic conditions at the state level, the monitoring system should seek to allow for

alternative assumptions regarding basic economic forces which have some reasonable probability of being realized.

Defining Economic Effects: Since the term "economic effects" can be interpreted in varying ways, there is a need to define the meaning of economic effects. Generally, this study defines the term as "changes in wealth, incomes, prices, costs, profits, wage rates, and similar conditions which affect the material well-being, present and prospective, of state residents," In land use policy debates, the "economic effects" of land use policies which are usually addressed include effects on the following:

1. opportunities for economic growth, as measured by increases in the aggregate level of economic activity contained within the plan jurisdiction (the most common indicators being total number of jobs and gross real income to resident households; less frequently, estimates of effects on gross regional product are made);

2. Job opportunities for the unemployed or underemployed;

3. net fiscal costs/revenues to local government;

4. property values/prices particularly housing prices and rents; and

5. standard of living as measured by per capita incomes and average household or family incomes.

These economic measures, essentially measures of material affluence, have developed over the years because they have been important determinants of personal well-being. Jobs provide incomes and a feeling of worth to society; income determines housing quality, quality of food, quality of clothing, amount and quality of education, access to health care, access to recreation, and often social standing. Thus, this analysis uses the common definition of economic effects as those changes which determine changes in job opportunities relative to labor force, total Jobs, total real income, income per capita and household, and individual wealth. Since the proposed state plan (1) seeks to achieve its economic objectives indirectly through land use or infrastructure development policies and (2) has non-economic objectives which result in policies and provisions likely to have economic effects, the monitoring system should include the necessary intermediate variable measurements which permit inferences regarding both types of effects.

This section of the paper focuses on these effects, with the exception of fiscal effects, which are treated in another section.

Basic Issues Regarding Types of Economic Effects To £e_ Monitored:

A number of issues have already been raised with respect to the potential economic effects of the state plan, which must be addressed in the monitoring program. These issues, summarized below, form the core of a monitoring program for tracking economic aspects of growth and change.

1. Will the provisions in the plan that seek to maintain economic growth while curbing urban sprawl be effective? Clearly, this is a major issue, because both the concept itself and the ability of a state government to effectively intervene in this way are untested.

2. Will the plan provisions be effective in maintaining housing affordability in the face of restrictions on the supply of developable land around individual communities? Maintenance and enhancement of housing affordability is an important objective, yet experience in most areas practicing stringent growth management indicates that housing prices increase substantially due to underlying land price increases. Restrictions on the supply of developable land in the face on growing demand will clearly result in homebuyers bidding up the price of available housing. To the extent that other state plan provisions aimed at preserving or improving environmental quality are effective, one could expect increases in the demand for housing in some growth areas and therefore even further pressures on prices. Higher land prices can be offset by

increasing densities but most local communities seem to resist the development of higher density housing at a scale that would have much effect on land prices.

3. How will wage rates be affected by growth and change under the plan? It can be argued that wage rates will be the most revealing indicator of how well future development will meet plan objectives. It is fairly common, to assert that growth management programs tend to increase housing costs (for standard quality housing) and that, therefore, higher wage rates are required to attract workers to jobs in the area. High wage rates, in turn, tend to depress the economy somewhat below the level, it otherwise would have been. This argument ignores the fact that expected improvements in environmental quality resulting from the plan's growth management policies will result in workers' to take advantage of the better. i accepting lower wages quality of life. Therefore, wage rates (absolute and relative) are an important indicator of the economic effects of the plan.

4. Will housing affordability problems lead to greater economic segregation in the state? Inflation in residential land prices, restrictions on higher density housing, and the lack of an older stock of lower cost housing make it difficult to attract workers to lower wage jobs in growing areas. Further restrictions on

development in these areas could exacerbate the problem. Businesses serving the local market have little choice but to increase wages to the level necessary to attract labor. Businesses serving markets outside the local area will most likely have to relocate to a lower labor cost area to stay competitive. Thus, the demand for lower wage workers in such areas is likely to drop below what it would have been otherwise due to prohibitive housing prices.

5. Are the land use policies consistent or conflicting with the peculiar needs of the various subeconomies operating within the state. Urban areas tend to develop specialized economic functions associated with unique characteristics of each area. As transportation costs of raw and finished goods and communication costs have become less important in determining competitive advantage, other more subtle factors have increased in importance.

Outside of the agricultural economy, which the plan addresses specifically, the special needs of various subeconomies are not identified by the plan nor is there any recognition of the possible impacts, favorable or unfavorable, of the plan on key subeconomies. Given that agglomeration economies appear to be significant In certain "high-tech" and service industries, it is particularly important to monitor the possible effects of growth and change on industries whose success is dependent on the

 realization and

maintenance of such economies.

General Structure of fin. Economic Monitoring Program: Given the general functions to be served by the monitoring program and the specific issues which surround the probable economic effects of the plan, it seems appropriate to carry out monitoring in two parts: one which tracks basic conditions that tell the state what is happening to key economic parameters and one which involves the collection of more specialized information to enable an assessment of particular effects. The basic economic measures or indicators should include the following for the state as a whole and for counties, municipalities, and tiers:

1. employment by industry;
2. labor force;
3. unemployment rate;
4. gross personal income;
5. per capita income;
6. median household income;
7. earnings by industry;
8. wage rates for standard classes of workers;
9. housing prices standardized for quality and location;
10. land prices standardized by type of use permitted and location;
11. commercial space lease rates for standard types of space;
12. new construction permitted by major type;

13. housing units permitted by type;
14. construction completed by type;

Most of the above information can be obtained from existing data series collected by the federal and state governments. Exceptions to this are land price information, standard housing price data, and standard commercial rents. Because these are critical indicators of intermediate factors reflecting the effects of plan policies, it is highly recommended that a system for collecting this information be set up.

These basic measures of economic conditions are needed to monitor whether the economic assumptions on which the plan are based are being realized and, if not, to signal changes in the plan policies. They also will permit inferences regarding whether desired economic effects are being achieved (for example, maintaining or enhancing housing affordability) or whether plan policies may be creating undesired effects (for example. dampening housing construction below desired levels). While it will be impossible to jump to quick conclusions from the basic indicators, they will suggest the need for further investigation.

Land prices and space prices are critical because they represent early indicators that the demand and supply of space based on private market forces are out of balance. Thus they will suggest the critical areas where more attention must be paid to insure

that the competing objectives of the plan are brought into appropriate balance.

Beyond the basic set of indicators tracked on a regular and statewide basis, the particular uncertainties regarding certain key objectives and provisions of the plan suggest the need for several special monitoring activities. In general, terms these are:

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1. Monitoring the key locational requirements and propensities of establishments in the industry sectors which have been expanding employment or which analyses suggest represent the most probable growth industries in the future.

2. Monitoring the deficiencies in Tier 1 locations which must be overcome to attract establishments in the industries representing the greatest growth potential for the state.

3. Conversely, monitoring the types and levels of incentives available to Tier 1 locations to determine whether they are sufficient to address the deficiencies and to adjust revitalization strategies as appropriate.

4. In areas where housing price Increases significantly exceed general inflation in construction costs, conducting special surveys to determine the extent of filtering and upgrading occurring in the low to moderately priced housing

stock. (The most severe adverse effect on affordable housing opportunities is likely to be through upgrading and upward filtering of the existing housing stock.)

5. In designated growth areas where general evidence suggests that there may be problems in balancing the projected growth in the demand for either nonresidential or residential space with appropriately zoned and serviced land, undertaking special investigations to ascertain the required supply of land, to meet development demand and to determine the required regulatory and infrastructure development actions.

6. In suburban areas where the state plan recognizes the probable intensification of development, obtaining data to compare the prices of office, retail, and residential facilities to similar space in lower-density, more traditional corridor development to measure the value of this type of development to businesses, residents, and consumers.

7. Because it is difficult to attribute cause to effect in this general area of urban economics, identifying and tracking "control" situations in or out of the state by which to compare various types of subareas impacted by the state plan. This would permit firmer conclusions to be drawn regarding the impacts of the plan policies.

8. Regularly surveying a sample of businesses representing different key industrial sectors to determine how factors affected by the plan may be impacting businesses generally in the industry that they represent.

These eight special monitoring efforts will clearly involve a considerable amount of special data collection and systems, design which goes beyond the scope of this initial effort. Moreover, implementation of the system is likely to involve considerable expense but expense which is necessary if the goals and objectives of the planning process are to be achieved. In adopting such a plan, the state assumes an awesome responsibility that can not be fulfilled effectively without an appropriate monitoring and policies assessment system which provides feedback on changing conditions and the effects of the actions resulting from the plan.

Effects of Growth and Change on. Environmental Quality

One of the cornerstones of the state plan is protection of New Jersey's environmental and agricultural resources in the face of growth and change. Many of the plan's goals and strategies are directed to consolidating and concentrating development in and around existing settlements in order to preserve environmentally-sensitive and agriculturally-useful areas of the state. (This protection is imposed in addition to environmental Dualities

already protected in three major sections of the state—the Meadowlands, Pinelands, and coastal areas.) In general, the environmental goals of the plan are to improve air and water quality, protect coastal areas, protect water supplies, wetlands, and stream corridors, reduce flooding and flood losses, preserve scenic corridors, and protect endangered species. Environmentally sensitive areas such as pristine watersheds, reservoir watersheds, and endangered species habitats are encouraged to remain undeveloped or developed for low-intensity recreational and residential uses. To accomplish this, the plan recommends that .development in such areas should be clustered at • a gross density of one unit per five acres or dispersed at a density of one unit per twenty acres.

The data required to monitor environmental quality is extensive, reflecting the broad array of environmental conditions involved, water quality, for example, require ! Determinations of air and measurements of many airborne or waterborne chemical and biological indicia including, in the case of water, suspended ^ sediments, fecal coliform, heavy metals such as lead or cadmium, nutrients such as nitrogen, phosphorus, and potassium, and certain organic chemicals.

Fortunately, as a result of decades of federal and state interest in preserving air and water quality, many of these indicators are regularly monitored at locations throughout the state.

Information about flood-prone areas and flooding incidents has also been quite extensively monitored. To monitor agricultural land preservation, divisions of the U.S. Department of Agriculture periodically measure land in various forms of agricultural use. The principal requirement in relation to the state plan would be to assemble and analyze such data for those areas delineated in the plan for environmental preservation and, perhaps, to increase the number of monitoring locations in those areas.

For a number of environmental conditions, however, monitoring will require new or more complex efforts. Some suggestions of indicators for these conditions follow.

Wetlands: Changes in amounts or qualities of wetlands are especially important with the recent passage of a state law to protect freshwater wetlands. One approach to identifying the location and extent of wetlands is the advanced identification program currently being tested by the U.S. Corps of Engineers in a number of areas including the Hackensack Meadowlands. In addition, satellite photographs can be used to trace changes in wetlands. Another approach is to periodically sample bird population in selected wetland areas. Their diversity and number will decline if wetlands are degraded or destroyed.

Midi ife: The locations of endangered species usually are only generally known prior to specific studies undertaken in association with proposed development. It may be possible to identify some types of wildlife habitats through the use of satellite photographs and other existing mapping of environmental features that harbor wildlife. Some specialized habitats, however, probably will escape identification. Barring major expenditures for sampling and mapping wildlife habitats throughout the state, identification and preservation of habitats must rely on individual studies carried out as part of the approval process for development projects.

Groundwater Quality: Only recently have federal and state agencies taken action to protect underground water aquifers that supply water for many communities in New Jersey. Techniques for determining the location and functioning of such aquifers are rudimentary and still evolving. Yet monitoring of groundwater quantity and quality is important, given recent problems with water supplies in many New Jersey communities. At the minimum, the monitoring program could assemble and analyze reports of such problems to indicate reductions in groundwater quality and quantity in specific municipalities. The state should then initiate studies to better understand the ebb and flow of groundwater resources.

Agricultural Land: Although the U.S. Department of Agricultural periodically measures land used for various agricultural purposes

(through satellite photographs), and the Census Bureau determines economic and other conditions for farms every ten years, it may be advisable to track changes in agricultural activities more closely. This could take the form of "soft" monitoring by periodic consultations with Soil and Conservation Service and Agricultural Extension Service officials, or through more difficult and expensive tracking of data on farm produce sales, farmland sales, and sales of agricultural service businesses.

Scenic Corridors: Monitoring changes in scenic corridors will require periodic surveys of the corridors by teams of experts to ascertain that regulation of the corridors has achieved its aims. Such surveys must proceed from a base of information about , existing conditions, confirmed by maps and photographs.

It is assumed that an important contribution to monitoring will continue to take place as it does at present: through the actions of watchdog environmental groups that identify and report incidents of potential or actual environmental degradation. This process could be aided by notifying such groups of a central reporting office.

## Monitoring Infrastructure Conditions

The impacts of growth and change on infrastructure systems were one of the major stimulants to interest in a state plan for New

Jersey. Increasingly congested highways, water supply shortages, and other problems with schools, waste disposal, and other capital facility systems prompted concerns about urban and rural development patterns, and-a belief that more effectively managed development could reduce future infrastructure costs.

Certainly, infrastructure systems are vital to the development process, affecting the amount, location, and character of development. The state plan recognizes those relationships in its statewide strategies for capital facilities financing and development and capital facilities planning, which in general call for the following goals to be met:

i

o periodic assessments by the state, counties, and municipalities of capital facility needs and costs;

i

0 encouragement of capital facility development in urban and high-growth areas (tiers 1-4), in part through public funding support of on-and off-tract infrastructure in tier 1 and public/private sharing of off-tract funding in tiers 2-4;

\ o limited development of capital facilities in low-growth areas (tiers 5-7), in part through restrictions on public funding of off-tract facilities;

- o designation of repair and maintenance of existing facilities as having highest priority in allocations of funds.

In addition to these concerns, the state plan recommends specific strategies for future development of infrastructure systems, such as:

- o integration of highway and public transportation systems and improvements in keeping with state plan goals, including encouragement of public transportation, car and van pooling, park-and-ride, and other demand-management approaches to reduce highway traffic congestion;

- o assurance that development of water supply and waste disposal systems will maintain surface and groundwater supplies adequate in quality and quantity to serve future needs.

Thus, the monitoring program will require data that describes present levels of use of infrastructure systems and defines future needs for infrastructure repair, replacement, and expansions for the state, counties, municipalities, and tiers. Ideally, this data would be collected for the full range of infrastructure required to support development, including water supply, sewage disposal, highway and mass transportation systems, schools, parks and recreation facilities, drainage, and solid

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waste disposal.

Such information must be obtained from special taxing districts. as well as municipalities and counties. Special taxing districts, such as water and sewer (utility) districts, are instrumental in providing many services but may have separate reporting requirements. Furthermore, districts often overlap several local jurisdictions, making data collection more complex.

For the purposes of the basic monitoring program oriented to detecting potentially critical changes in growth patterns, the following specific indicators suggest the types of information to be sought :

1. current use of existing infrastructure, including such measures as:

- o vehicles per hour and per peat hour on the arterial streets
- o transit ridership on transit lines
- o average daily flows in water supply systems and wastewater treatment systems
- o average class sizes in school systems.

2. Existing infrastructure capacities and planned capacity changes over six years.

3. Six-year projections of infrastructure needs, including indicators of need such as numbers of street intersections operating at service level D or lower, or numbers of overcrowded schoolrooms.

Some of this data may already be collected as part of the requirement for capital facility programming under the New Jersey Municipal Land Use Law.

Monitoring Intergovernmental Conditions ,

The state plan will call for an unprecedented degree of cooperation and coordination among state agencies and between state and local governments. At the same time, each of these entities will continue to be concerned about its ability to formulate and carry out public programs targeted for its mission.

One of the tasks of the monitoring program will be to aid coordination among state and local jurisdictions while assuring them of a reasonable measure of autonomy, thus securing their cooperation in implementation of the state plan.

Local governments will be concerned that future growth and change, affected in part by the state plan's policies, will result in positive, not negative, effects on their fiscal health

and on their abilities to cope with change. They will wish to guard against reductions in expected tax ratable increases, unanticipated requirements for massive capital facility expenditures, or local economic downturns, any of which would adversely affect county and municipal budgets. Conversely, the monitoring program should watch for unexpected surges in tax bases, low levels of capital facility spending, and economic booms that could signal unplanned growth at the expense of other jurisdictions.

Local governments will also be concerned with maintaining planned deliveries of state assistance for public facilities and services supporting growth and change. The monitoring program can play an important role in identifying emerging inequities between local governments caused by inadequate state/local coordination.

State and local coordination will also be required In management of future state plan and local plan changes in response to trends and conditions. As adjustments and revisions are made to the state plan, there will be a continual need to maintain consistency between state and local plans. The monitoring program will provide a means to manage that consistency requirement.

Finally, the monitoring program should Identify state agency actions that are inconsistent with the state plan or that are leading to unanticipated results.

To achieve a reasonable level of understanding about these conditions, the monitoring program should track the following types of information:

1. tax bases, outstanding debt, and tax rates of local governments, including special taxing districts, in growth and non-growth tiers;

2. annual capital expenditures by state and local governments and taxing districts, for major types of infrastructure systems, for the state, tiers, and municipalities;

3. annual state transfers of funds to local governments, by state agency, in tiers and municipalities;

4. local plan changes compared to state plan changes.

The first two indicators are undoubtedly already collected annually. The third type of data is reported for census purposes every five years and may be collected annually by various state agencies. The fourth Item would be necessary in any case as a basic planning and management requirement for the state planning commission. Other problems with inconsistent or ineffective state and local actions to meet state plan objectives would be

defined during the special studies called for in the event of other "smoke detector" signals.

Monitoring Community Quality flfid Social Conditions

Much of the future success of the state plan will depend on - important but elusive social factors involved in growth and change. The plan's ability to achieve alterations in. land use patterns, for example, will rest in part on the willingness of individuals to accept more densely built communities and redeveloped areas as residential and employment locations. That, in turn, will depend on those individuals' perceptions of the quality of life they can expect to find in those areas. At the community scale, public officials must be convinced that cherished community qualities can be retained if they are to agree to state plan policies that promise to add to or alter the built environment .

The concept of "community character," of course, is difficult to pin down, since residents' interests and perceptions change over time, what some residents find disturbing in a changing community may be looked upon as desirable by other residents or at other times. Still, it is commonly accepted that residents wish to live in communities that can boast good schools, park and recreation facilities, attractive streets and buildings, access to shopping and employment, personal safety, a stable if not improving housing stock, and neighbors with like-minded values.

It is also commonly accepted that growth, either within or around communities, can threaten these qualities.

The state plan itself has little specifically to say about community character and social factors, although implicitly the entire plan is directed at improving the daily life of New Jersey's residents. The plan does, however, set forth strategies, policies, and standards that encourage higher densities of development in most communities, more effective interrelationships among the various components of communities, and more sensitive approaches to design of buildings and landscapes, all of which play important roles in shaping community character.

The monitoring program can approach the measurement of such qualities only in a tentative way, since the art of social impact analysis is far less developed than other forms of impact analysis. In the Urban Institute's 1976 report on Social Impacts of Land Development. Kathleen Christensen identified 11 categories of information on physical factors and 13 social information categories that might be used to measure social impacts of new development. Some of these categories, such as crime rates, income and education of residents, and available recreation opportunities might be relatively easy to collect data on. Others, however, such as resident satisfaction with

landscaping or shopping user patterns, are more difficult to survey and analyze.

Yet it is possible to identify certain qualities that affect the way people think about communities, and that would serve to alert state and local officials to impending problems affecting the success of the state plan. Of particular usefulness would be information that would indicate residents' satisfaction or dissatisfaction with community conditions which might lead to changes in projected growth. The following list suggests some possible indicators of community quality and social concerns affected by growth and change,

1. Housing prices related to resident incomes, for the state, counties and municipalities, and tiers. Although this is also an indicator of inflating land prices, a price/income ratio higher than comparable ratios in other areas suggests that community qualities are attracting residents who are willing to pay more to live in the area. By the same token, a declining ratio in comparison to these in other areas might indicate resident dissatisfaction with the neighborhood.

2. Housing turnover in municipalities, compared to state and other average rates. An increase in housing turnovers with rising housing prices usually indicates a change in population characteristics that will modify former perceptions of community qualities. Such an event may also signal displacement of low-income families. Likewise, a

decrease in housing turnover with rising housing prices would signal high satisfaction with the neighborhood.

3. Changes in development densities at the municipal level, (1) to determine that contiguous and infill development policies of the state plan are being achieved, and **(2)** to signal potential sources of resident dissatisfaction or unease with community development*

4. School expenditures per pupil, for the state, counties and municipalities, and tiers. Although the state has attempted to equalize these expenditures, in fact communities still exhibit variations in the amounts spent for schools. In general, higher rates of expenditures per pupil indicate resident interest in (and ability to pay for) good schools, and lower rates indicate less resident interest in schools. Again, in general, higher expenditures tend to produce better school systems, an almost infallible feature of desirable communities.

5. Building permits for home maintenance and remodeling in municipalities. Increases in Investment in existing neighborhoods would provide a good Indicator **of** resident satisfaction with neighborhood and communities qualities.

In addition to monitoring these types of indicators, improvements in community character and social factors may be determined

through sample surveys in areas where rapid growth is changing communities. Such surveys have become increasingly popular and sophisticated techniques for determining reliable results, are evolving.

One of the most potent indicators of resident satisfaction or dissatisfaction, however, is the number of complaints to legislative representatives in municipalities and the state. The monitoring program, therefore, should sound out legislators from time to time for information on this topic. In addition, periodic sample surveys of resident attitudes and opinions would provide good information on responses to growth and change.

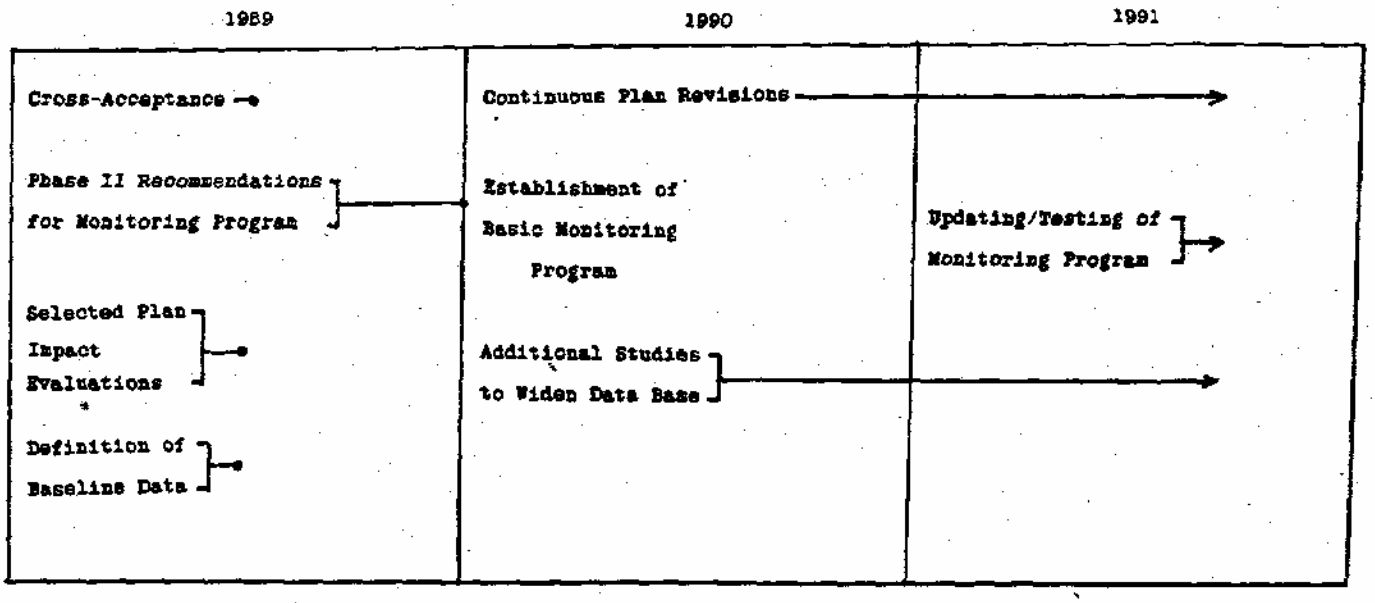
## Implementation of the program

The program suggested above would provide a rudimentary framework for monitoring growth and change. It should be implemented in at least three stages:

1. In the first stage, during the cross-acceptance phase of the state planning effort, studies of selected effects of the state plan should be carried out to provide guidance to the Commission prior to final action on plan adoption. During the same period, further studies of the proposed monitoring program should be undertaken to more precisely define appropriate indicators. Also at this time needed baseline data should be defined and determined.

2. The second stage would see a basic monitoring program established and functioning. During this stage, additional studies would be undertaken to widen the available information base and continue to define additional indicators. As the first results of monitoring become available, program revisions would be expected.

3. After this initial break-in period, the monitoring program would be fully operational. It should not be considered a static mechanism, however; the program should be subject to continual testing, revision, and expansion as the state of the art advances and the amount of available data increases.




**Summary Schedule of Activities in Planning and Monitoring**

In addition to the basic indicators employed to sense the amount and. character of growth and change throughout the state, the monitoring program should include periodic opinion surveys, in selected areas and in the state as a whole, and studies of specific problems for which special data is needed.

This recommended program assumes that the state planning-commission would continue to function as the lead agency in monitoring growth and change. This makes sense if the plan is conceptualized as a management mechanism that will require constant adjustments and revisions in response to new information. The plan will be a living and changing one, to which the planning agency will continue to contribute.

It should be recognized, however, that public bodies that make policy commitments often are under considerable pressure to demonstrate favorable results—and to have those results attributed to their policies and actions. The corollary, of course, is that any unfavorable results tend to be attributed to other, uncontrollable events. This issue suggests that the monitoring program should be at least periodically reviewed by 4-ndependent groups to determine that plan policies and policy results are compatible with stated objectives.

State Agency and Local Government Roles

The monitoring program clearly will require cooperation from state and local sources of information in order to function. Many data sources already exist and simply need to-be tapped and coordinated. Other data not regularly collected or reported could be obtained with relatively little additional effort and cost. One of the first steps in establishing a monitoring

program, therefore, should be to discuss with state agencies and local governments their available information and arrange a coordinated, systematic means of reporting it.

Data collection from these sources should not be considered an onerous task, because (1) much of the data obtained through the monitoring program will be useful to state and local groups; and (2) much of the data should flow from agency and municipal plans and programs that are needed in any case.

In point of fact, the monitoring program's data requirements may help local governments to systematize their capital improvement programming, housing plans, and other growth management efforts.

Another important role to be played by state agencies and local governments will be in the reconciliation of conflicting objectives and goals as state and local plans are revised. The information provided by the monitoring program should assist in this process.

## ££&££ SM Budget Requirements fox a Monitoring Program

Monitoring should be carried out by a core staff with assistance from consultants with specialized knowledge. A core staff is necessary to build and retain an institutional memory from year to year as information is reported and analyzed. Staff members should have educational backgrounds and experience in real estate

economics, land use, urban sociology, environmental preservation, and similar fields. For detailed studies and analyses of information that requires specialized knowledge, consultants should be employed to assist the staff.

The first .stage work program will entail a considerable amount of substantive evaluation of potential indicators and data sources, plus intensive discussions and negotiations with state agencies and local governments, some on a quite technical level. During the same period, several studies of state plan effects will be carried out. This level of effort over the relatively brief period of cross acceptance will require, at the minimum, a core staff of 10 to 15 professionals and assistance from a half dozen or so consultants. This would require a budget on the scale of a half million to a million dollars. A more ambitious work program would call for a staff organization of several specialized divisions, each with several staff members, plus administrative and clerical staff, all potentially numbering 50 to 60 employees and an associated budget of $2.0 to $2.5 million.

## Structuring a Monitoring program. Phase II

This report constitutes a conceptual proposal for an approach to monitoring growth and change in response to the adoption of a state plan. It is in every sense preliminary, given the amount of time available to research the subject and the very tentative state of the art. The proposed approach must be fleshed out,

both in terms of the details of appropriate indicators and the sources of data that might be identified or established. -

The second phase of this effort should assemble an interdisciplinary team of specialized professionals that would carry out more intensive research to evaluate the proposed approach, determine indicators, define data sources, and structure the program in more detail. At this point, we would envision a one-year effort* involving a half dozen consultants with active state and local public staff participation. Roughly speaking, the first half of the year would be required to settle", on appropriate indicators and measures, with the remaining half year to emplace the system in the appropriate state and local agencies, including establishment of data reporting systems. Such an effort would require funding at an estimated level of $300.000 to $400,000;. The end product would i be a detailed program for monitoring growth and change.