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16. Abstract

In high growth areas, highways frequently become congested as the result of land use changes. Local land use controls have not prevented the adverse impacts. Further, state funds are inadequate to address the critical problems in growth areas.

This study investigates six study areas in Washington State to compare land use change impacts and the effectiveness of the various procedures applied to prevent or correct such problems and to fund highway improvements in growth areas. A survey of practice in other states provides information concerning their approaches to the problem.

The study concludes that comprehensive land use planning supported by inter-agency cooperation has been limited. Local governments have applied a number of innovative techniques for financing local roads and streets. Cooperative interagency planning before growth is out of control has benefited both the local jurisdiction and the state. However, state and local jurisdictions lack the authority to apply these techniques to state highways in Washington State. The study makes recommendations for increasing interagency cooperation and for legislative remedies.

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Research Report

IMPACTS OF LAND USE CHANGES ON MAJOR HIGHWAY FACILITIES-- ALTERNATIVE APPROACHES TO THEIR MITIGATION

Prepared by
System Planning Branch
Public Transportation and
Planning Division

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DISCLAIMER

The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Washington State Department of Transportation or the U.S. Department of Transportation, Federal Highway Administration. This report does not constitute a standard, specification or regulation.

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EXECUTIVE SUMMARY

Problem. In high growth areas, this state's highways are frequently congested and unable to accommodate the increasing demand. Local land use controls have not prevented capacity deficiencies and WSDOT lacks the funds to address the critical transportation problems in these growth areas.

Purpose of Research. Several other states and local governments within this state have attempted to address this difficult problem through a variety of land use control techniques, participation by developers in improvement costs, and other innovative approaches to highway financing. The purpose of this research is to examine the impacts of land use changes on highways in growth areas and to investigate the various land use control techniques and financing approaches that have been utilized for possible applicable by WSDOT.

Methods. To achieve study objectives, the following methods were applied:

- Six growth areas within the state were selected for case studies. Some have little or no land use controls while others have extensive plans and implementation procedures. Investigation of these areas provided the basis for comparison of land use change impacts on highways and the effectiveness of the various procedures applied in addressing the problems.

- A survey was made of 13 states concerning their experience with the problems of growth areas and with policies and procedures they have adopted to address the relevant issues. This was augmented by a review of legislation proposed and/or adopted to address the basic problems.

SUMMARY OF FINDINGS

- Results of the study indicate advantages to both local governments and to the state where comprehensive land use planning programs have been initiated and land use controls adopted. In Washington State many local jurisdictions do not have comprehensive plans. Several other states make planning mandatory and provide for identification and protection of statewide interests in local planning and land use controls.

- Procedures have been established and followed for interagency cooperation in comprehensive planning. The study findings indicate that the results have been more procedural than real. In growth areas, interagency participation in the planning process becomes especially critical. Early planning efforts benefit both WSDOT and the local jurisdiction.

- In growth areas, state highways become the most important component in the local traffic circulation system. Their use as access to abutting properties also impairs their usefulness to the state highway network. Local governments have applied a number of innovative techniques for financing improvements to local roads and streets, but lack the authority for their application to those parts of their local system which are designated as state highways. Further, such authority has not been extended to WSDOT.

- As a result of the environmental impact (EIS) review process, local governments have been able to require developers to participate in the financing of needed improvements. However, WSDOT must depend upon the local governments to require such participation in financing highway improvements. The practice varies greatly throughout the state so that WSDOT's benefit has been limited. Other states have developed comprehensive policies concerning developer participation, and have specifically included state highways among those facilities for which adverse impacts must be mitigated.

RECOMMENDATIONS

- Increase efforts toward interagency cooperation in planning including:

  - Early identification of growth areas.

  - Integration of land use planning with the programming of transportation facility improvements.

  - Identification of potential conflicts between the state's interest in highway facilities and local land use objectives.

- Develop incentives for local governments to consider statewide interests in local land use plans and development decisions with consideration to:

  - Technical planning and traffic engineering assistance to facilitate local planning efforts.

  - In the allocation of resources for highway improvements, give preference to jurisdictions which protect the states interests with effective land use controls.

- In addition to the traditional sources for financing highway improvements, develop new approaches, including:

  - Extension of authority for alternative financing for local roads and streets (i.e., improvement districts, utility fees, etc.) to state highways.

  - A consistent method for developer participation in the financing of highway improvements as mitigation for traffic impacts on highways.

- Give legislative consideration to:

  - Improved cooperation between the state and local planning agencies as mandated in California and practiced in Illinois and other states.

  - Mandatory local planning, as in Florida, California and Oregon.

  - A proedure for the identification and protection of state interests in local land use decisions as in Vermont, Florida and others.

  - Establishment of a policy of developer responsibility for traffic impacts as in Vermont and Florida, but also as applied by the California Department of Transportation and by Snohomish County in this state.

IMPACTS OF LAND USE CHANGES ON MAJOR HIGHWAY FACILITIES -- ALTERNATIVE APPROACHES TO THEIR MITIGATION

CHAPTER 1
INTRODUCTION

PROBLEM STATEMENT

In high growth areas, this state's highways are frequently congested and unable to accommodate the increasing demand. Local land use controls have not prevented capacity deficiencies and WSDOT lacks the funds to address the critical transportation problems in these growth areas. Therefore, it is essential to seek innovative land use controls and improvement financing techniques.

PURPOSE

The purpose of this research is to examine the impacts of land use changes on highways in growth areas and to investigate the various land use control techniques and financing approaches that have been utilized for possible application by WSDOT. Several other states and local governments within this state have attempted to address this difficult problem through a variety of land use control techniques, participation by developers in improvement costs, and other innovative approaches to highway financing.

The objective of this study is to analyze and make recommendations concerning two somewhat different but closely interrelated subjects. The first of these issues concerns alternative approaches to prevent the adverse impacts of urbanization on highway facilities and the second relates to the financing of highway improvements in these growth areas. To achieve this objective the study will:

- Evaluate effectiveness of land use control procedures in this state.
- Analyze alternatives of other states and local governments.
- Identify procedures that might assist financing of highway facilities.

BACKGROUND

No jurisdiction has found an easy or consistent solution to the basic problem, but some innovative efforts have been made. The manner in which land use controls have developed in various states during a long period of time greatly affects the type of action that is taken within each state and its local governments. As the problem has become more compelling in various parts of the nation, attitudes have changed. The investigations of this study reveal the various actions that have been taken to address the problem in growth areas.

Urbanization is occurring in a number of areas throughout the state of Washington at a relatively rapid rate. New residential subdivisions, housing construction, commercial centers and industrial plants are being developed in these areas. They must have adequate transportation facilities. In most cases, the state highway is the major traffic arterial.

This highway which may have been adequate to accommodate traffic from one place to another for many years may soon be unable to serve that function efficiently when abutting properties are developed to urban densities. Providing access to abutting property is only an incidental function when that property consists essentially of large farms or undeveloped tracts. When the area becomes urbanized, the highway must also provide access to a great number of commercial, industrial and/or residential properties. Furthermore, the highway is usually the first, and for some time the only, arterial serving the new developments.

This is not an unusual situation and traditionally has been dealt with in several ways.

1. A new highway by-pass around the developed area is constructed.

2. The highway is made a limited access facility and other means found for providing access to abutting property and providing an arterial street. This solution is rare since once access has been granted to adjoining properties and extensive development has taken place the cost of right-of-way acquisition makes the limited access approach infeasible in most cases.

3. The highway facility is improved in order to provide the capacity to accommodate the functions imposed on it. This solution often is only temporary in nature particularly if adequate rights-of-way must be acquired to provide space for facility improvement.

In any case there is a limit to the ability of the highway to accommodate the increasing volumes of traffic generated by each of the functions it must perform. There comes a time when new arterials and highways must be added in order for the system to operate with an acceptable degree of efficiency.

In the development of local comprehensive plans, the local jurisdiction considers the relationship between its own streets and roads and the state highway network. Consideration may be given to current transporation deficiencies in addition to the transportation needs of the future. Since different types of land use generate different traffic volumes coordination with land use planning is essential.

The planning dilemma arises as improvements to transportation facilities improve the accessibility of adjacent land. These improvements stimulate new development. Theoretically land use controls can be applied to restrict that new development so that the increased traffic it generates will not exceed the planned capacity of the road and highway facilities. Maintenance of land use controls is particularly difficult where the arterial must serve the dual function of long distance through traffic flow and access to the abutting property.

Limited financial resources make it very difficult, if not impossible, for the Washington State Department of Transportation (WSDOT) to provide highways that are not capacity-deficient or otherwise inadequate to meet the dual needs of providing for through travel and local access in these growth areas.

The cost of building new highways, of improving existing highways and even of highway maintenance now exceed the dwindling resources. An important factor in rising costs is the demand for highway improvements resulting from urban growth. A major focus in this research project has been on this issue of highway improvement financing in growth areas.

LITERATURE REVIEW

Since this literature review covered a number of related but different issues and quite a large number of studies were involved, the detailed presentation of this information is contained in Appendix A and a summary is presented in the section. The earlier studies emphasized the need to protect highway facilities from the development of traffic generating land use changes. Proposed solutions to the problem relate either to improving land use planning coordinated with highway location and design decisions, or to limiting development through effective land use controls.

More recent research has differed little except to place the issue within a broader planning perspective of area-wide growth management. It is quite probable that the importance of accessibility provided by freeways to all types of land use development in addition to highway user services was not fully appreciated. For a variety of reasons the anticipated problems have not been resolved and little of the prior research is applicable now that it is too late for preventive action in most areas.

The basic problems are now quite different from most of those treated in the earlier studies reviewed. Areas have been developed, land use patterns established, highway funds have decreased and not much is gained in reviewing the political problems inherent in making public decisions.

METHODS OF ANALYSIS

To address the issues three separate but closely related investigations were undertaken. The first emphasized the current problem in Washington State through a series of case studies. The second compared local planning and land use controls in the state with the procedures and policies in other states. A survey of 13 selected states and a search of innovative planning legislation in other states provided the required information. The third investigation considered alternative approaches to financing highway facilities in growth areas. In all these investigations, the responsibilities of highway users, of developers and of residents and businesses within growth areas were studied.

Case Studies

The cities and counties of Washington State vary greatly with regard to planning practice and land use controls. Only a relatively few have experienced rapid growth throughout the past ten years. The most useful and practical approach under these conditions is to examine the impact of growth on state highways under quite different local land use control procedures and policies.

Six highway segments within the state's most rapidly growing areas were selected for case study analysis. All of the selected areas are growing rapidly and have serious highway capacity deficiencies. Changes in land use have been pronounced and continued growth anticipated. WSDOT District representatives assisted in the selection of the case study areas which was based on the following criteria:

1. Common Characteristics -- to assure logical consistency of analysis

    a. Rapid urban growth within the past five years and evidence of continuing or impending urbanization.

    b. Area served by state highways which are part of or connected to the freeway system.

    c. A volume capacity ratio of 0.80 or greater for state highways within the area.

2. Differentiating characteristics -- to assure meaningful comparative analysis and consideration to important factors not present in all cases.

    a. Variation in jurisdiction, i.e., city and county

    b. Variation in location -- inclusion of areas in different WSDOT Districts

    c. Variation in land use and development types, i.e., commercial, industrial, residential

d. Variation in freeway-highway configurations

e. Variation in local land use controls and growth management procedures and policies

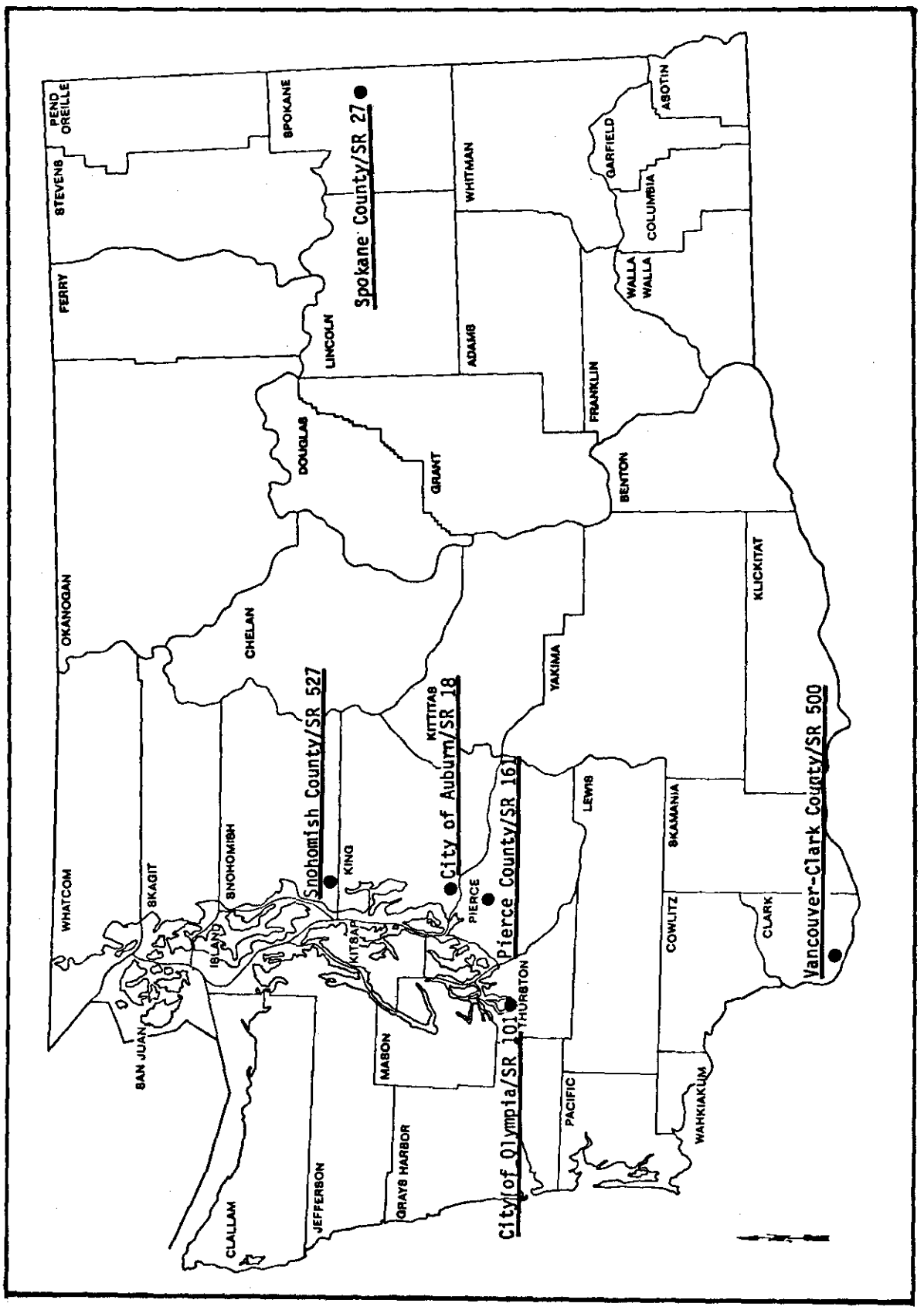
Each of the selected areas has some relationship to the freeway system. Each presents a serious problem of financing much needed highway improvements required as the result of land use changes. The location of the six areas selected is delineated in Figure 1.

The first area, served by SR 161 in Pierce County, has a history of rapid urban expansion but with no comprehensive planning or extensive land use controls. Conversely the North Creek area in Snohomish County, served by SR 527, has been given considerable planning attention for a number of years but is otherwise comparable in many ways.

Two of the six areas (SR 18/city of Auburn and SR 101/city of Olympia) provide examples of how local land use and transportation interests may conflict with the state's interest in maintaining the operating efficiency of highway facilities. An additional area (SR 27, Spokane County) demonstrates how local land use controls can protect the state's interest. Still another (SR 500/city of Vancouver-Clark County) gives an example of potential capacity deficiency after earlier problems have been corrected at considerable cost to the state.

The factors investigated included: (1) traffic volume trends, (2) rate and distribution of population growth, (3) the history and current status of local planning efforts, (4) type and spatial distribution of land use changes, (5) WSDOT plans for future improvements, (6) coordination between WSDOT and local planning activities, and (7) the application of local land use controls within the study area.

FIGURE 1. LOCATION OF CASE STUDIES



Survey

To evaluate policies and practices outside of Washington, survey of 13 selected states was conducted. Respondent states were selected on the basis of similarities with WSDOT in terms of organization and program. Consideration was given to similarities in population, socioeconomic characteristics and problems in financing transportation facilities. The list of 13 includes at least one state from each region of the continental United States and also the two remaining contiguous Pacific Coast states. A copy of the survey questionnaire with a list of states responding is presented in Appendix B.

The survey engendered responses from all of the states to whom the questionnaire was submitted. The questions dealt with the issues pertinent to local land use controls and to the financing of highway improvements in growth areas. The survey was augmented by a review of state legislation concerning the basic issues in this study. Such legislation was identified in studies and reports in the literature review and by knowledgeable local, state and federal officials.

Throughout the investigations of growth areas and the review of practices in other states, financing highway improvements was a major concern. A search was made of innovative approaches, including those used by state and local agencies, to meet critical financing needs in growth areas. Applicable legislation was identified and its application to highway financing in this state reviewed.

CHAPTER 2
CASE STUDIES

The primary objective of the case studies was to evaluate the effectiveness of land use controls as a means of limiting, if not preventing, the adverse impacts of urbanization on state highways. Since WSDOT is dependent upon local governments for the application of land use controls, the investigations were directed to several specific factors:

1. The development history of the area serviced by the highway in relationship to the adoption of local land use controls;

2. Traffic congestion resulting from urban growth;

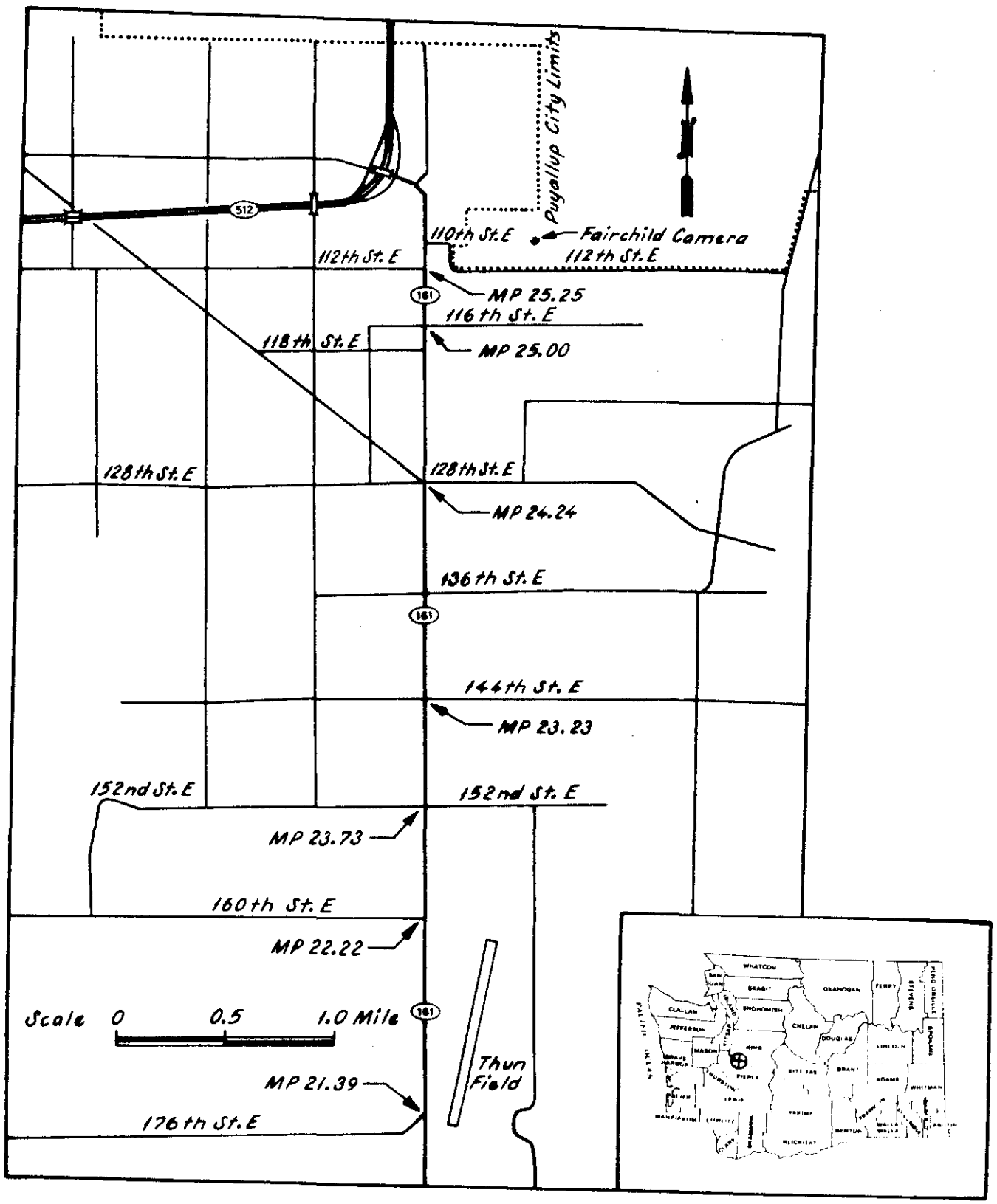
3. The extent of interagency cooperation in planning with particular attention to the relationship between WSDOT plans for the highway and local land use plans for the area; and

4. Identification of alternative approaches to local planning and land use controls and their relationship to the interests of WSDOT.

1. PIERCE COUNTY/SR 161

The South Hill area of Pierce County is typical of several growth areas which continue to increase in population in spite of the current economic decline throughout the state of Washington. Of particular interest to this study is that it has been subject to very few local land use controls. The area is located on a large plateau which rises above the low land plains south of the City of Puyallup (See Figure 2). Aside from the steep hillside down into the valley, to the north and east, there are no other natural features to delineate its boundaries. In this study it is defined as the developing area served by SR 161 between SR 512, on the north, and 172nd Street, on the south. For statistical purposes, the study area consists of the 36 square miles within Township 19 North, Range 4 East, Willamette Meridian.

FIGURE 2. PIERCE COUNTY/SR 161



Background

In the South Hill Comprehensive Plan[1] the 1980 population of the combined South Hill and Puyallup Valley population, excluding incorporated areas, is estimated to be 43,033. (The study area for this report as defined above has approximately 60 percent of that total or 25,800.)

Data on population for either the study area or for the combined South Hill-Puyallup Valley Planning Area are not available from prior census years. Thus, other growth indicators must be applied in order to demonstrate the extent of growth over the past several years. Two readily available indicators are traffic counts on SR 161 and the filing of subdivision plats with Pierce County.

Table 1 presents the 20-year history of SR 161 traffic counts at the northern and southern limits of the study area. Volume capacity ratios, as computed from 1980 data, range from .85 upward, indicating traffic conditions which impede the flow of traffic and foster high accident rates. Year-to-year traffic counts show considerable variation due, in part, to periods of gasoline shortages. However, the long-term growth trend since 1968 is comparable to that of land subdivision activity (Table 2) and land use changes (Table 3). In Table 2, platting activity within one mile of SR 161 (12 square miles) is tabulated separately from the total (36 square mile) study area. Except for 1969, when 12 plats totaling 149.42 acres and containing 433 lots were filed, the bulk of platting activity has occurred since 1973 when the SR 512 freeway from McChord Air Force Base to Puyallup was completed.

The South Hill Comprehensive Plan anticipates an annual population increase of 5.25 percent as projected by the Puget Sound Council of Governments. These projections were made prior to the recent sharp declines in employment in the area and so population growth may not increase at that rate. Nevertheless, the South Hill area will continue to grow. As a new growth area, the proportion of young adults in comparison with elderly persons is much higher than average. As a result the number of births in the area will exceed the number of deaths. Thus, the area will continue to grow even if the flow of incoming residents were to terminate.

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[1] The South Hill Comprehensive Plan. Pierce County Planning Department, Tacoma, 1981.

Moreover, the opening of the new Fairchild Camera plant (see Figure 3) with its anticipated employment of 3,900 persons will support continued growth. Most of the jobs there will be at the minimum wage and workers more likely will be recruited from Puyallup and other valley communities, rather than from the more affluent South Hill. Nevertheless, employment at Fairchild will help stabilize the overall economy of the area. Therefore, continued growth should be expected from South Hill, though perhaps at a somewhat slower annual rate than previously anticipated.

TABLE 1. ESTIMATED AVERAGE DAILY TRAFFIC VOLUME, SR 161
Mileposts 18.21 and 25.65, 1962 to 1981

Milepost 18.21				Milepost 25.65			
		Annual Change				Annual Change	
Year	ADT	Number	Percent	Year	ADT	Number	Percent
1962	2,050	400	24.2	1962	6,700	100	1.5
1963	2,150	100	4.9	1963	6,500	-200	-3.0
1964	2,300	150	7.0	1964	6,600	100	1.5
1965	2,650	350	15.2	1965	6,500	-100	-1.5
1966	2,700	50	1.9	1966	6,700	200	3.0
1967	2,900	200	7.4	1967	7,100	400	6.0
1968	3,150	250	8.6	1968	7,600	500	7.0
1969	3,850	700	22.2	1969	9,300	700	22.4
1970	3,250	-600	-15.6	1970	11,200	1,100	20.4
1971	3,650	400	12.3	1971	11,600	400	4.5
1972	3,950	300	8.2	1972	12,700	1,100	9.5
1973	4,500	550	13.9	1973	13,900	1,200	9.4
1974	4,300	-200	-4.4	1974	13,500	-400	-2.9
1975	4,500	200	4.7	1975	15,000	1,500	11.1
1976	4,850	350	7.8	1976	15,800	800	5.3
1977	5,100	250	5.2	1977	16,600	800	5.3
1978	5,400	300	5.9	1978	17,400	800	4.8
1979	7,100	1,700	31.5	1979	21,900	4,500	25.9
1980	7,500	400	5.6	1980	22,000	100	0.5
1981	7,900	400	5.3	1981	23,300	1,300	5.9
1961-81	6,250			1961-81	16,700		
Net change factor	3.8			Net change factor	2.5		

Source: WSDOT Annual Traffic Reports

Development Policies and Growth Management

Pierce County has maintained a planning staff for nearly 30 years. However, the county does not yet have a county-wide comprehensive plan and specific area plans have been adopted for only a small portion of the total county. Under the County Zoning Ordinance all of South Hill is within a "General Use District" in which there are few restrictions on the use of land. SR 161 is a classic example of a highway unprotected by effective land use controls.

TABLE 2. RESIDENTIAL PLATTING ACTIVITY, SR 161/SOUTH HILL AREA
1962 to 1981

Within One Mile				Total Study Area			
Year	Plats	Acres	Lots	Year	Plats	Acres	Lots
1962	0	--	--	1962	2	14.66	34
1963	2	5.87	18	1963	5	34.36	102
1964	2	14.79	37	1964	5	52.76	118
1965	1	5.00	14	1965	9	80.16	155
1966	1	10.00	24	1966	3	34.50	69
1967	1	24.89	24	1967	1	24.89	24
1968	1	10.30	24	1968	6	55.93	110
1969	7	68.90	196	1969	12	149.70	443
1970	3	15.81	54	1970	6	65.46	190
1971	3	21.60	66	1971	10	92.03	232
1972	--	--	--	1972	3	21.22	79
1973	5	40.56	106	1973	7	48.13	121
1974	1	3.50	12	1974	5	38.82	108
1975	1	4.66	16	1975	3	11.84	41
1976	8	45.35	102	1976	9	52.68	122
1977	6	52.26	127	1977	9	105.07	269
1978	6	82.34	203	1978	10	121.23	274
1979	6	48.94	108	1979	13	140.36	341
1980	4	56.82	169	1980	10	236.93	626
1981	3	25.24	42	1981	13	198.02	503
Total	62	545.63	1,353	Total	144	1,598.77	3,996

Source: Pierce County Planning Department

Since the opening of SR 512 in December 1973, which provided a direct connection for SR 161 to the Puget Sound Region's freeway network, traffic generating land uses have proliferated. Nearly all the available land has been developed from 110th Street East, on the north, to 128th Street East. From 128th south to 160th more than half of the land adjacent to SR 161 has been developed for commercial use. Considerable commercial development is also found from 160th South to 176th. The data in Table 3 set forth the extent of new development since 1973.

TABLE 3. NUMBER OF NON-RESIDENTIAL ESTABLISHMENTS WITH FRONTAGE ON SR 161, BY TYPE OF USE, 1973 AND 1982

Type of Land Use	1973	1982
Retail Sales	1	53
Furniture and Appliances	0	6
Food Stores	2	12
Restaurants/Taverns	1	17
Repair Services	0	5
Personal Services	1	9
Business Services	0	11
Medical and Professional Offices	0	36
Business Offices	1	25
Banks and Savings Institutions	0	7
Schools, Public and Private	1	3
Auto Services	5	13
Mobile Home Sales	0	4
Misc. Industrial, Commercial	3	9
Churches	0	2
Total	15	212

SOURCE: WSDOT Field Surveys

In 1980, the voters of Pierce County adopted a new county charter which among other provisions mandated the preparation of a County Comprehensive Plan. This occurred after county planners had initiated preparation of the plan for South Hill. The result has been to delay final consideration of the South Hill Plan pending completion and adoption of the county-wide comprehensive plan.

The land use element of the plan proposes the establishment of four general environmental districts -- urban, suburban, rural and conservancy. Performance standards govern the location of a wide variety of land use types within each district. This differs from the more traditional approach in which future land use is proposed for specifically delineated areas (or districts) for each land use class.

The proposed plan provides much greater locational opportunities for the development of any particular type of land use. Reliance on performance standards rather than on land use differentiation becomes the basis for obtaining a quality environment. Performance standards are not specified within the plan. However, plan objectives provide the basis for such standards which are to be incorporated into subsequent implementing legislation by Pierce County.

The circulation element of the proposed Plan, includes a number of goals and objectives directly related to SR 161 including the following:

A. Encourage the clustering of urban activities into "activity nodes" located at intersections specified in the South Hill Comprehensive Land Use Plan.

B. Develop a circulation system which discourages strip development and provides safe travel for the length of arterial corridors.

Under this approach developers must provide all the public improvements, i.e., off-street parking, water and sewer facilities, etc., and either donate land for future schools and parks or pay a fee in lieu thereof. Development fees for street and highway improvements are not anticipated.[2] Improvements to the intersections of SR 161 with county roads are essentially the same as those planned by WSDOT.

If the Plan, along with its implementing legislation, is adopted by Pierce County, what difference will it make? Will future improvement costs be less than what will be imposed on WSDOT if no plan is adopted? Consideration must be given to whether or not the new land use controls will be enforced or relaxed in response to development pressures as has been the case in many other jurisdictions. In theory,

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[2]Interview with Dan Hardin, Project Planner, Pierce County Planning Department, Tacoma, January 1982.

at least, performance standards with greater locational opportunities will provide developers with sufficient flexibility without relaxation of the standards. Further, growth pressures can be kept under control as new development accommodates population increases.

Assuming Pierce County does not relax the performance standards, how will future development along SR 161 differ from what has taken place so far and would otherwise continue in the existing pattern? If the implementing standards are applied only a very few additional road approach permits would be requested from WSDOT by developers. Additional traffic generating commercial uses would be limited to selected activity nodes at the SR 161 intersection with 112th Street East, 120th Street East, 128th Street East and in the vicinity of Thun Field, from 160th to 176th Streets East (see Figure 2). Even at these locations developers may not be entitled to indiscriminate access to SR 161 and WSDOT will have a stronger position in dealing with applications for road approach permits for commercial development.

WSDOT Plans

Before the development of the South Hill Area, SR 161 served primarily as a long distance travel facility. Nearly all trips were either between the population centers of the Puget Sound Region and Mount Rainier National Park, or intercity travel to or from any one of the small communities located along the route. By 1969, substantial land subdivision with residential housing development was beginning to occur. These developments depended on SR 161 to provide arterial access to nearby employment centers. Prior to 1974, there were only a few commercial establishments requiring direct access from SR 161. Since that year both commercial development on abutting properties and new residential subdivisions in the area have resulted in increased traffic demands on SR 161.

By now most of the traffic on that route is either generated by abutting commercial development, or results from the area's internal circulation. Very little consists of travel on longer distance trips. The fact that SR 161 now serves a predominantly local function has no bearing on its designation as a state highway nor on the continuing responsibility of WSDOT to maintain that route. Today,

traffic on SR 161 has reached the point where serious capacity deficiencies impede all the many functions which that route must serve.

Plans prepared by WSDOT call for the widening of SR 161 from 176th Street East to 152nd Street East.[3] The two-lane facility would be widened to provide a two-way left turn lane. Left-turn channelization would be added at 172nd, 160th, 152nd and the Pierce County Airport (Thun Field) entrance with traffic signals at 160th and 152nd. North of 152nd to SR 512 the existing two-lane facility would be widened to four moving lanes plus a central two-way left-turn lane with left turn channelization at 152nd, and 144th. Signals are to be added at 120th, 116th and 144th and signal phasing (interconnecting) providing a means for improving traffic flow. Cost estimates in the report for all these improvements totaled $7,572,000. Of this amount, $442,450 has been budgeted in the 1981-83 biennium for improvements to the intersection at 176th and for street widening and intersection improvements between 112th Street East and SR 512.

These improvements, now committed, represent only a small proportion of those required to correct the severe capacity deficiencies. Beyond the current biennium (1982-83) further improvement to SR 161 through the study area are not yet included in the WSDOT Six-year Highway Construction Program. It is not that conditions do not support a high priority for funding but rather the limited funds available statewide are not adequate to finance all the needed projects.

Effectiveness of Land Use Controls

Pierce County ordinances include a building code and land subdivision regulations. However, land use controls for the South Hill area have not dealt with changes in land use. Some control has been exercised through the environmental review (EIS) process in the issuance of building permits.

In spite of the mandate for planning from the voters of Pierce County, strong local opposition to land use controls in the South Hill area has delayed adoption of an area plan. This casts doubt on any improvment in the effectiveness of land use controls as a means of protecting the state's interest in SR 161.

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[3]Route Analysis, SR 161, 176th Street East to SR 512, Washington State Department of Transportation, Olympia, June 1981.

Location of the Fairchild Camera Company plant on North Hill raises the entire question of economic growth and resulting impacts on transportation. The Washington State Legislature set the policy for industrial development with passage of House Concurrent Resolution No. 17 in March 1981 (see Appendix C). This legislation applied specifically to the two electronics manufacturing plants considering development locations in the state at that time -- one by Hewlett-Packard near Marysville and the other by Fairchild Camera on South Hill. It specifically resolved that "...The 1982 regular session of the legislature will take appropriate action, including provision of funds, to assist on a fair share basis, Snohomish and Pierce counties and the electronics companies, in providing the necessary public service improvements to ensure the location of these companies." It was further resolved to provide funding for necessary improvements to roads identified in the impact area dropping below level of service "D" as defined by WSDOT. SR 161 from SR 512 to 110th Street East is part of a major access route to the Fairchild plant. This resolution has led to the execution of a three-party agreement among the City of Puyallup, Fairchild Camera and WSDOT for the development of improved access to the plant site.

Developer Participation

The EIS process has provided local units of government with an added tool for land use control. In Pierce County applications for major commercial development and land subdivision have required preparation and review of Environmental Impact Statements. The county has used this procedure to improve the quality of development by requiring mitigation of adverse impacts as a condition of approval.

Through coordination with WSDOT District 3, these impact mitigations have been extended to include intersection channelization and traffic control lights on SR 161 at 128th Street East as a condition of granting building permits for a major shopping center. While beneficial, the cumulative traffic impacts on SR 161, including a serious capacity deficiency, have not been mitigated by this process.

This environmental review process led to a three-way agreement between Pierce County, WSDOT and developers of the major shopping center at the north-east corner of 120th Street East and SR 161. Since he was required by Pierce County to mitigate the adverse traffic impacts, the developer agreed to pay for intersection

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channelization and traffic control signals as a condition of building permit approvals. The agreement (6-13-80) provided for developer contributions to the cost of improvements totaling $96,000.

Following the execution of this agreement, the developer of land on the west side of SR 161 at the same intersection entered into the same procedure. A similar agreement was negotiated (10-19-81) between WSDOT and the second developer. The agreement calls for the developer to (a) design, prepare plans and specifications, and construct a portion of 120th Street East, (b) provide a standard intersection containing left turn channelization to be located on the west side of State Route 161 at milepost 24.74, (c) modify the existing traffic control signal system at the same location, and (d) revise striping on SR 161, northbound, to provide left turn channelization to 120th Street East.

Modification of the existing traffic control signal system involves installation of new signal heads and of pavement sensors to provide stop and go signals for traffic entering the intersection from the west. Had the two agreements been negotiated concurrently the second developer's costs might have included a proportionate share of the entire signal system rather than just its modification. In this situation the latecomer profited.

A third developer, owning property on the southeast quadrant of the intersection, was not faced with the same requirements since the necessary permits were issued prior to initiation of any impact mitigation policy. Although that property will benefit from the improvements and generate traffic impacts on the intersection the state and county have no means to require the developer to provide needed addition right-of-way or to participate in the improvement costs.

Summary of Findings

Pierce County has exercised few land use controls in the rapidly growing South Hill area. The county has initiated a planning program in the area and coordinated planning efforts with WSDOT have been initiated.

Cooperation between Pierce County and WSDOT in the EIS process provides for developer participation in the financing of highway improvements which serve to alleviate somewhat the traffic impacts of new commercial development. For the most part these improvements have been limited to intersection channelization and traffic signals which have provided the benefits of improved access to developers' adjacent properties. Although this practice has been effective, inequities in its application have occurred. Further, the potential traffic impacts resulting from large residential subdivisions have not been mitigated.

2. SNOHOMISH COUNTY/SR 527

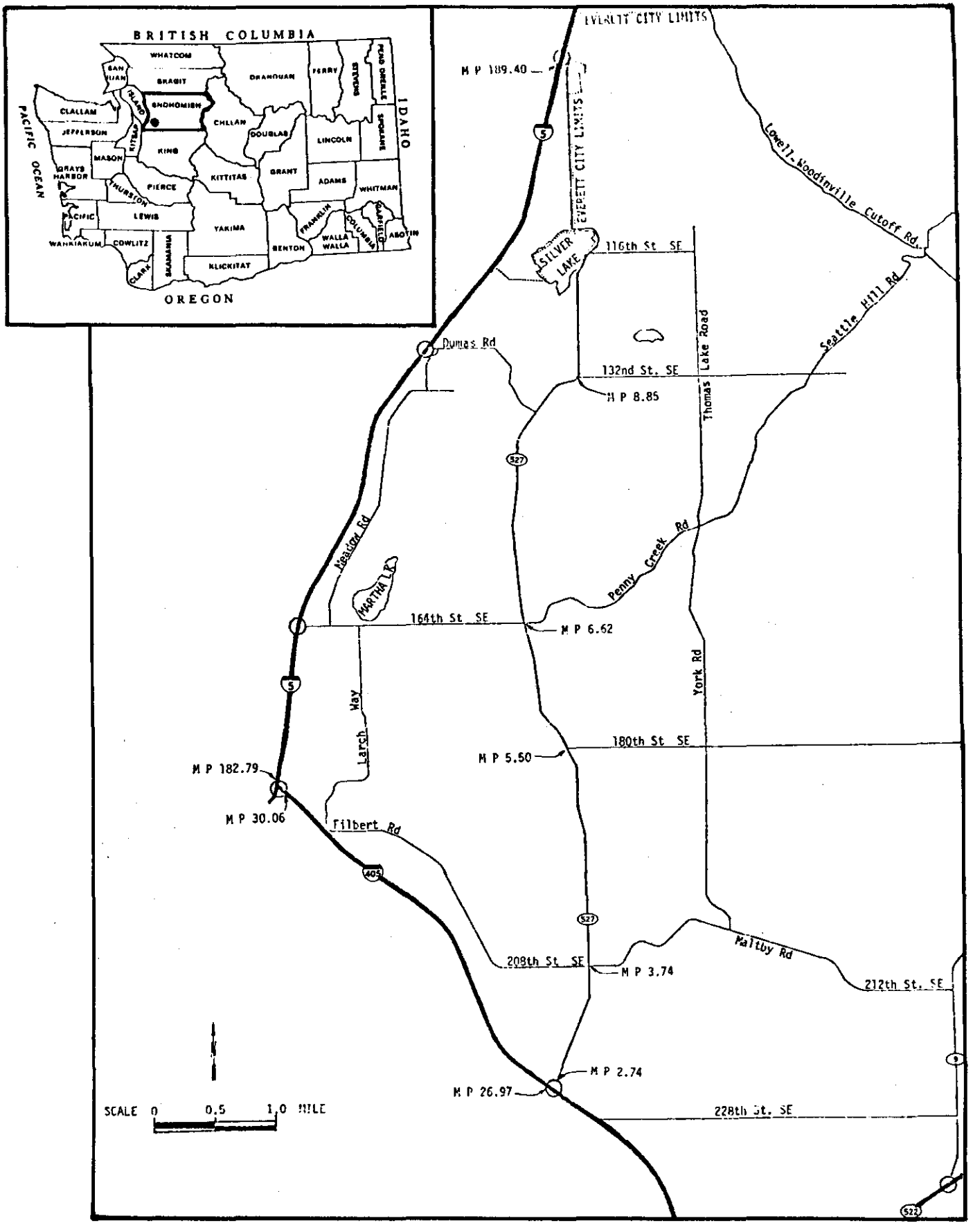
The North Creek area of Snohomish County was selected as a control area for comparison with South Hill. In many ways the two areas are similar in terms of the type and rate of urbanization and the functions of the state highways that serve them.

The study area is located directly south of the Snohomish County seat of Everett, some 20 miles northeasterly from downtown Seattle via interstate route I-5 and 12.4 miles northerly from Bellevue by way of I-405. For this report the area corresponds to the North Creek Planning Area as delineated by Snohomish County. Major roads and highways form much of its boundaries including I-405 to the southwest, I-5 to the northwest, a short section of the SR 522 freeway to the southwest, SR 9 to the east and the Lowell-Woodinville Cutoff Road to the northeast (see Figure 3).

Background

Like much of the gentle hilly terrain of the Puget Sound Region, North Creek was originally timberland where logging rather than farming was the major economic activity. Only since the turn of the century when the forests were depleted has there been significant settlement of the land. Proximity to Seattle and Everett led to its transformation to a suburban character with most residents employed in the city and with farming only a part-time activity. Larger agricultural enterprises were located on more productive river bottom land elsewhere in Snohomish and King Counties.

FIGURE 3. SNOHOMISH COUNTY/SR 527



The North Creek area has grown over a much longer period of time than the other growth area in this study. The rate of growth has increased dramatically as development has spread out from Seattle. Construction of the Boeing Everett Plant, a few miles to the northwest, stimulated an even greater demand for housing at near urban densities. Housing, in turn, creates new demands for neighborhood serving commercial development. Current economic conditions have not discouraged developers some of whom have attracted foreign investments not hampered by the present high interest rates in this country.

As stated in the comprehensive plan for North Creek,[4] the area has a number of characteristics which attract new residents including:

Close proximity to employment centers
Provision of major transportation facilities
Scenic amenities
Moderately priced undeveloped land areas
Availability of utilities and public services

The plan, adopted by the County in 1977, predicts a future population of 48,300 by 1990, approximately twice that of 1976. The plan also anticipates a moderate growth rate in the years 1982 through 1986 followed by a second period of accelerated growth. From the 1976 estimated population of 24,000 growth continued to 1980 when population exceeded 30,000.

SR 527 is the only north-south arterial which bisects the area. As a result it not only provides for internal circulation but the major proportion of traffic to and from the outside depends on SR 527. The only exceptions are those portions of the area immediately adjacent to the perimeter highways and the extreme easterly portion which is relatively undeveloped.

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[4]North Creek Comprehensive Plan, Snohomish County Planning Department, Everett, December 1977.

SR 527 enters the North Creek area at its interchange with I-405, continues northerly, through the area, to the Everett city limits (see Figure 3). I-405 was opened for traffic north from the SR 522 intersection in 1969. Traffic counts, 1970 through 1981, for the three highways at selected intersections are tabulated in Table 4. Increases in traffic volume over the years generally correspond to area population growth. However, traffic through the northern portion (from 164th Street to 132nd Street) remains much lower than elsewhere.

Over the years a number of commercial establishments have located on properties fronting on SR 527. With a few exceptions these are located at specific nodal points separated by farm lands and other open space. The area includes a subregional shopping center, with future plans for substantial expansion as a business park and a relatively large, 160 unit, condominium development.

Snohomish County Planning Program

Snohomish County organized its planning program more than twenty-five years ago. Considerable emphasis was given to the southwestern portion of the county most susceptible to the expanding growth pressures from Seattle. Particular attention to the North Creek area during the early 1970's culminated in the adoption of the comprehensive plan for that area in May 1977.

The plan follows a general philosophy of controlling the anticipated population growth. Specifically, controlled growth ". . . is assumed to be the accommodation of that share of the new population base which might logically be anticipated given the area's particular magnetic attributes." Further, the plan is based on the premise that the increased population can be accommodated without substantially changing the character of the area. The objectives of the plan are formed on the techniques of growth and environmental management which assure preservation of that character. These include directing growth to portions of the area which are able to provide essential transportation and other public facilities and services.

TABLE 4. AVERAGE DAILY TRAFFIC VOLUME AT SELECTED STATIONS 1970 to 1981

SR 527

Intersection:	I-405	208th St	164th St	132nd St
Leg:	North	North	North	South
Milepost:	2.74	3.74	6.62	8.85
Year				
1970	5,500	4,500	3,100	2,300
1971	5,200	4,050	2,350	3,700
1972	5,300	4,150	2,150	3,700
1973	6,100	4,650	2,600	4,500
1974	5,900	4,500	2,400	4,350
1975	7,600	5,600	4,350	NA
1976	8,100	6,000	5,100	NA
1977	8,600	6,400	4,200	NA
1978	11,800	9,000	4,400	4,700
1979	12,500	9,900	5,000	4,600
1980	12,900	10,800	5,400	4,500
1981	13,600	11,500	5,700	4,700

I-5

Intersection:	I-405	SR526/527
Leg:	North	Northeast
Milepost:	182.79	189.40
Year		
1970	NA	32,100
1971	54,100	33,700
1972	54,800	34,700
1973	54,900	36,400
1974	51,600	34,200
1975	55,500	37,100
1976	63,600	50,100
1977	67,300	53,100
1978	75,100	57,200
1979	77,300	58,900
1980	76,800	58,500
1981	82,700	63,500

I-405

Intersection:	SR527
Leg:	North
Milepost:	26.97
Year	
1970	11,500
1971	15,800
1972	16,500
1973	20,400
1974	19,700
1975	21,900
1976	22,700
1977	24,700
1978	30,400
1979	30,700
1980	32,800
1981	36,900

Of particular relevance to this study is the summary objectives for the goal of a Balanced Land Use Mixture:

> "In order to prevent problems resulting from excessive traffic volumes, inadequate sanitary facilities, over-crowded schools, or inadequate public safety protection, all urban land uses which are to be located within planning areas should occur in a manner consistent with the willingness and ability of the County, the state and special use districts to provide services including streets, public utilities, schools, police and fire protection."

Snohomish County has advanced the concept of growth management.[5] The plan anticipates the inability of state and local government to provide facilities required to accommodate the immigration of new population. As a result of growth exceeding the county's accommodation capability more stringent growth management policies were initiated in 1979. Among these was the adoption of Ordinance No. 79-143, Title 26-(b), Snohomish County Code, Developer Contribution for Road Purposes as a Condition of Land Use Approval.

Developer Participation in Road and Highway Financing

One controversial provision of this ordinance has been the requirement that developers must pay for a consultant prepared traffic analysis which would predict the traffic ultimately generated by the proposed development and determine the road improvements necessary to accommodate the additional traffic. The cost of such traffic studies effectively excluded all but the very large developments from consideration.

In some cases of land subdivision, where the improvements may not be needed until some future date, as an alternative the developer may be required to provide an agreement not to protest formation of a road improvement district (RID). If immediate formation of a RID is required, the county must have adopted a resolution creating the RID before the proposed subdivision may be recorded.

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[5]Snohomish County Management Strategy. Snohomish County Office of Community Planning. Everett, Washington, 1981.

Enforcement of the ordinance on small developments proved to be difficult. As a result, the ordinance was amended in May 1980 to provide for the payment of fees as an alternative to direct provision of needed road improvements. In this way improvements required as the result of cumulative traffic increases induced by a number of small developments could be constructed by the county. The amendment was considered to be temporary in nature and expired at the end of one year. Subsequent action by the 1982 Legislature (Chapter 49, Laws of 1982, First Extraordinary Session, 47th Legislature E.S.B. 4972) established rules for developer participation agreements for financing public improvements. The act permits voluntary agreements for ". . . a payment in lieu of a dedication of land or to mitigate a direct impact that has been identified as a consequence of a proposed development, subdivision or plat." In effect, Snohomish County can no longer charge a fee as an alternative to a negotiated determination of impact mitigation. The problem of mitigating the cumulative impacts of several smaller development remains unresolved.

The provisions of 26-(b) apply only to county roads. In fact, the ordinance requires improvements be made in order to accommodate the traffic generated from the development to available adequate transportation facilities. Adequate transportation facilities are defined as the nearest state highway or highways. However, by law (RCW 36.88) county roads may include intersections with state highways. Accordingly, such improvements as intersection traffic signals, turning lanes and channelization have been provided at a few intersections under the provisions of 26-b. Further, the county has applied the EIS process to require developers to negotiate with WSDOT when development induced traffic will impact the operating efficiency of SR 527. As a result, several participation agreements have been executed with WSDOT by developers of commercial properties.

The relative success of District 1 in the developer participation method of financing has not been totally free of difficulty. In cases where additional right-of-way is needed, the legal authority for WSDOT to obtain voluntary dedications of rights-of-way has been questioned. Land titles obtained in this manner may be subject to future legal challenge. The county clearly has such authority. Generally in such cases it is more appropriate for the county to make the necessary improvements. This precludes the option of the developer's contractor doing the work in conjunction with a larger improvement project.

Obtaining equitable contributions from several developers has also been a problem. For example, much needed improvements at the intersection of SR 527 and 180th Street S.E. were delayed by the difficulty in obtaining agreements with all of the ten developers whose projects will result in further complicating an already capacity deficient highway segment. Some developers are more anxious than others to see the highway improved and are willing to pay their share. Putting together a total package in which all developers agree is an extremely difficult task for District personnel. In this case, through the initiative and cooperation of the county, agreements for the needed rights-of-way and contributions totaling $140,000 were obtained and the necessary improvements made.

The issue of equity is a complex one. Traditionally, it has been assumed that as new highway improvements are required it is the state's responsibility to provide them. The idea of developer's responsibility is somewhat new and not fully accepted. Attempts to impose this new principle in Snohomish County have not fully resolved the issue of equity. Hopefully the county's growth management program will include a reasonably equitable fee schedule. Without the authority to participate directly in the county's financing, use of developer participation as a means of financing state highway improvements by WSDOT will be vulnerable to charges of inequity.

Through the support given by Snohomish County to the interests of WSDOT, a consistent standard of developer responsibility is being established and improvements to state highways have been made. While the question of equity may not ever be resolved fully, over time such a consistent application of policy will help reduce the number and severity of the inequities that do occur.

WSDOT Plans for SR 527

The 1981-1987 Highway Construction Program for WSDOT includes five separate projects for SR 527 within the North Creek area. These call for a variety of improvements to a total of 5.84 miles at an overall cost of $1,677,142.

The ultimate plan of WSDOT is to make SR 527 a four-lane highway with an additional two-way left-turn lane all the way from I-405 to I-5 (milepost 2.69 to 11.89).[6] North of the study area, from the Everett city limits to I-5 (milepost 10.32 to 11.79), the city of Everett has reconstructed the highway to that five-lane configuration. The city's project was financed with an Urban Arterial Board (UAB) grant of $1,403,334 and local participation amounting to $176,552. The WSDOT 1981-1983 Operating Budget also includes $96,000 for completion of improvements to this segment of SR 527.

Now that traffic volumes often exceed that highway's capacity each new commercial establishment or residential subdivision in the area further increases the problem. Implementation of the improvements planned by WSDOT will only extend the time before SR 527 can no longer function efficiently. Development of new county arterials, and systematically spaced commercial centers, not requiring access by way of SR 527, offer a possible long-term solution to highway capacity problems.

Summary of Findings

The capacity deficiency problems of SR 527 have not been abated and will continue to worsen, unless significant changes in both state and local policies are modified. The following illustrates the situation:

1. The county ordinance requires developers to pay for improvements (necessary in order to accommodate the traffic generated) from the development to "...available adequate transportation facilities," defined as the state highway. This will encourage developers to seek direct access to SR 527 and will increase, not decrease, the number of high volume access points which ultimately must be controlled by traffic signals and channelization.

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[6]Evaluation of Proposed Category C Projects by Non-Engineering Criteria, Washington State Department of Transportation, Olympia, September 1981 (unpublished).

2. The Comprehensive Plan for North Creek contemplates commercial development at selected activity nodes spaced at selected intervals along SR 527. The WSDOT plans for future improvements to SR 527 call for a configuration of four moving traffic lanes plus a fifth central lane to accommodate left-turn movements along the entire route. This is not cost-effective if left turns are primarily essential at the relatively few locations designated in the county's plans. Further, it increases demands for commerical zoning between the designated nodes.

3. The county's comprehensive plan does not make specific provisions for new major arterials which will provide alternative routes for traffic otherwise destined to go by way of SR 527, and

4. Continued growth to full development, as contemplated in the plan, and reconstruction of SR 527, as planned by WSDOT, will find that route still suffering from greater capacity deficiencies than today. At that point, alternatives for any further increases in capacity will be extremely limited and not cost-effective. Also, by that time, relocation of the route through relatively undeveloped land will not be an available alternative.

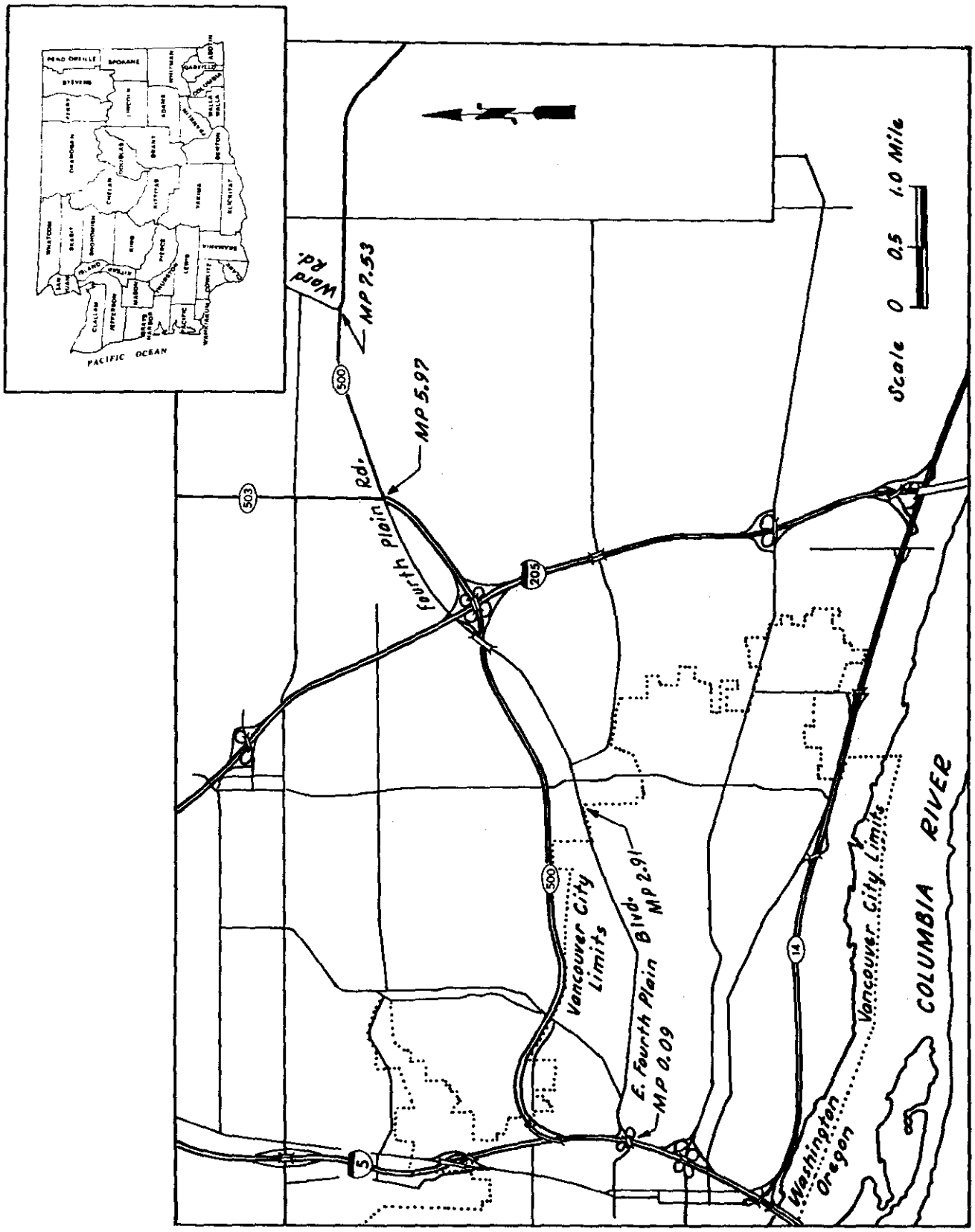
3. VANCOUVER-CLARK COUNTY/SR 500

Background

SR 500 serves an area in many ways similar to the previous two case study areas. All three demonstrate a typical urban expansion out from a metropolitan center. However, rapid growth in Clark County northeast from Vancouver began nearly ten years earlier. Vancouver is located across the Columbia River and some eight miles north of downtown Portland, Oregon, the metropolitan center (see Figure 4).

Like the South Hill area of Pierce County, the initial period of rapid growth was not restricted by effective land use controls. Although much of the area is already fully developed, a second phase of urban expansion has now been initiated.

FIGURE 4. VANCOUVER - CLARK COUNTY/SR 500



Clark County, which is located directly north of the Columbia River, is growing at the highest rate of any of the four counties in the Portland-Vancouver Standard Metropolitan Statistical Area (SMSA). The county's population increased 56 percent from 126,446 in 1970 to 192,227 in 1980. The entire SMSA increased 24 percent during the same period, while Vancouver had less than a 3 percent change, from 41,859 to 42,834. Most of the urban expansion during that period in Clark County has been outside of Vancouver in an area served by Fourth Plain Boulevard, then SR 500. Urban expansion began much earlier here in comparison with the other study areas.

By 1970, commercial development relatively unimpaired by local land use controls, along with surrounding residential growth, contributed to severe traffic congestion. Increases in traffic volume over the years have been commensurate with population growth (see Table 5). Annual increases in the volume capacity ratio gave improvements to SR 500 a high priority. At this period WSDOT has sufficient resources to include reconstruction of SR 500. Accordingly, planning for this improvement proceeded and construction is now under way. Although the highway was originally designed to freeway standards, limited resources have forced redesign permitting controlled access, with at-grade intersections.

Upon completion SR 500 will by-pass the traffic congestion on Fourth Plain Boulevard. Among the benefits derived will be improved accessibility to properties abutting SR 500 and SR 503 east and north of the end-of-construction point (see Figure 4). Completion of a new Interstate Bridge over the Columbia River to Portland (I-205) will also increase pressure for development of the properties served by SR 500 and SR 503.

Cooperation between Clark County and WSDOT at the staff level has fostered WSDOT interests in the EIS process. However, this has led to few WSDOT developer participation agreements. Ramps between I-205 and Fourth Plain Boulevard were financed by the county by construction bonds sold to the developer of a regional shopping center.

TABLE 5. AVERAGE DAILY TRAFFIC VOLUME AT SELECTED STATIONS
SR 500, 1968 to 1981

Intersection:	I-5	NE 66th Ave.	SR 503
Leg:	East	East	Northeast
Milepost:	.09	2.91	5.97
Year			
1967	14,700	12,100	4,100
1968	17,800	12,800	4,450
1969	18,200	13,400	4,750
1970	18,500	14,000	5,800
1971	18,800	14,300	6,200
1972	20,900	15,900	7,300
1973	23,200	16,700	8,400
1974	22,500	16,200	8,000
1975	22,700	16,700	8,700
1976	24,500	20,400	10,400
1977	25,700	21,700	12,200
1978	27,100	22,700	13,200
1979	27,200*	23,000	14,100
1980	27,200	23,400	13,700*
1981	28,800	24,800	14,400

*Actual counts

SOURCE: WSDOT Annual Traffic Reports

WSDOT Plans

Plans have been developed for improvement of SR 500 from SR 503 (milepost 5.96) to Ward Road (milepost 7.53) and of 503 north from SR 500 (milepost 0.00 to 0.76). The Highway Construction Program includes some funds for widening and channelization, but these will not be sufficient to implement the plans.

Summary of Findings

Given the current limitations on highway construction funds financing construction of another by-pass highway is not a reasonable alternative. Some commercial zoning has already been granted to properties on SR 503. Thus obtaining developer participation in improvement financing through the EIS process will be difficult.

Lack of an overall growth management policy and effective land use controls, unless corrected, suggest that SR 500 and SR 503 will experience further capacity deficiencies in the not too distant future. Competition with development of other properties served by I-205 and SR 14 and the current national economic decline will only serve to delay the time when further improvements to SR 500 and SR 503 will be required.

4. CITY OF AUBURN/SR 18

Background

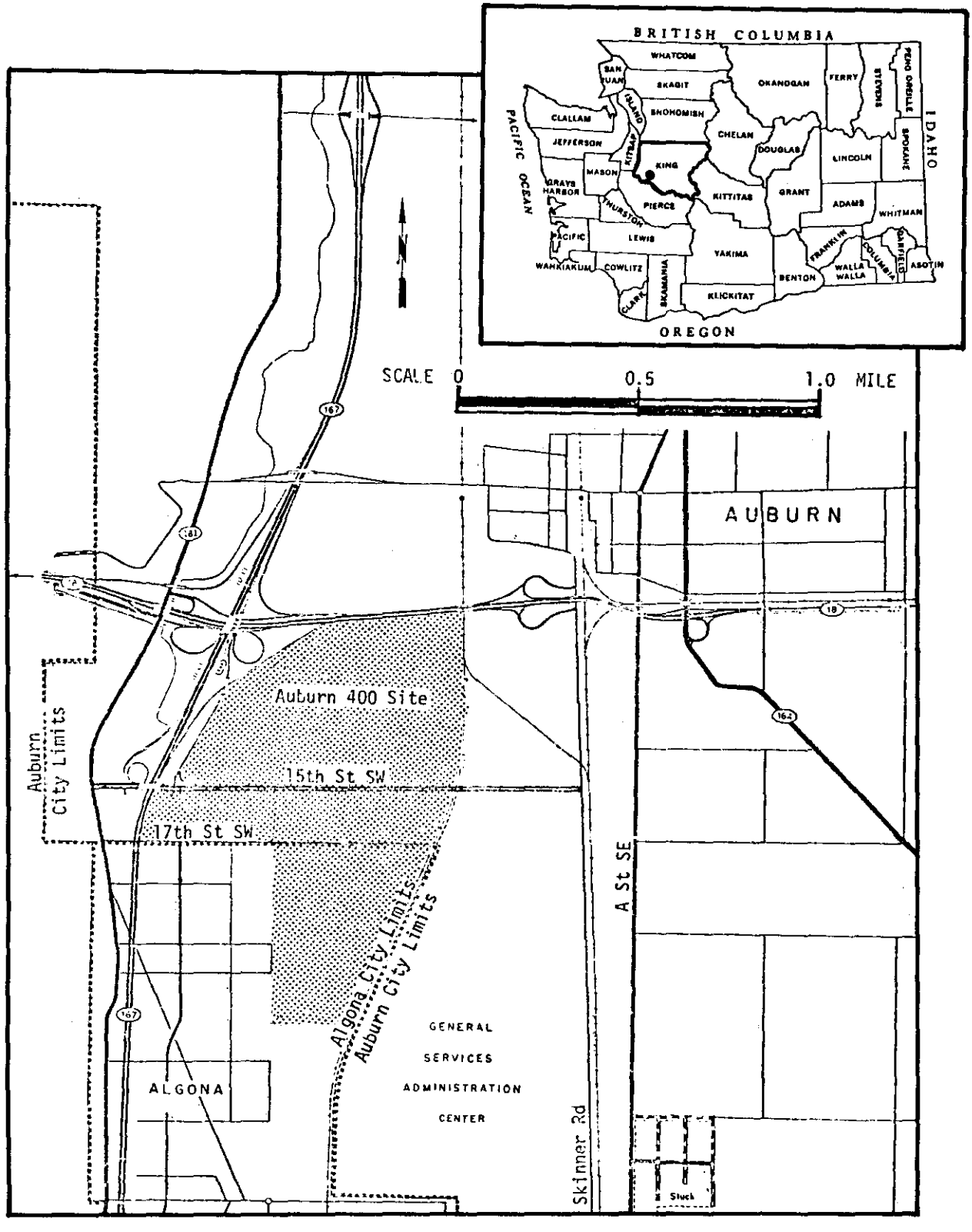
This area was selected in order to investigate a much different situation. It is essentially undeveloped but has a very high development potential. It differs from the preceding study areas in that it lies entirely within the incorporated limits of two municipalities. Also, in this case the conflict between state and local interests is more pronounced.

The city of Auburn and the smaller adjacent city of Algona are approximately 14 miles northeast of Tacoma, via SR 167, and 21 miles southeasterly of Seattle (see Figure 5). Located on the mainline railroad from Seattle to Portland, which followed the lowland route through the fertile Green River Valley, Auburn became both an agricultural and a railroad center. In recent years, productive farm lands have given way to industrial development attracted by rail and highway services and the availability of large level-land tracts.

SR 18 provides access to interstate routes I-5, 2.7 miles to the west, and to interstate route I-90, 25 miles to the east. SR 18 also provides a cutoff route for traffic from the Tacoma area to I-90. SR 167, north from SR 18, has been completed to freeway standards and provides a direct connection to I-405 at Renton, 12 miles to the north.

Population growth within Auburn, as in the entire area between Seattle and Tacoma, has been much higher than for the state as a whole for the past 20 years. Most new housing has been on the upland plateau to the east rather than on the valley floor. The growth and expansion of industrial development has extended

FIGURE 5. CITY OF AUBURN/SR 18



southward from Renton to Kent where most of the available land has been converted from agricultural to industrial use. This expansion has now reached Auburn but most of the lowland tracts within Algona and Auburn are still vacant. The study area tract of nearly 400 acres is located south of SR 18, and east of SR 167 at the interchange between those two freeways. It is one of the few remaining large tracts of land within the Seattle metropolitan area which remains undeveloped.

In January 1969, the owners of the tract submitted to the city of Auburn a traffic study for the "Auburn 400" development proposed at that time.[7] The development proposal included an industrial park, research center, office buildings, theater, motel, apartment structures and a major regional shopping center, the latter being the principal traffic generator. Based upon anticipated population growth and the addition of other major traffic generators in the area, traffic volume projections totaled 35,234 ADT for the highways in the immediate vicinity of the site.

Subsequently, a major regional shopping center has been opened about 3 miles to the west and ownership of the Auburn 400 tract has been transferred to the Quadrant Corporation, a subsidiary of Weyerhaeuser. Quadrant now proposes to develop the tract with some modification of the earlier proposal for the site. The draft environmental impact statement proposes an office industrial park of 314 acres with the following developements: rail served industrial, 45.4 acres; nonrail industrial, 81.7 acres; office, 122.0 acres; and support commercial, 22.0 acres.

The developer's plans indicate: (a) the addition of a freeway ramp to feed traffic from the northerly portion of the site onto the existing northbound access to SR 167, and (b) use of an existing overpass structure on SR 18 to provide access from the site to westbound SR 18 with connections to northbound SR 167.

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[7] Southwest Auburn Traffic Study, John Graham and Company, Seattle, 1969.

Divergent State and Local Interests

The WSDOT response to the draft EIS is clear. In a letter to the city of Auburn, the District Administrator expresses a number of WSDOT's concerns including:

1. Since the actual traffic counts for 1979 exceed the projected volumes shown in the draft EIS, additional information is needed in order to fully analyze the impacts on the state transportation system.

2. The existing transportation facilities and planned improvements are inadequate to accomodate the additional traffic.

3. Improvements proposed by the developers are not feasible.

The letter specifically states:

"If this project is fully developed, we anticipate severe congestion on our facilities. This congestion may be reduced somewhat by the following actions:

1. We suggest that the analysis of the additional information that we requested will indicate that SR 167 south of 15th Street S.W. will need to be widened to four lanes.

2. Signals will have to be installed on many of the ramp terminals of the SR 167/SR 18/SR 181 15th Street S.W. interchange.

3. Along with the signals, widening and/or lengthening of off-ramps in the aforementioned interchange should be considered.

4. Additional capacity can be gained by the effective use of car/van pools and special transit service programs. A specific upfront commitment should be made by the developer."

Further, the letter of response suggests that the analysis of the additional information requested will indicate that SR 167 south of 15th Street S.W. will need to be widened to four lanes. However, there is no money in the WSDOT six year program to fund such improvements. Therefore, this developer, through the lead agency, should participate in the financing of any program that we may undertake to mitigate the impacts of this project.

The Final Environmental Impact Statement responded to the issues raised in the letter, stating that:

"Additional and more recent data were incorporated into a Supplemental Traffic Assessment provided with the Final Environmental Impact Statement.

The developer will provide transit and/or car/vanpooling incentives.

The Supplemental Traffic Assessment confirms the concerns expressed by WSDOT. However, the developer contends that much of the increased traffic will be generated by other new developments. Responsibility for signalization and some improvements to off ramps is accepted."

The impact on the freeways is considered significant -- an increase of 150 to 190 percent more on SR 167 and 130 percent more on SR 18. The Final Environmental Impact Statement includes the following:

"If all the phases within the Auburn 400 project are developed as presented (i.e., under "probable" conditions), the completed development would generate a maximum of 62,436 daily vehicle trips and a peak hour volume of 11,446 trips....

...Additional mitigating measures that will require action by the state and local government agencies will include improvements to the freeway system and completion of the SR 167/SR 18 interchange (i.e., completion of ramps for all movements).

If these improvements to the freeway system were realized, improvements to the SR 18 eastbound off ramp at West Valley, Peasley Canyon Road and 15th Streets S.W. could be reduced. More importantly, these improvements would benefit existing and future non-Auburn 400 traffic utilizing SR 167 and SR 18. No funds are currently available for improvements, however."

Further discussion was given to the city's commitment to a citywide traffic study. This discussion concluded that when implemented any state and/or city improvements will help mitigate the traffic impacts in and around the Auburn 400 project.

With regard to changes in travel modes and travel patterns, the applicant indicated that they could not guarantee transit and car occupancy rates, but they could work with Metro and the Seattle-King County Commuter Pool to develop cooperative transit and carpooling incentive measures for prospective employers and employees.

From the state's point of view, the commitments to mitigate traffic impacts fails to take care of the improvement to state highways which will be required as the result of the Auburn 400 Development. Implying a state responsibility to "complete" the already completed SR 167/SR 18 interchange and to implement other features of the yet to be completed citywide traffic study does little to resolve the issue. Yet, the two cities approved the developer's application.

Under the state's Environmental Policy Act (RCW 43.21c) the approving agency, in this case the cities of Auburn and Algona, must consider the potential adverse impacts of a proposed action and measures to mitigate them. The word consider is critical. In the case under review, many of the interests of the two cities differ from those of the state. For example, a substantial increase in the local tax base

and the creation of employment opportunities for local residents are real, long-term benefits to the cities as compared with the potential costs of highway improvements which are not a local responsibility. Mitigation of adverse impacts is not mandatory under the law which requires only that consideration be given to the consequences of the proposed action and their possible mitigation.

Developer Participation in Improvement Financing

There is no suggestion that the two cities acted improperly in giving their approval to the proposed development. The purpose is to point out the limitation of the EIS process as a means of obtaining financial support from developers for state highway improvements to mitigate impacts. The city of Auburn has not been totally insensitive to potential traffic impacts. As a condition of approval, the developer will be required to pay for improvements to nearby streets and roadways.

The agreement between the city of Auburn and the developer, executed in October 1981, does not require any "up-front" monies. Instead, developer has agreed, when notified by the city of the need, to initiate, sponsor, execute and submit to the city petitions for the formation of Local Improvement Districts to finance street and roadway facilities including improvement to freeway access ramps. Five intersections of local streets are specified for anticipated improvements.

Reference is made in the agreement to the Final Environmental Impact Statement for more detailed specification of the improvements required to mitigate traffic impacts. With the agreement the developer waives the right to protest the LID projects save only the right to protest the allocation of costs among the various portions of the property.

Another interesting provision of the agreement deals with WSDOT approval for improvements falling within its jurisdiction:

> "It is understood and agreed by the parties that the improvements to ... (two of the five intersections) ... fall at least partially within the jurisdiction of the State of Washington, Department of Transportation,

or its successor agency, and the approval of such agency will be required before such improvements can be made. The City agrees to use its best efforts to secure such approval from such agency, and the Quadrant Corporation (the applicant) agrees to use its best efforts in obtaining such approval. It is further understood and agreed that the improvements to the (two) intersections ... shall be limited to resurfacing, restriping and/or adding additional lanes to the existing ramps on SR 167, as necessary, and shall not include the construction of any new ramps or other roadway structures."

The developer is also required to participate in LID's for areawide improvements. The developer's share of these areawide improvements must be paid even if the city is unable to form the necessary LID's. Even though permits from WSDOT will be required, the state's position is not very strong.

Summary of Findings

Under current practice there is no mechanism for consideration of the state's interests in local land use decisions. The importance of the proposed development to the two cities clearly outweighed consideration of the state's interest in this case. It is only when state and local interests coincide that developer financing of highway improvements can be required in the EIS process. Only further three-party negotiations among the developer the city of Auburn and WSDOT will determine the extent to which financial participation in highway improvements will come from the developer of Auburn 400.

5. SPOKANE COUNTY/SR 27

Background

This study area illustrates the results changes in local land use controls during the course of an area's development.Prior to World War II, US 10 from Spokane to Coeur d'Alene, Idaho, provided a four-lane highway which facilitated the development of several unincorporatedcommunities along the route. Among these, Opportunity, located at the US 10 intersection with Pines Road (SR 27), an important north-south link between Spokane and the Palouse wheat lands and Pullman, 85 miles to the south. (Figure 6.) This development coincides with the growth in traffic over the years (see Table 6).

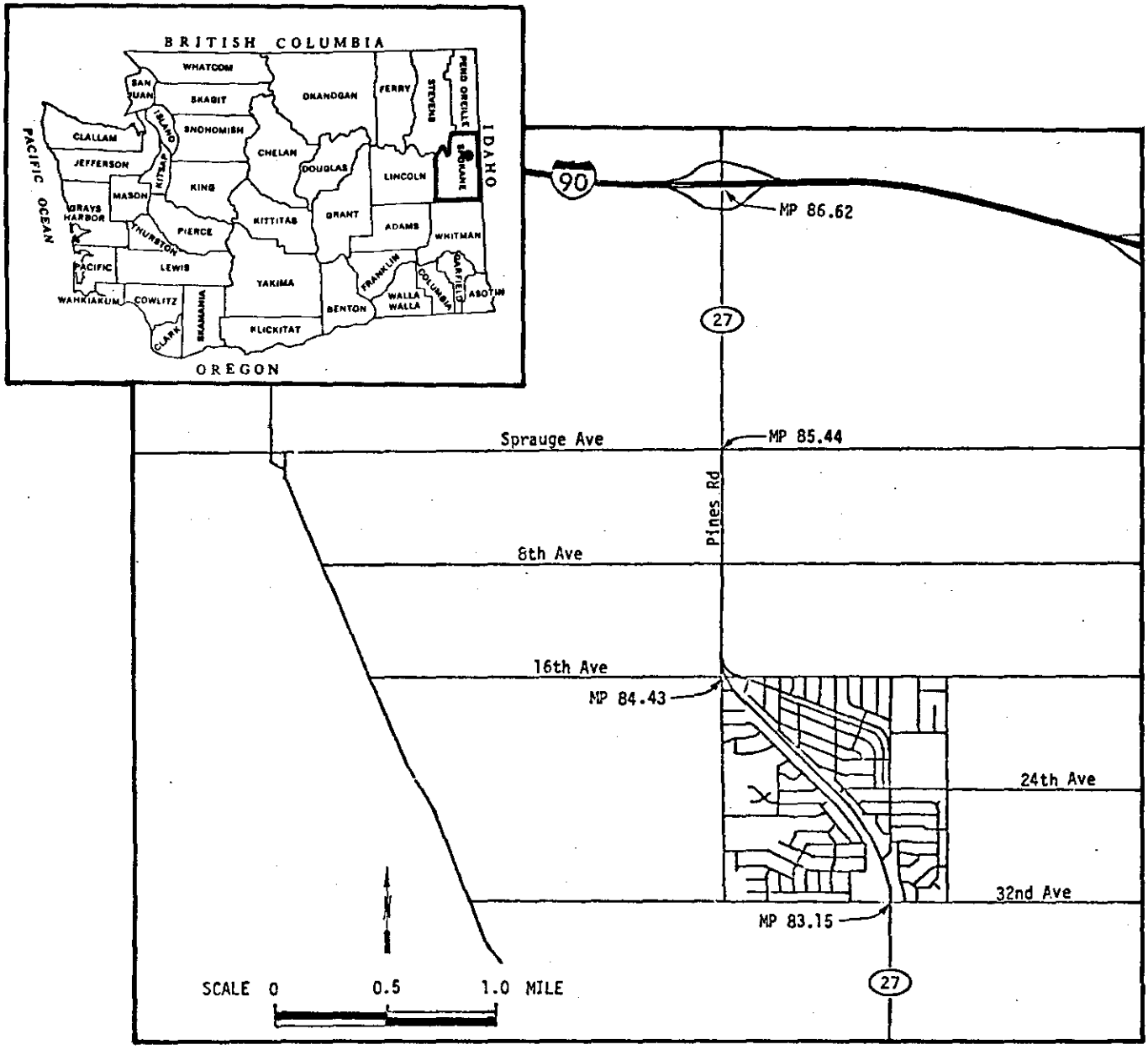
TABLE 6. AVERAGE DAILY TRAFFIC VOLUME AT SELECTED STATIONS
SR 27, 1970-1981

Intersection:	32nd Ave.	Sprague Ave.	I-90
Leg:	North	North	South
Milepost:	83.15	85.44	86.51
Year			
1970	2,000	11,100	12,800
1971	2,000	13,000	14,800
1972	2,250	13,400	15,900
1973	2,650	14,000	16,500
1974	2,800	13,600	16,000
1975	2,700	13,200	15,500
1967	2,950	13,900	16,300
1977	3,250	15,600	18,900
1978	3,400	15,800	20,200
1979	3,450*	15,800*	22,800*
1980	3,550*	6,700	22,900*
1981	3,750	17,600	24,000*

*Actual counts

SOURCE: WSDOT Annual Traffic Reports

FIGURE 6. SPOKANE COUNTY/SR 27



In the post war population boom urban expansion moved out from Spokane into the valley. Opportunity, at a strategic location, fostered considerable expansion of commercial development along Sprague Avenue (US 10) and to a lesser extent on Pines Road (SR 27).

Spokane County initiated a planning program in the early 1950's, a decade prior to the completion of I-90, the interstate freeway which replaced US 10 as the major highway route from Seattle to the midwest. By the time effective land use controls could be implemented, substantial commercial development marked the urban character of SR 27 from Sprague Avenue to the I-90 interchange, one mile to the north.

South of Sprague land use controls played a significant role in limiting the adverse impact of urban growth on SR 27. Unlike many other areas, very little new commercial zoning was granted south of Sprague Avenue. Of greater significance was the subdivision policy. New subdivisions are required to limit access to SR 27 by their design. Thus, SR 27, reconstructed on a new alignment between 16th Avenue and 32nd Avenue, was built to limited access standards without the necessity for WSDOT to condemn access rights from adjacent properties.

Improved accessibility, provided by the freeway interchange, stimulated commercial development along SR 27 north of Sprague Avenue. The combination of the traffic generated by these new commercial developments and that resulting from the residential subdivisions, further south, increased average daily traffic on SR 27 just south of the I-90 interchange from 5,900 in 1963 to 22,900 in 1980.

Signal installations, to increase capacity and reduce congestion, were made at Sprague Avenue in 1973, at Broadway Avenue in 1975, and at 16th Avenue in 1978. Nevertheless, the final mile of SR 27 from Sprague Avenue to I-90 (mileposts 85.44 to 86.63) remains capacity deficient, with severe traffic congestion during peak hour periods.

WSDOT Plans

District 6 has three alternatives for correcting this problem under consideration:[6]

Alternative A provides for widening the existing highway from 32nd to 16th Avenues to four twelve feet wide lanes, with a continuous center left-turn lane between 32nd and 24th Avenue. The existing four traffic lanes between 16th Avenue at I-90 will be widened to four twelve feet wide lanes with a continuous center left-turn lane.

Alternative B is the same as Alternative A except it has two additional traffic lanes from 16th Avenue to I-90.

Alternative C is the same as Alternatives A and B from 32nd to 16th Avenue. Between 16th Avenue and Missouri Avenue a two-way couplet is proposed. Existing Pines Road will become the one-way southbound facility with the northbound facility provided from a combination of existing streets and the construction of connecting roadway sections. Each couplet will have three traffic lanes with a two-way bicycle lane provided on Pines Road only.

The 1981-1987 Highway Construction Program does not include funding for any of these alternatives. However, programmed for 1985 and after are $1,377,500 for the resurfacing of 4.48 miles (milepost 82.15 to milepost 86.63).

Summary of Findings

The SR 27, Pines Road area is unique in that most of the current problem was created by land use control decisions made prior to the improved access provided by the I-90 interchange and by land developments not adjacent to SR 27. The county's policy of limited access by subdivision design will make it easier for WSDOT to increase highway capacity south of 16th Avenue. However, land use controls or other growth management policies have come too late to prevent low cost solutions to the problem of SR 27 congestion north of 16th Avenue.

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[6]Evaluation of Proposed Category C Projects by Non-Engineering Criteria, Washington State Department of Transportation, Olympia, September 1981 (unpublished).

6. CITY OF OLYMPIA/SR 101

Background

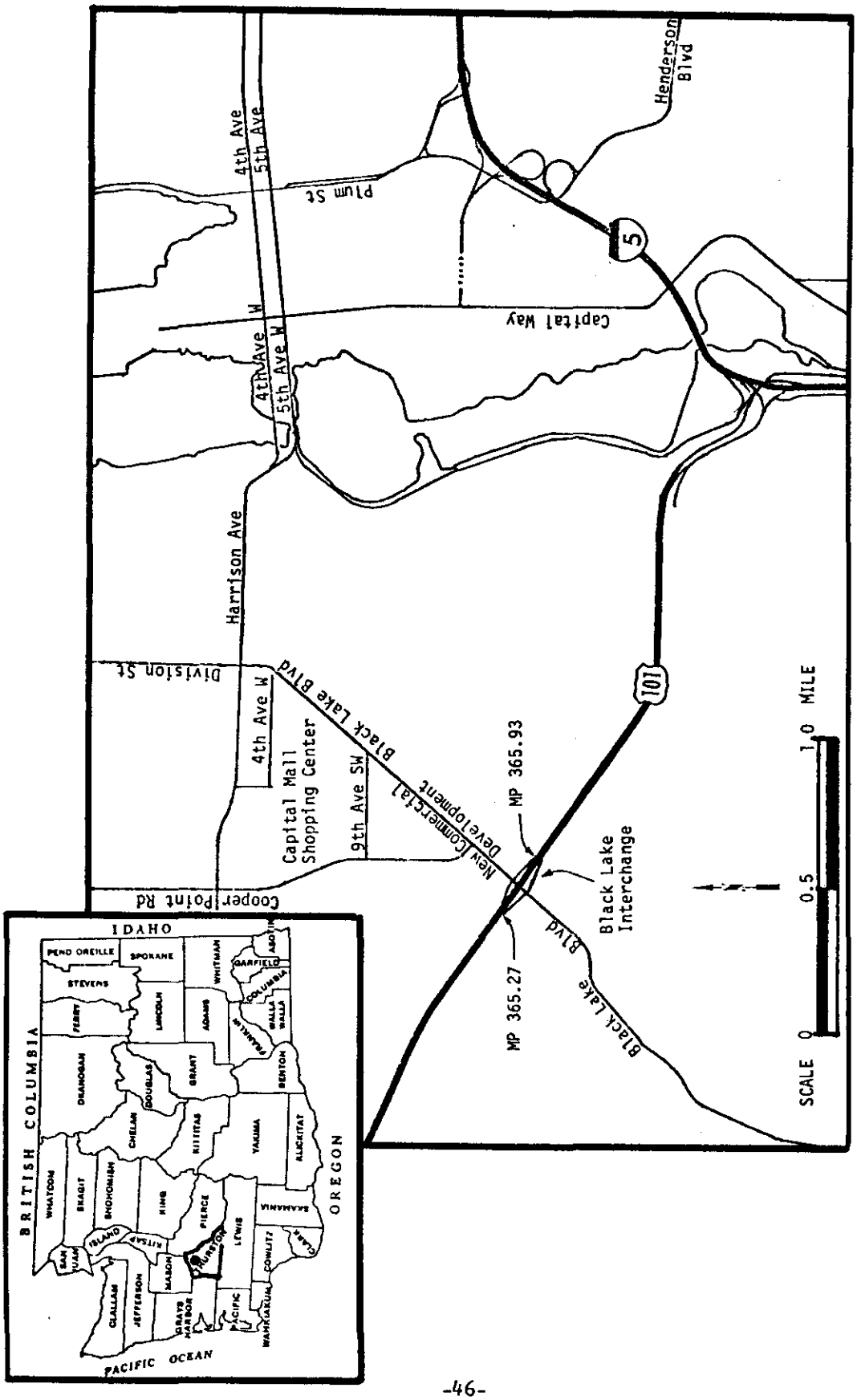
This study area provides another example of conflicting state and local interests. In both cases, the state's highways are major elements of the local transportation and traffic circulation systems.

The Olympia-Tumwater-Lacey Highway Urban Area increased in population 55.2 percent, from 47,730 in 1970 to 74,100 in 1980. During that same period much of Olympia's 4,151 increase of population consisted of urban expansion to the west. A number of factors, in addition to the reconstruction of SR 101 to limited access standards, contributed to this westward growth, including: (a) siting of the Evergreen State College, (b) construction of new public schools, and (c) the availability of substantial amounts of land with diverse topography offering a variety of marine and terrestrial views and suburban amenities. West Olympia is separated from the remainder of the community by Capitol Lake and Budd Inlet to Puget Sound. Access from east to west is limited to only two bridges with restricted capacities. As a result, much cross-town traffic elects the longer, but more free flowing, route via I-5, SR 101 and the Black Lake Interchange (see Figure 7).

Development of a large regional shopping center, about one-half mile from the interchange and several other commercial complexes within the intervening area, generated further traffic increases and severe capacity deficiencies at the Black Lake Interchange. At the time SR 101 was constructed as a limited access facility, Black Lake Boulevard was a minor county arterial. By 1979 the average daily traffic count was 33,000, up 73 percent in five years from the 19,000 in 1974.

As a result, three-way negotiations among the shopping center developer, the city of Olympia and WSDOT were initiated. These negotiations led to an agreement between the state and Olympia in May 1980, whereby cost of $400,000 in improvements are to be shared one-third by the state and two-thirds by the city. Originally, developers of commercial properties were to have contributed one-third, but since the city had already granted zoning changes and building permits

FIGURE 7. CITY OF OLYMPIA/SR 101



not all the developers were willing to participate voluntarily. In this case, WSDOT preferred not to enter into a multi-party agreement.

Summary of Findings

The city's limited land use controls have let too may developers in free before the city took any remedial action. This case demonstrated another important issue -- the use of a state highway as a local arterial although not designed by WSDOT to serve that function. The improvements will reduce congestion on Black Lake Boulevard and increase the capacity of the interchange. However, the increased use of the state highways for cross-town traffic (see Table 7) intensifies the capacity problems of I-5 through the Olympia-Tumwater-Lacey area.

TABLE 7. AVERAGE DAILY TRAFFIC VOLUME
SR 101 AT BLACK LAKE INTERCHANGE

Year	Northwest Leg	Southeast Leg	Difference
1967	10,200	12,100	1,900
1968	11,80	14,000	2,200
1969	12,600	14,900	2,300
1970	13,600	16,300	2,700
1971	14,400	18,000	3,600
1972	15,200	18,900	3,700
1973	16,500	20,300	3,800
1974	15,500	19,100	3,600
1975	16,800	20,700	3,900
1976	17,600	21,900	4,300
1977	19,000	23,900	4,900
1978	21,100	29,000	7,900
1979	22,100	33,000*	10,900
1980	21,600	32,300	10,700
1981	22,500*	36,700*	14,200

*Actual count

SOURCE: WSDOT Annual Traffic Reports

comprehensive plan for the area. There is much evidence of cooperation between WSDOT personnel and local officials in transportation planning. In this regard WSDOT is guided by administrative procedure and legislative mandate. For example, in the selection of Category C (major improvement) projects for inclusion in the Highway Construction Six Year Program RCW 47.05.051 requires, among other criteria, that consideration take into account ". . . the stated goals of the local area and its transportation plan."

The environmental impact review process has engendered significant cooperation between WSDOT and local professional officials. New growth management concepts in local land use controls also promises opportunities for improvement.

WSDOT is totally dependent upon the willingness of local jurisdictions to recognize and support state interests. The present law does not recognize statewide interests in highways or the relationship between land use changes and increased traffic demands on state highways. Thus, it does not spell out any state responsibility or authority in this area.

All but four of the state's 39 counties have adopted comprehensive plans. Twenty-eight have a zoning ordinance and all but one county have enacted subdivision regulations. However, adopted plans and land use controls do not always cover the entire county so that growth areas may not be subject to effective controls. The situation in the South Hill growth area of Pierce county is not unusual.

Cooperative Interagency Planning

Under the present system WSDOT participates in the local planning process at the regional level and in the implementation of specific projects. WSDOT is the pass-through funding administrator of Federal transportation planning grants to Metropolitan Planning Organizations (MPOs). Plans developed by the MPOs are reviewed by WSDOT and these plans serve as guidelines for local land use and transportation planning decisions. As such, they have no legal supremacy under Washington law (RCW 35.63.070, 35A63.040 and 36.70.060) which enables two or more cities, towns, or counties to form regional planning commissions to prepare plans. This legislation grants no real status to regional plans. The USDOT, and other Federal agencies, do make general consistency with MPO plans a consideration in approving grants-in-aid to local units of government. Each MPO performs an important role in coordinating state and local transportation systems.

For specific projects or developments, WSDOT reviews EIS documents on land use (zoning) changes, subdivision plats and other local planning decisions. At a less formal level, personnel from WSDOT District offices consult with local officials on specific day-to-day transportation facility improvements planning.

The limitations on meaningful participation require further attention. Direct involvement is more welcome at the implementation phase of the planning process. At the earlier stages, administrative review of MPO transportation plans permits

little direct participation in the development of local land use plans. Further, integration of local land use and state transportation planning at other than the most general level has not yet been achieved. This conclusion is based on the absence of an interactive process between state transportation and local land use planning with consideration to the interdependence between highway facilities and traffic generating land use changes.

ALTERNATIVE APPROACHES

Evidence from the investigations of interstate freeway interchange locations and the six study areas suggests that the existing system of land use controls has not prevented adverse traffic impacts on state highways. However, it can provide a strong positive benefit to state highways. This is most obvious in the Spokane County/Pines Road study area but is evident in other areas as well. At the same time it is clear that the present system has provided little or no protection such as in the case of SR 500 in Vancouver/Clark County. Failures have been due, in part, to the limitations of controls but also to the lack of integration between transportation and land use planning and to the limits of interagency cooperation in the planning process. Several alternative approaches have been investigated.

State Intervention

In a number of states some authority has been granted to the state to influence local land use decisions. However, that authority is not granted to the state agency responsible for highways and for the most part is applied primarily to the state's interest in environmental protection.

In an article in the Urban Law Annual, Sullivan and Kressell assert that the trend is toward greater state government participation in the planning process. The article concludes "...it is now clear that the time of full delegation of planning and land use regulatory powers is fast ending. The issue is no longer whether the state will assume such powers but when and in what form."[8] They cite Hawaii and Vermont as the two states that have preempted authority for land use control. However, in neither case has that preemption been complete and absolute.

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[8]Sullivan, Edward J., and Kressell, Laurence. "Twenty Years After -- Renewed Significance of the Comprehensive Plan Requirement." 9 Urban L. Ann. 1975, pp. 18, 66.

Hawaii. The Hawaii law (Chapter 205, Hawaii Revised Statutes) establishes the State Land Use Commission with the responsibility to classify land into four categories: urban, rural, agriculture and conservation. Land use control (zoning) authority for land within conservation districts is granted to the Department of Land and Natural Resources. Counties have zoning authority in all other districts. However, in rural and agricultural districts the law specifies only a very few land uses that may be permitted and sets minimum lot sizes. In establishing district boundaries the Commission is directed to consider the county's general plan. However, full local control is limited to urban areas, "... lands now in urban use and a sufficient reserve area for foreseeable urban growth." Even there the Commission is encouraged to reclassify urban lands which are incompatible with statewide land use guidance policy or are not developed in a timely manner.

Vermont. The Land Use and Development Act (Vermont Statutes Annotated, Chapter 151) puts an emphasis on planning in which a state capability and development plan together with local and regional plans are the basis for the state land use plan. The Act provides for implementation of the state land use plan in three ways:

1. By authorized local land use controls such as subdivision regulations and zoning.

2. Approval permits (from the state) for the sale, or offer for sale of interests in a subdivision or commence construction on a subdivision or development or commercial development.

3. Non-regulatory approaches including acquisition of land and easements, resource payments to private landowners permitting public use of their lands, and taxation affecting current or prospective use of land.

The Vermont legislation differs from that of Hawaii in a number of important ways:

1. It puts greater emphasis the development capability of land and on planning and consideration to regional and local plans.

2. It requires approval by the governor and adoption by the legislature of statewide plans.

3. It requires a state development permit.

Other Provisions for Protection of State Interests

Another approach used by states leaves land use decision within the authority of local government. However, the state may intervene when the state's interests demand.

Oregon. In Oregon, (ORE 197.250) the State Land Conservation and Development Commission (LCDC) sets statewide planning goals, prepares statewide planning guidelines and has the power of administrative review modification and enforcement of local plans and ordinances. The LCDC has the authority to amend and administer local plans and land use controls that do not comply with State Planning Goals (ORE 197.250). The Oregon LCDC actively reviews local plans and the application of local land use controls. So far it has not intervened in order to protect state highways.

The Oregon law has drawn considerable attention from professional planners and others. Enacted in 1973, the law represents a statewide comprehensive land use manangement program. It represents an important new approach to land use control and merits careful consideration.

In their appraisal of the Oregon land use act Gustafson, et al. state, "By providing statewide standards for land use planning and implementation carried out through an ongoing administrative process, an important state land use management role has been established and, many argue, without a substantial erosion of local flexibility."[9]

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[9]Gustafson, Greg C., Daniels, Thomas L., and Shirack, Rosalyn P., "The Oregon Land Use Act: Implications for Farmland and Open Space Protection." Journal of the American Planning Association, Volume 48, Number 3. Washington, D.C.: American Planning Association, 1982.

Utah. In 1974 Utah enacted a more direct and straightforward land use planning law which was repealed by public referendum before it could be applied as a means to limit traffic impacts on state transportation facilities.[10]

California. In the state of California county planning is mandatory: "By ordinance each legislative body of each county and city shall establish a planning agency," (West's California Statutes Annotated, Section 65100) and "it shall develop and maintain a general plan," (Section 65101). However, zoning is not mandatory (Section 65800).

California also has a number of laws dealing with special problems in specific areas. Among these is the Westside Freeway Park and Development Act of 1963 (West's California Statutes Annotated, Section 66400). This Act required each local government to prepare land use plans and appropriate zoning ordinances by June 1964. The legislation stated that "... the state has a continuing interest in adequate enforcement of such plans and ordinances due to construction by the state of the Westside Freeway." The Act set no further guidelines or standards beyond the requirement that the highway interchange districts should "... consist of not less than a circle of one-mile radius from the point of intersection with centerline of the Westside Freeway with the centerline of any highway, street or road intersecting at an interchange." (Section 66402)

Florida. The Florida Local Government Comprehensive Planning Act of 1975 (Section 163.3161, West's Florida Statutes Annotated) mandates the local adoption of a comprehensive plan. Further, this plan shall contain several specific elements on the environment, land use, transportation, community facilities, and recreation. A plan, when adopted by the local legislative body, has the force and weight of law; all public and private development shall be permitted only in conformity to the plan. Finally, local governments are charged with the responsibility of implementing the plan through appropriate development regulations and amending local regulations to bring them into conformance with the adopted plan.

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[10]Letters from Howard B. Leatham, Engineer for Planning and Programming, Utah Department of Transportation, Salt Lake City, January 5 and 27, 1982.

Illinois. The Illinois Department of Transportation exercises control over access points on crossroads within a given distance from ramp terminals of freeway interchanges.[11] The distance varies according to the type of interchange and the design speed of the crossroad. Beyond the specific distance, it is up to the local jurisdiction to exercise control.

Illinois law permits the state to review subdivision plats located within a corridor one-half mile on either or both sides of a state highway and to make recommendations regarding the effect of the proposed development upon the highway. In addition, the Illinois Department of Transportation actively promotes local planning programs for areas in the vicinity of freeway interchanges.

Environmental Protection Legislation

Nearly all states have legislation which declares the preeminence of state interests with respect to shorelines or other environmentally sensitive areas. In addition to Hawaii, Vermont and Oregon, several others relate these policies to local land use controls in one way or another. Florida, for example, sets up a procedure of plan reviews to assure consistency between comprehensive regional policy plans, district water management plans and environmental policy regulations. The law provides for the resolution of inconsistencies by the Land and Water Adjudicating Commission. (See West's Florida Statutes Annoted, Chapter 380.)

Precedent for comparable authority in Washington State is suggested by RCW 90.58, the Shoreline Management Act of 1971. Among the preferences required of local jurisdictions in shorelands planning, the act lists first, "Recognize and protect the statewide interest over local interest" (RCW 90.58.020). The act also establishes areas (shorelines) of statewide significance (RCW 90.58.030) and provides for the similar designation of additional areas upon the recommendation of the Director of the Department of Ecology (RCW 90.58.310).

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[11] Telephone conversation with Charles Kalbfleisch. Illinois Department of Transportation. September 1982.

Developer Responsibility for Participation in Financing

Several states have addressed the issues of developer responsibility for financing public improvements which are required as the result of new development. In the county planning and zoning enabling legislation (Section 46-6, Chapter 46, Hawaii Revised Statutes) Hawaii mandates that county ordinances require land subdivision developers to provide land for public parks and playgrounds, make payments in lieu of land provision, or make a combination of payments and land donations. Vermont's law (Land Use and Development Act, Vermont Statutes Annotated, Chapter 151, Section 6081) is more specific with regards to development permits and potential impacts on state highways and other public facilities. In the review of permit application it must be determined that approval:

a. Will not cause unreasonable highway congestion or unsafe conditions with respect to the use of highways, existing or proposed, and

b. Will not cause an unreasonable burden on the ability of a municipality (local government) to provide educational services or municipal or governmental services.

Applications cannot be denied solely on the basis of such considerations. However, reasonable conditions, as are allowable within the proper exercise of the police power, may be attached to alleviate the burden created.

Most developers negotiate agreements with the Vermont Transportation Agency before filing their application for a development permit.[12] Improvements financed this way in Vermont have included intersection channelization and traffic signals. Only development adjacent to the highway have been required mitigation of traffic impacts. Problems of inequity among developers and of major impacts resulting from development at locations away from the highway have not arisen.

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[12]Telephone conversation with Donald Remick, Director of Planning, Vermont Transportation Agency, Montpelier. August 1982.

Among the 13 states surveyed for this study, all but one reported that developers finance highway improvements, to some degree, as the result of the environmental review process. Although the practice is widespread, none has formalized the procedure to the point that developer responsibility is determined by specified formula or by adopted standards. All report that the relative amount of developer responsibility for traffic impacts is determined by negotiation.

Of particular interest to this study is the response from California which included the following:

> "The cumulative impacts of several different projects in the same area present a special problem. Our approach has been to develop special corridor studies to aid us and local agencies in the evaluation of the impacts of each individual project."[13]

The present state-of-the-art provides a means for a prediction of traffic generation potential by the type and size of the proposed land use developments. If inequities among developers are to be avoided then the determination of the relative responsibility of each developer should be based on an areawide analysis. When each agreement is negotiated separately there is always a danger that payments by the developer will resemble blackmail more than a realistic mitigation of adverse impacts.

CONCLUSIONS

Various new approaches for dealing with highway problems in growth areas have been tried in many other states. The investigations into practice in other states, undertaken for this study, did not reveal that any one state has developed a comprehensive approach to dealing with these problems. In any event the legislative action and administrative practice of any one state if adopted in Washington would not necessarily provide a satisfactory solution. Yet the problems identified in the case studies, which are known to occur in many other parts of Washington State as well, are very similar to those which led to the remedial legislation in several other states.

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[13]Letter from Ann Barkley, Chief, Division of Planning, Department of Transportation, Sacramento. January 1982.

With specific consideration to growth impacts on state highways, approaches which deserve serious consideration in Washington include:

- Mandatory local planning, particularly as in Florida, California and Oregon.

- A procedure for the identification and protection of state interests in local land use decisions as in Vermont, Florida and others.

- Establishment of a policy of developer responsibility for traffic impacts as in Vermont and Florida, but also as applied by the California Department of Transportation and by Snohomish County here in this state.

- Improved cooperation between the state and local planning agencies as mandated in California and practiced in Illinois and other states.

CHAPTER 4

ALTERNATIVE APPROACHES TO FINANCING IMPROVEMENTS IN GROWTH AREAS

THE PROBLEM IN WASHINGTON STATE

Like most of the rest of the nation Washington State faces an increasingly difficult problem in financing highway improvements. Available state monies available for construction of highways, roads and streets come exclusively from the Motor Vehicle Fund. This fund also provides for the operations and capital expenditures of a great many other state and local programs.

The Motor Vehicle Fund receives revenues from two sources:

(1) the motor fuel (gasoline) tax, and

(2) a variety of fees and other revenues including: annual vehicle registration fee, gross weight (truck) fees, and revenues collected from surplus right-of-way sales, property rentals, interest earnings and miscellaneous special permits and fees.

The expenditures of the State Motor Vehicle Fund have a unique preferential order. Existing bond indebtedness, farm and marine tax rebates, and special programs for snowmobiles and off-road vehicles are paid first. Second, payments are made to cities, counties, and the State Ferry System, all of which receive a statutory percentage of motor fuel taxes. Other state agencies and several special programs are then funded to the level of their legislative appropriations. Finally, any remaining monies in the Motor Vehicle Fund are made available to the Department of Transportation (WSDOT) for maintenance, administration, and highway construction. Trends in revenue and distribution from the 1967-69 biennium are the subject of Table 8 which also indicates the influence of inflation on highway construction.

TABLE 8. TRENDS IN REVENUES AND THEIR DISTRIBUTION BY BIENNIA 1967-69 to 1981-83
(Millions of Dollars)

	Biennium							
	67-69	69-71	71-73	73-75	75-77	77-79	79-81	81-83
Revenues*								
Fuel tax	265	292	318	325	361	487	509	502
Licenses, permits, fees	75	92	98	110	129	148	161	214
Other	20	56	24	58	(11)	20	52	34
Total	360	440	440	493	479	655	722	750
Distribution								
City/county								
Streets/roads	99	109	117	119	127	164	166	162
Misc. state agencies	100	132	142	157	165	175	201	232
Subtotal	199	232	259	267	292	339	367	394
Available to DOT	161	308	181	217	187	316	355	356
Ferries & related	-	-	2	5	10	19	31	38
Highway maintenance	42	52	64	75	89	109	127	145
Management & misc.	34	40	56	31	32	38	39	49
Subtotal	76	92	122	111	131	166	197	232
Available for Highway Construction	85	119	59	106	56	150	152	124
Percent of total	23.6	27.0	13.4	21.5	11.7	22.9	21.1	16.5
1967 construction dollars**	82	95	42	51	28	58	43	39
Percent of 1967 construction	100.0	115.9	51.2	62.2	34.1	70.7	52.4	47.6

* Excluding bond issues.
** For biennium mid-year; adapted from Federal Highway Administration, Price Trends for Federal Aid Highway Construction, 1977 Base, First Quarter 1982.

Source: WSDOT data

Federal funds available to WSDOT for construction of primary, secondary, and forest highways have ranged from a low of 26.6 million, in fiscal year 1978, to a high of 33.9 million in 1981. These data do not include (a) interstate highway funds, (b) local jurisdictions' share of secondary highway and forest highway funds, or (c) federal categorical grants for bridge construction or other special purposes. The amount of funds available for the 1982 fiscal year, 28.1 million, is less than for any other year since 1978. Further declines are expected in the future.

During the fourteen year period 1967 to 1981, funds available for highway construction, as measured by 1967 constant dollars, declined 58 percent. Total funds for both highway construction and maintenance decreased 30 percent. By way of comparison, during the same period (1967 to 1981) the state's population increased 32 percent (from 3,229,000 to 4,250,200), automobile registrations increased 45 percent (from 2,140,389 to 3,929,854) and the estimated annual vehicle miles traveled on the state's highways (including county and city streets/roads) increased 71 percent (from 17.741 billion to 30.346 billion).

The traditional way in which the state has constructed and maintained its highway system has led the public to expect good highways to be a product of its normal tax burden. For many years state resources, specifically taxes paid into the Motor Vehicle Fund, were sufficient. Now that these revenues bring in only a fraction of the cost of needed new construction, some change in highway financing must be considered. However, any proposals for additional taxes for highway purposes must compete with other equally pressing and popular needs.

The trends in highway demand are up; the trend in the state's ability to meet that demand is down. This disparity is most noticeable in the state's high growth areas. This current situation challenges the traditional concepts of full state responsibility to provide highway facilities in response to new urban growth and development. Alternative approaches to financing highway improvements need to be considered.

Legislative Study

In 1974, at the request of the legislature, an investigation was made of five alternative methods of funding transportation facilities.[14] As stated in the report's letter of transmittal, the methods included: "(1) an ad valorem tax, (2) an excise tax on land sales, (3) special assessments such as LIDs, (4) the state buying and selling land outside the right of way, (5) freezing the value of land for right-of-way acquisition. In addition to these, a method of earmarking a portion of the sales tax for transportation improvements was also investigated." The report recommended that all of the methods be considered for implementation except (2), an excise tax on land sales, and (4) the state buying and selling land outside the right of way. To date, none of the recommended methods has been implemented.

In this study all of these methods, except (5) freezing the value of land for right-of-way acquisition, were investigated and its conclusions substantiated. The area-wide approaches, (1) the allocation of ad valorem tax increments, and (3) special assessments have particular applicability in growth areas. Present legislation permits local governments to finance street and road improvements through assessment districts. A current legislative proposal would enable local governments to charge fees for the use of local roads and streets. However, extension of such enablement to permit WSDOT to finance transportation facilities has not been included in the proposed legislation.

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[14]Washington State Highway Commission. Department of Highways. Alternative Methods of Funding Transportation Facilities. Volume 1. Olympia. September 1974.

USER RESPONSIBILITY APPROACHES

The existing revenue sources for financing highways are based on the concept of user responsibility. Motor fuel taxes, and other forms of user generated revenues, though no longer adequate, will continue to be the basic source of highway financing.

Increasing User Generated Revenues

In a recent article in Traffic Quarterly, Wilbur Smith[15] discussed ways in which to increase revenues, including:

1. Direct fuel tax computed as a percent of price,
2. Extension of the general sales tax to motor fuels,
3. "Gas guzzler" tax on fuel-inefficient vehicles,
4. Allocate sales taxes paid on automobile parts and accessories to highways,
5. Imposition of tolls on selected new and existing highways,
6. Imposition of "gateway" tolls at entrances to major cities.

In addition to these, the following are suggested as revenue alternatives in the state transportation plan:

1. Increase gross weight fees for commercial vehicles,
2. Establish a tax based on annual vehicle miles driven,
3. Replace gross weight fees with a weight/mile tax, and
4. Increase the driver's license fee.

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[15]Smith, Wilbur, "Future of Highway Financing," Traffic Quarterly, Volume XXXIV, Number 1, January 1980, pp. 21-32.

Highway Improvement District (HID) Financing

Local units of government have authority to establish a local improvement district (LID) and to assess properties within that district for the cost of improvements on the basis of relative benefit to each property. In Washington State, cities use this method of financing for the majority of utility and street improvements. The same approach is applied by counties with a road improvement district (RID).

Property owners within the district must approve its formation and before the assessments are made a 60 percent or greater remonstrance prevents the project from proceeding. General revenues from assessments may continue for several years and go with the land. In this way developers may pass street and road improvement costs on to the buyers.

Unlike units of local government, WSDOT lacks the authority to establish similar districts in order to finance improvements to state highways. The method has other limitations as well.

1. It would be difficult to determine benefits for arterial highways when there are many users other than abutting property owners.

2. Bonds have an 8 percent limitation and are therefore difficult to sell in the present market.

3. Formation of the district is a lengthy process which can be lengthened further by litigation over relative benefit and/or by right-of-way condemnation proceedings.

Application of this approach to state highway improvements requires considerable modification of state statutes. Specific enabling authority providing for a broader benefit assessment area would be required. As noted in the case studies, often major subdivisions and other developments not abutting the highway generate a significant proportion of increased traffic on state highways. Therefore, any state highway improvement assessment district must be large enough to encompass these non-abutting beneficiaries.

Roads and Streets as Utilities

Another approach under consideration by the legislature would redefine local roads and streets as utilities. Cities and counties support this proposal which would permit charges for the use or availability of or the generation of traffic on roads and streets. The approach is similar to the improvement district, but different in a number of ways:

1. It is not necessarily limited to a specified area or district,

2. The charges are not a property tax, but a fee for the use of public facilities,

3. Revenues from the fees may be used for maintenance and operation as well as for construction.

4. The fees may be used to support revenue bonds and thus are not a general obligation of the municipality.

5. Charges are based upon the potential traffic generated by each property according to use and size, rather than on the street or road frontage.

As proposed authority, this means of financing would be limited to cities and counties and thus could not provide funds for needed improvements to state highways.

DEVELOPER RESPONSIBILITY APPROACHES

Numerous studies have demonstrated the positive relationship between improved access to highways and increased property values. The logical inference from the finding that property values increase with improved access is that at least some of the cost of constructing facilities which improve access should be assess against the benefiting properties. Knowledge of substantial windfall profits in some cases heightens the interest in benefit assessment.

Over the years, even with thousands of miles of freeway development, no universally applicable method has been perfected. Now that right-of-way for nearly all of the interstate freeway has been acquired, and most states have limited financial resources for active freeway planning and construction, perceptions of the problem have changed. Instead of building new freeways where needed in the future, responsible state transportation agencies now are faced with the need to improve existing highways in order to accommodate traffic generated by land use changes and associated development. The problem is finding an appropriate mechanism for coordinating highway improvements with development of nearby properties and for requiring developers to contribute to the cost of highway improvements.

The experience in Washington State demonstrates the difficulties in implementing this idea. Where the developer (a) sees the need for the highway improvement, that is perceives its importance to the contemplated land development, and (b) believes the desired improvements requires his participation, then negotiations between that developer and the WSDOT district may reach a mutually beneficial conclusion. However, under present law, there have been very limited other applications of developer participation agreements. It would be difficult to design a mechanism that will be both equitable and feasible for assessing anticipated increased property values prior to construction of the facility. Probably such assessments will have to be limited to those situations where property owners will be able to anticipate benefits greater than specified assessments.

The Environmental Review (EIS) Process

The EIS process added a whole new concept to land use controls. Simply stated, zoning seeks to prohibit land use changes which might have an adverse impact.

Lack of clearcut cause and effect relationships cloud the assessment of mitigations. Urban development which adversely impacts a highway comes about as the result of a great many social and economic factors as well as changes in the human geography which facilitate such development. More significant to the issue of impact mitigation is the measurement of impacts and their allocation among a number of separate developments. Fortunately, current traffic engineering

techniques provide techniques for such allocation which may lack absolute precision but can meet the legal test of being reasonable.

In a recent symposium, at the National Planning Conference, Dallas, Texas, May 12, 1982, Robert Frielich offered the opinion that development exactions must be based on a local comprehensive growth management program, clearly a police power action rather than a tax.[16]

As previously noted in the case studies, developer participation in improvements to Washington State highways as a mitigation for development impacts is dependent upon local government policies. As yet, very few cities or counties have given serious consideration to a comprehensive growth management approach to land development policies. Growth management attempts to accommodate growth by making sure that the adverse impacts are outweighed, or at least neutralized, by beneficial mitigations. In spite of these current limitations, developer participation offers a potential source of highway improvement financing.

Application of this approach in Washington State, discussed throughout this report, also has been applied in several other states. So far none has established a uniform state-wide policy whereby mitigation of increased traffic impacts is required for all new development. For the present this method of financing is characterized by the following limitations:

1. The amount of financing provided by developers is generally limited to improvements abutting developer's property and where the developer recognizes a direct benefit. Developers of properties removed from the needed improvement, such as large residential subdivisions, resist efforts to secure their financial assistance.

2. Inequities arise where improvements are required as the result of the cumulative effects of several developments. Early and late comers may receive benefits but are able to escape participation in financing equal to their impact responsibilities.

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[16]Frielich, Robert, "Development Exactions -- Bargaining or Blackmail," Alfred Bettman Symposium, National Planning Conference, Dallas, Texas. May 8-12, 1982 (paper presented at conference sponsored by the American Planning Association).

3. The administrative procedures for the negotiation and execution of participation agreements are cumbersome and require far too much time. The delays impose an additional cost on developers and impair WSDOT's ability to maximize this source of financing.

4. Developer financed improvements as mitigating conditions to land development approvals may be required by local jurisdictions in the EIS process. Considerable variation in the willingness of local governments to consider the state's interests has made undependable this approach to financing. Thus WSDOT is dependent upon the support of local government in the application of this approach.

If developers were required by law to finance, at least in part, the mitigation of their development's impacts on state highways, WSDOT would become responsible for the establishment and application of standards for the assessment of mitigation costs. Issues of early or late comers and other problems of inequity among a number of developers would have to be resolved fairly and promptly. Failure to meet these responsibilities might lead to litigation more costly than the value to be obtained through developer participation.

Acceptance of the principle of developer's financial responsibility still leaves the question of how the obligations are to be financed. For a variety of reasons, developers may be unwilling or unable to provide all the up-front monies required to meet their obligations. Further, in most cases not just one but many developments create specific improvement needs. A number of alternatives have been applied to provide a more equitable means for financing developer's contributions to the mitigation of impacts.

Alternatives

A slightly different approach has been applied in some cases. Whatcom County accepted an advance payment of real estate taxes from the developer in order to finance road improvements from Ferndale to the Arco refinery at Cherry Point. Prior to termination of plans by Puget Power Company for a nuclear power station in Skagit County, that company had agreed to the prepayment of county taxes to

cover the costs of needed public services for the construction period during which tax payments would otherwise be insufficient. The developers of the Vancouver Mall purchased bonds from Clark County at a favorable rate of interest. Proceeds from that sale financed road improvements including the construction of access ramps to I-205.

The state of Utah 1975 Legislature enacted the Resource Development Act (Utah Code Annotated, Chapter 133) under which projects specifically and individually approved by the legislature could be financed by prepaid sales taxes of the developer. This approach was successful for a few years, but eventually resistance given to the diversion of sales tax revenues from the general fund to highway purposes. In 1981 the act was repealed.[10] Utah still has accepted maintenance responsibility for a few access roads in remote areas when developers are willing to pay 100 percent of the construction cost. The Utah applications are unique in that the development in all cases has been to remote site developments not the result of immediate urban expansion.

One interesting provision of the Utah Act required the board of education to repay the state general fund, through property tax assessments by the school district, within a period of six years. No such repayment was required for prepayments for road or highway improvements. This provision suggests that the approach might be used as an alternative to bond financing. That is, prepayments of sales taxes and/or property taxes might be directed to construction of highway facilities when needed and the general fund reimbursed from future gasoline tax revenues.

Problems of equity arise in the administration of impact mitigation financing. A series of smaller developments with significant cumulative impacts poses a particular problem. Snohomish County, for example, offers the alternate of a fee based upon a schedule of trip generation. Standards govern computation of the fee amount. This not only serves to reduce inequities to small developer but permits the larger developer to avoid the time consuming negotiation process.

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[10]Letters from Howard B. Leatham, Engineer for Planning and Programming, Utah Department of Transportation, Salt Lake City, January 5 and 27, 1982.

DEVELOPMENT AREA APPROACHES

Area Development Plan

Among the methods for land use controls, noted in the literature search, was a proposal for an "approach area development plan" in the vicinity of freeway interchanges which would depend primarily on eminent domain for its implementation.[17] This was proposed as a means for limiting land use changes. However, it might have equal applicability as a means for financing improvement at such time as land use changes are justified by other considerations. If land enjoying appreciation through improved access can then be sold by the state according to a plan then the land sales proceeds could be used to finance those improvements. There are several factors to be considered, however:

1. Selection of areas and delineation of the land to be included presents a number of problems.

    a. Excluding areas with a high development potential might result in land use changes at inappropriate locations and no reduction in growth induced traffic impacts.

    b. Inclusion of lands not likely to be developed unnecessarily increases program costs.

2. Surplus acquisition of land adjacent to transportation facilities and holding that land until ready for development requires a large capital investment including: (a) cost of raising capital, (b) cost of land acquisition and assembly, and (c) loss of ad valorem tax revenues while the land held is held in public ownership. Thus, there is no assurance there would be any profit left to pay for improvements at such time as the land us ready for development.

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[17] "Land Use and Development at Highway Interchanges, A Symposium," Highway Research Board, Bulletin 288. National Academy of Sciences, National Research Council, Publication 860, Washington D.C., 1961, pp. 1-2, 33, 48-49, 82.

3. The constitutional issue of whether or not such land purchases would constitute a public purpose would have to be resolved.

Purchase of Development Rights

A far less costly approach would be to acquire only the development rights of land where potential development might adversely impact highway facilities. The same legal problems of eminent domain would apply. A similar plan is being used to preserve agricultural lands in King County. This technique would also require a large capital investment as well as legislative authority if it is to be applied by WSDOT.[14] As a means of financing highway improvements neither this nor the preceding approach could be applied in the many cases where development is already underway.

Tax Increment Financing

An innovative means for financing economic growth, tax increment financing (TIF), provides for the recovery of development expenditures made by a governmental agency within a specifically created development district. Increases in property values resulting from new development (or redevelopment) within the district create increases in tax revenues. These increases in tax revenues are directed to the local governmental unit which created the TIF district rather than being divided among all the units of government having taxing authority over the district.

Depending upon the particular state, the enabling legislation permits the local government (usually a city, but possible some other local unit or special authority) to create an artificial taxing boundary containing a known amount of property value, the base value at the time of creation. Then the sponsoring unit of government may make certain expenditures to promote the development or redevelopment of the property within the district.

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[14]Washington State Highway Commission. Department of Highways. Alternative Methods of Funding Transportation Facilities. Volume 1. Olympia. September 1974.

Typically this has involved the purchasing and clearing of land, preparing sites for new development, and the construction of street and other public improvements. The expenditures for these costs can be financed by the increments in tax revenues following development including those that otherwise would be distributed to the remaining governmental units having taxing authority within the district. Tax increments are computed on the bases of the difference between the taxes on the pre-district base value and the assessed value in each of the subsequent years until all costs have been recovered. As described by Huddeston,[18] in Wisconsin the tax distributions do not change but rather the various governments having taxing powers over property in the district must reimburse their tax increments to the local unit of government sponsoring the district. In most states the county distributes the base value generated property taxes to the appropriate taxing jurisdictions and the tax increments to the TIF District.

In the simplistic theory of TIF, other jurisdictions having taxing authority over the TIF district have nothing to lose and will ultimately gain by an increased tax base. In practice, this may not be the case. First, a significant portion of the increment may be due to inflation; thus in real dollars, the annual tax received may decline rather than remain constant. Second, the new development may constitute growth, imposing additional costs which otherwise might be met, at least in part, by increased tax revenues. In short, tax increment financing theory does not take into account either inflation or the costs of providing facilities and services required as a result of the development but not included in the original financing package. An example would be a TIF district in which substantial housing is developed. The impacts of this growth on schools and on off-site highway facilities would be substantial.

Since many states did not foresee these problems, the legislation lacks any procedure whereby these other jurisdictions might protect themselves. That is to say, such districts can be established with little or no prior notice to the affected jurisdiction and without any consideration to their interests. Existing state TIF legislation throughout the country does not provided for state highway projects or for the cost of mitigating adverse impacts on facilities and services resulting from development within TIF districts.

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[18]Huddleston, Jack R., "Variation in Development Subsidies Under Tax Increment Financing," Land Economics, Volume 57, No. 3, August 1981.

A constitutional amendment, proposed by the legislature, which would enable local governments to utilize tax increment financing was rejected by Washington voters in November 1982. Highways were not included among the costs eligible for TIF financing by the implementing legislation.

CONCLUSIONS

The decline in revenues available for new highway construction has limited the ability of WSDOT to provide needed highway improvements in growth areas. The issuance (sale) of state general obligation bonds has been this state's only alternative financing method. During periods of statewide growth, rising revenues have been sufficient to permit amortization of the bond indebtedness while the improvements serve the growing population.

In the current situation -- growing traffic demand and declining revenues --meeting the needs as they arise through bond financing is not so attractive. If revenues do not increase, then future years will find the debt service requirements for bonds an additional burden on already limited resources for maintaining and operating existing transportation facilities and services.

In recent years, greater consideration has been given to increasing the ability of the present revenue sources. In the long-term view, this probably is the most equitable approach in that generally highway users pay in proportion to their use. Nevertheless, there is inequity in requiring all to pay the cost of improvements in a relatively small number of growth areas which will serve an even smaller proportion of all highway users. There is a corollary issue in the distinction between state and local functions of highways. As demonstrated in the case studies, the local functions of property access and local traffic circulation are imposed on state highways. In this way segments of the state highway become critical components of the local area's transportation system. This fact is not recognized in the make up of the various methods available for highway financing. All of the alternatives to increased statewide taxing are designed to be applied only by local governments in the financing of local roads and streets. Further, the

concept of developer responsibility has been applied more effectively at the local level with WSDOT being dependent upon support from the local lend agency in the EIS process.

With regard to the developer responsibility approach, there are also a number of unresolved issues, including:

1. Establishing equity among several developers within the same growth area.

2. Determining the relative impact of each among several developments, particularly those not immediately adjacent to the highway.

3. Establishment of a statewide policy that recognizes developer responsibility, and of procedures for enforcement of that policy.

4. Adjudication of conflicts between the relative state and local interests in development decisions.

Legislative action would provide the solution to these problems. But such action may not be politically feasible in the short-term. Moreover, resolution of these four issues is a reasonable administrative objectives which can be achieved in part through WSDOT internal policy and through a program of interagency planning and action.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

This study has been directed toward two somewhat different but interrelated subjects: (a) preventing the adverse impacts of urban growth on highway facilities, and (b) financing highway improvements in growth areas.

Preventing the Adverse Impacts of Urban Growth

The experience in the six case study areas together with the information gained from the other investigations demonstrate the importance of local land use controls. The findings of this study suggest that such controls have not been effective particularly where statewide interests have not been represented in the preparation of local comprehensive plans. Early interagency cooperation in planning efforts and the integration of land use controls with plans for transportation facilities are important. Land use plans that are not supported by such efforts are less effective in preventing adverse impacts on highways.

During the early stages of rapid growth, public opposition to local land use controls may prevent their full imposition. In this regard the growth management approach appears to be more effective and realistic than a "no-growth" approach.

The State Transportation Plan calls for cooperation among local, federal and state agencies in maintaining and improving transportation systems.[8] That plan also supports coordinated and cooperative planning at the local level.

There are a number of reasons why WSDOT must emphasize short-term planning, including:

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[8] Washington State Transportation Plan Update, 1983-1995. Washington State Department of Transportation, Olympia, January 1982. Page 5-1.

1. The mission of WSDOT Districts is project oriented. Emphasis must necessarily be given to the biennium and six year programs rather than long-range planning. Thus interagency planning tends to be given a lower priority which is supported only to the extent it does not interfere with short-term obligations.

2. The era of major new highway construction projects has ended. The existing system of freeways and other major highways will provide the basic transportation network beyond any reasonable planning horizon.

3. At the present time WSDOT has very limited financial resources. Since a higher priority must be given to replacing bridges and restoring and maintaining the structural adequacy of existing highways, WSDOT is reluctant to make long-term commitments to major highway improvements.

4. In far too many cases in the past, public opposition to major highways proposed in local plans has forced WSDOT to abandon projects after substantial investment in planning, engineering and right of way acquisition.

Conversely, planners responsible for local comprehensive plans must take a longer range perspective. Factors which direct a long-term view include:

1. The dynamics of small areas. Growth in population and economic activity, essential elements in planning, are extremely difficult to predict for small areas. Therefore, the planners must look beyond short-term fluctuations to the most likely alternative futures.

2. Land use change (development) decisions are made by many individuals having their own relatively independent set of financial and other influencing considerations.

3. To be effective, public land use plans and their implementing policies and actions must preceed rather than react to private development decisions.

These factors partially explain why WSDOT's interests are either unknown or ignored in local planning and land use decisions. However, the experience in Washington State suggests that local planners generally recognize the importance of state highways to local transportation systems and welcome participation by WSDOT personnel in cooperative efforts to solve difficult land use/transportation problems. However, other factors inhibit such cooperation. For example, the recognized formal organizational structure for interagency cooperation in planning (through the metropolitan planning organizations) does not really lead to effective participation by both WSDOT District offices and local governments in land use and transportation planning activities. Formal participation by WSDOT personnel on technical committees generally has not provided a means for detailed participation in ongoing planning activities.

The experience in other states reveals a number of alternative approaches. Departments of Transportation in some states have undertaken special studies in growth areas. These have served to identify state interests and to measure potential impacts on state highways. Such studies also provide the basis for improved cooperation between the state and local planning agencies and for formulating mitigation measures. In this way problems, such as inequities among developers may be reduced, through consistent statewide policies.

Unlike Washington, several other states through legislative mandate require:

a. Local goverments to prepare and implement local comprehensive plans.

b. Protection of statewide interests in local land use decisions. (Washington State's environmental policy legislation includes this principle.)

c. Mitigation of adverse impacts of land development on public facilities, including state highways.

Financing Highway Improvements in Growth Areas

Declining revenues from traditional sources restrict the ability of WSDOT to provide needed highway facilities in growth areas. The investigations of this study reveal several factors which are important to the development of additional financial resources, including:

1. In growth areas, a state highway usually becomes the single major arterial serving local transportation needs. In fact, that highway becomes the major element in the local transportation system.

2. Local units of government in Washington State already have or are seeking authority to apply a number of innovative financing techniques for the construction of public improvements.

3. Such innovative financing techniques are not available to WSDOT. Further, under present law, they are not available to local governments to finance improvements to state highways even though such highways may be essential to the local transportation system.

4. Current efforts to require developers to participate in financing improvements necessitated by urban growth are hampered by the absence of an overall statewide policy. This has led to inequities among developers and has limited the effectiveness of this approach.

Implications of Findings to be Considered in Formulating Policy

As noted throughout this report, land use controls by themselves are inadequate to prevent the adverse impacts of urbanization on state highways. A further general observation, not specifically related to any one study area, is that zoning in particular is difficult for county governments to enact and enforce. In those counties where planning and zoning is adopted on an area-by-area basis (as in Pierce and Clark Counties), local residents will oppose zoning during the early phases of urbanization.

Only after a definite pattern of suburban growth has occurred will people in the area give their support to land use policies which are intended to "retain the present character" of an area. Even in this case the imposition of zoning may be highly controversial and firm resistance may come from many including those whose interests may actually be served. For example, county planning has been mandated by Pierce County's recent charter election with strong support throughout much of the county. Nevertheless, recently proposed planning and zoning plans for the South Hill area met with well-organized and emphatic public opposition. As a result, the county has been forced to defer consideration of the South Hill Area Plan.

Fortunately, zoning is not the only means for dealing with the problems of concern. Other county-wide development policies including subdivision regulations may be applied pending local support for zoning.

Once the urbanization process gets under way, growth and development continue regardless of the desires of local officials or residents of the community. Further, it is not realistic to expect that local land use controls will be used to force new developments to occur at locations not served by adequate transportation facilities. However, growth can be managed to protect state and local government investments in major public facilities such as highways.

The investigations in the study areas point up two issues:

a. Land use controls are the responsibility of local government and the state has no direct and very little indirect influence on local land use decisions regarding the impact of local land use decisions on state facilities.

b. In general, land use controls have not been effective as a means of preventing land use changes that lead to highway capacity deficiencies.

If land use controls are to be applied as a positive means for reducing the incidence and intensity of adverse development impacts on highways, changes in the existing system are essential. A coordinated effort could have a favorable impact on local

land use control procedures by making consideration of statewide interests in a significant factor in local decisions.

Under current practice, there now is insufficient coordination of land use and transportation planning for growth areas. It is not clear to what extent WSDOT's contribution would be welcomed. Through negotiations this coordination might come about, to some degree, in exchange for specific improvements to highway facilities, technical services or other incentives offered by WSDOT and other state agencies (such as Planning and Community Affairs, Commerce of Economic Development, and the Office of Financial Management).

Existing state law has not been a significant factor in limiting interagency cooperation. It is more important that WSDOT's participation in planning be initiated at a much earlier date than when developers submit formal proposals for approval.

No single state has developed a comprehensive approach in dealing with the problems associated with traffic impacts of urbanization on highways in growth areas. However, various new approaches taken by a number of states include solutions worthy of consideration. Several have adopted statutes which require local land use planning in much the same way as various other functions of local government are established by law. The authority and administrative responsibility remains with the local governments. Such an approach emphasizes local planning but does not necessarily lead to greater participation by state agencies in the planning process.

Relationship of Land Use Controls to Highway Financing

The following study findings demonstrate the relationship between local land use controls and the problems faced by WSDOT in the construction of improvements and the maintenance of state highways in growth areas:

1. Land use changes result in increased traffic demands on state highways in growth areas.

2. Increased traffic demands require highway improvements and increase maintenance costs.

3. The division of responsibility between WSDOT and local units of government for roads, streets and highways is inconsistent with the division between the local and statewide functions which highways must serve in high growth areas.

4. Most methods of financing authorized to local governments may not be used by them to improve state highways serving local needs. Nor is such authority extended to WSDOT.

5. Local land use controls, when supported by cooperative interagency planning, can be effective in preventing many adverse impacts of urbanization on state highways and thus reduce improvement and maintenance costs. However, this does not reduce the need for adequate transportation facilities in growth areas.

RECOMMENDATIONS

Recommendations for sweeping changes in laws governing land use controls and highway financing are not likely to be implemented since the present system has been developed over a long period of time. Therefore, the approach here is to identify those changes in WSDOT policies not dependent upon legislative or constitutional changes. Recommendations for consideration of legislative changes are offered where recommended changes in WSDOT policies and practices need to be augmented by legislative action.

Preventing the Adverse Impacts of Urban Growth on Highways

From the evaluation of the situation in the state of Washington, it is obvious that there are serious problems in providing transportation in growth areas and in reducing or preventing the adverse impacts this growth has on state highways. The several alternative approaches, that have been applied in this state and elsewhere, have not achieved entirely the desired results. However, a combination of actions

could be taken to strengthen the ability of WSDOT to deal with the problem. These include the following actions:

1. Include the rate and amount of growth in designated growth areas as a factor in selecting highway improvements to be funded. Further, give consideration to a preference for projects whose long-term operating efficiency will be protected by local growth management policies. Under the present system extensive, and often expensive, improvements designed to solve the problem sometimes become incapable of serving when local land use controls fail to address the cause.

2. Encourage and support participation of appropriate WSDOT personnel in the local planning process. As a means of supporting such participation WSDOT should undertake special studies of existing and potential growth areas in cooperation with local agencies to identify state interests and to provide assistance to local planning efforts.

Legislative actions to support and augment these policies and which have been taken by a number of other states include solutions worthy of consideration, including:

- State statutory incentives and requirements for the development of comprehensive plans by local government as adopted in Florida, California and Oregon.

- A procedure for the identification and protection of state interests in local land use decisions as adopted in Vermont, Florida and others.

- Modification of interagency operating procedures which will lead to a closer and more effective relationship between local government agencies and WSDOT Districts in planning activities.

Financing Facilities in Growth Areas

There are few alternatives available to WSDOT for financing highway improvements which do not require legislative action. However, WSDOT could work with local governments to establish a statewide policy on developer participation in highway improvement financing. An equitable system needs to be organized developers to contribute to the cost of highway improvements that are advantageous or necessary for specific developments to occur. In many cases, developers do not resist such a system. Rather, the problem is with the procedural and legal difficulties that inhibit such participation.

Ultimately implementation of such a policy may be dependent upon legislative action. Several problems in drafting and gaining support for appropriate legislation are noted, including:

a. Departure from the traditional concept of user responsibility approach to highway financing. Justification for WSDOT is found in the need to protect the user's investment in highways already constructed.

b. Problems of equity, timing and the assessment of costs and benefits need to be addressed as a requisite to the support needed for enactment.

c. Considerable controversy preceded adoption of the newly enacted law on the subject (Engrossed Senate Bill No. 4972) Controversy continues over its interpretation. Until a number of the issues involved have been resolved, through judicial review or other means, the legislature may be reluctant to give high priority to new legislative proposals.

d. Legal justification for developer exactions may depend upon prior establishment of consistent, reasonable, and equitable growth management policies.

e. Developer exactions for fiscal impacts on other public facilities such as schools, public safety services and development infrastructure, e.g.,

water, sewer, etc. Each of these has its own problems of equity and fairness.

These problems do not outweigh the need for clarification of the extent of developer responsibility and for inclusion of impacts on state highways among the conditions of permit approval.

Recommendations for Legislative Consideration

- Establishment of developer responsibility for traffic impacts as have been adopted in Vermont and Florida and also applied by the California State Department of Transportation and by Snohomish County in this state. The legislation should make a determination of statewide interests in transportation facilities and require the mitigation of the impacts clearly attributable to each new development or land subdivision as a condition of approval of development permits.

- Extend to local governments authority to include the financing of state highway projects that are important local arterials in improvement districts, i.e., Local Improvement Districts (LID's) and Road Improvement Districts (RID's).

- Extend to local governments authority to include financing of improvements to state highways from fees charged for the use of roads and streets as a utility.

- Extend to the Transportation Commission authority to establish area-wide special assessment districts (with approval of affected owners as in LID's and RID's) for financing transportation facilities which benefit properties and mitigate growth impacts.

Development of the appropriate legislation will require close cooperation with cities and towns and with others in order to resolve as many issues as possible and to gain support for the needed legislation.

APPENDIX A

LITERATURE REVIEW

The relationship between the accessibility provided by highway facilities and land use changes has long been recognized but understood only in a very general way. Studies of the economic impact of highway construction have been undertaken for many years beginning with the earliest of highway arterial development. These studies provide little background for understanding the current problems where major real estate developments generate traffic demands beyond the capacity of the highway facilities.

Pre-Freeway Studies

In 1979, Levin[21] summarized research efforts which had been undertaken to that date. He called for a more comprehensive approach with a need to quantify benefits (and losses) on a system and regional basis.

Issues raised by Levin and still not resolve include: (a) a clear distinction betwen users and nonusers; (b) which groups benefit by how much, and perhaps most difficult; (c) how regional highway systems can assure that land value increments at one location do not decrease land values in another area.

Levin's article concludes:

> In terms of what data are now available, a solid basis for projecting the various kinds of nonvehicular benefits on a unit basis seem to be lacking. Notwithstanding, it is apparent that there are identificable groups that are the beneficiaries of highway improvement and that the magnitude of their benefits is substantial, though these vary from class to class. It is entirely possible that, as the research techniques are perfected, the means for a more precise quantification will merge.

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[21] Levin, David R. "Identifying and Measuring Non-User Benefits," Highway Research Board, Special Report 56. National Academy of Sciences, National Research Council, Publication 775, Washington, D.C., 1959, pp. 136-147.

Within a short time thereafter a number of studies of the subject were undertaken. Most were directed toward the quantification of benefits and dealt mainly with the measurement of land value appreciation resulting from improved accessibility provided by freeway construction.

Freeway Construction Era

Another group of studies were in response to the expected increased traffic demands generated by more intensive land development at or near freeway access points. These studies were directed toward alternative land use control techniques as a means of preventing, or at least mitigating, development in the vicinity of freeway interchanges.

A 1961 symposium on land use development at highway interchanges, at the annual meeting of the Highway Research Board, emphasized the use of land use controls.[17] Three papers, in particular, dealt with alternative techniques of land use control as a means of preventing potential capacity deficiencies of interchanges. Levin set the stage for the symposium by defining the problem at interchanges, ". . . where almost before the pavement is dry on an interchange ramp, several huge industrial plants, a regional shopping center, a huge housing center, a complex of hotels and restaurants, and other large traffic generators will be located. . . . More often than not, there are few, if any, local public restraints on such private activity. After awhile, the unanticipated, additional traffic load which these generators create frequently will cause the ramp to break down functionally because the design capacity of the ramp has been exceeded."

Stanhagen noted little general interest in the interchange problem but, nevertheless, outlined a program for land use control in the vicinity of interchanges with the hope that ". . . others will be encouraged to describe the application of land use controls to specific problems.

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[17]"Land Use and Development at Highway Interchanges, A Symposium," Highway Research Board, Bulletin 288. National Academy of Sciences, National Research Council, Publication 860, Washington, D.C., 1961, pp. 1-2, 33, 48-49, 82.

Horwood, Graves and Rogers concluded that local land use controls were ineffective and suggested several alternatives involving greater participation by states in planning and control of development near interchanges.

Each paper defined and discussed the range of controls. Horwood, et al., classified these controls as follows:

Eminent Domain

- Purchase and lease back (excess condemnation)
- Acquisition of development rights or easements
- Temporary acquisition and resale pursuant to a development plan
- Acquisition of access rights

Licensing Control

- Development of license subject to reasonable conditions to ensure development consistent with public objectives

Police Power Regulations

- Zoning
- Setback requirements
- Subdivision control

To the above Stanhagen added the application of Doctrine of Nuisance Law noting that: at common law a roadside owner can be prohibited from interfering with the public right of "ready and easy passage." He also classified licensing as a police power control.

Stanhagen put greater faith in local land use controls. He suggested development of a formal comprehensive plan at interchange areas balancing the transportation system and the land use it serves and applying any number of techniques for plan implementation that might be required. Horwood, et al, proposed an approach area development plan which would depend primarily on eminent domain, rather than police power techniques, for its implementation. It was noted that without new

enabling legislation, authority for exercising these techniques was limited to local jurisdictions and not held by the state agencies responsible for construction and maintenance of the interstate system.

At that same symposium, Levin placed the blame for the problem of capacity deficiency on land developers and more directly on local officials for not exercising strict land use controls. In Levin's view the highway officials sought to do the best that modern highway technology makes possible stating: "... (they) have generally executed their assigned duties without encroachment on the prerogatives of public officials in other fields of endeavor." By implication it was then up to those local officials to protect the integrity of the facilities through land use controls. Each of the other two papers presented at the symposium suggested a more comprehensive approach with the interchange designed to accommodate the future locally planned land development.

In retrospect it is doubtful that such an integrated planning effort would really have prevented the problem. Few planners might have anticipated the significant changes in regional development and attendant land use patterns stimulated by the freeway system.

A 1966 report, A Review of Transportation Aspects of Land Use Control[22] gave a broader definition to the interchange problem. The authors, Harold Marks, and Salem Spitz, of Victor Gruen Associates, stated that freeways have proved their ability to provide a means of travel to and from an area safely, conveniently and economically. Just as in air travel where it is not the flight but on the ground trips betwen the city and the airport, it is the short trip between the freeway interchange and the destination that is becoming the problem. In further explanation they note that it is no longer essential for origin and destination to be connected by a straight line to provide effective travel service. Most motorists measure their driving distance and convenience in terms of travel time rather than physical distance. Further, there is less concern for travel mileage than with travel ease and clarity or especially with time. Freedom of movement is considered more desirable than directness of movement.

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[22]Marks, Harold and Spitz, Salem. "A Review of the Transportation Aspects of Land Use Control," National Cooperative Research Program Report 31. National Academy of Sciences, National Research Council, Washington, D.C., 1966.

These are seen as an important concept in future highway design, but they also suggest a broader perspective for analysis of "the freeway interchange problem." The freeway with its interchange is only a part of a system which provides for vehicular trips between a vast number of origins and destinations. The function of the interchange crossroad is as important as the function of the ramps since the existence of the interchange makes the crossroad an integral part of the system.

With this in mind, the authors redefine the interchange area as ". . . that portion of the community directly affected by the fact of the existence of an interchange at a particular location."

Application of this operation definition may be difficult, particularly in rural areas. However, the concept is worth noting. Subsequent increased interest in driving efficiency brought about by rising fuel costs probably have heightened its importance.

Land Value Change Studies

Several major studies have focused on the measurement of land value changes rather than on local land use controls. Only a few of the works dealing with this subject, secondary to this research project, have been reviewed in detail. Raymond B. Palmquist's report, The Impact of Highway Improvements on Property Values in Washington State,[23] one of the more recent and definitive studies, provides the theoretical basis for the measurement of benefits for this current research.

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[23]Palmquist, Raymond B. Impact of Highway Improvements on Property Values in Washington, Research Project HR-6564. Washington State Department of Transportation, Olympia, 1980.

Palmquist examined the effects of major highways on the value of surrounding properties. The study applied several tested theoretical methods to a data base derived from 9,359 sales records and from interviews with owners of homes and businesses. In each of five study areas, hedonic pricing techniques, with all variables kept constant except those under examination, produced a quality-adjusted price index. This index for the years during which a highway was opened was then compared with an index for a comparable area not affected by highway change. Perceptions of owners concerning highway impacts, gained from 383 interviews, were also analyzed.

Improved access to residential areas provided by highway construction resulted in property appreciation of 15 to 17 percent greater than comparable properties lacking such access advantage. Even where highest noise level readings occurred, accessibility induced property appreciation more than offset noise induced depreciation. Highway noise had little effect on commercial-industrial properties or on residential properties greater than 600 feet away from the highway.

Extensive care assured accuracy and data reliability. For example, each of the property sales was investigated to exclude any invalid transactions or sales where extensive improvements might influence appreciation. Validity to the 95 percent confidence level was the norm for hedonic regressions and related statistical computations.

The abstract of a study by John C. Langley, Jr., states:

> This study is a continuation of an investigation of the impacts of the Washington Capital Beltway (I-495) on residential property values in the adjacent community of North Springfield, Virginia. A 17-year (1962-1978) time series of property values represents the longest continuous longitudinal data base used in any analysis of highway impacts on residential communities. The results show conclusively that properties near the highway increase in value at a rate less than those more distant. It was found that properties in proximity to I-495 sell for approximately $3,000-$35,000 less than the others.[24]

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[24]Langley, C. John, Jr. "Highways and Property Values: The Washington Beltway Revisited." Transportation Research Record No. 812, Economic, Social and Energy Effects of Highway Transportation, Washington, D.C., 1981.

The 1,676 study-area properties were classified into three groups. The impact zone consisted of 1,056 properties within 1,125 feet of the freeway of which 99 abutted the freeway and 957 did not. The third group of 719 properties were within the same study area but all more than 1,125 feet from the freeway. Data were derived from 1,322 valid pairs of study area property transactions recorded for the years 1962 through 1978.

It is interesting to compare these findings with those of Palmquist. The latter quantified adverse impacts in terms of measured noise levels, rather than by the three variations of distance, and studied the effect of improved access provided by the freeway which he found to have a greater and positive influence on prices. It appears that the freeway improved the access of most, if not all, of the properties in Langley's study area. Further property value appreciation within the same community but without the benefit of improved access was not measured. Therefore, one must question any implication that proximity to a freeway will result in reduced property appreciation, a conclusion that Palmquist's study refutes. The two studies do agree on the more specific finding that those properties nearest the freeway appreciate at a lower rate than those more distant. Palmquist goes one step further to show that the benefits of improved access permit even those properties adjacent to the freeway to appreciate at a higher rate than otherwise comparable properties lacking both freeway noise and the benefits of the improved access which the freeway provides.

Indiana Freeway Study

Another study is more closely related to the issues of concern here. In 1973 a comprehensive analysis was made of freeway interchanges in Indiana by Lawrence P. Fabbroni.[25] This appears to be the only comparable research that has documented land use changes around a large number of freeway interchanges throughout a statewide system. For this reason alone it is important. Beyond this, several other features are worth noting. First, analysis is based, in part, on a

[25]Fabbroni, Lawrence P. Land Use Development at Interstate Interchanges in Indiana. Joint Highway Research Project, Purdue University, West Lafayette, Indiana, May 1973.

conceptual model of interchange functions and of interaction between the freeway area and adjacent urban centers. The model served as a means for organizing and analyzing systematically collected data on land use changes, traffic volumes and other selected variables. Mapping of land use at interchange locations was facilitated by a symbol code. Regretfully, a major objective of the study was not met. The authors had hoped to produce a land use development model which could be used to predict the extent of individual land use types in an interchange area. Perhaps this was too ambitious.

One contribution made by the study is a planning scheme for interchange development. It includes: (a) a zoning plan, (b) an official mapping and subdivision plan, (c) a setback requirement and driveway permits plan, and (d) design controls. Also set forth is a prototypical application of these plans to an existing interchange area. The report presents a rationale for these plans with an explanation of the features which will minimize traffic demands on the interchange ramps. However, quantitative considerations are absent. The plan does not provide guidelines for determining the amount of land (or floor area) to be allocated to each use. The cumulative traffic generating potential for the proposed uses is not related to the volume capacity of the interchange facility.

The chapter in the report titled Summary and Conclusions is disappointing. It is introduced with this statement: "The following discussion presents descriptive factors which it is strongly believed led to or explain the study's facts and figures." The discussion which follows presents a classification scheme for land use changes with the following categories:

1. Road User Services
2. Open Space and Recreational
3. Residential Development
4. Industrial Development
5. Commercial Complexes

Examples of land uses in each class are given and the possibilities for and the many existing activities of interchange area development by land use type are summarized. The author states: "Each interchange may not have all the land use

types. . . but each interchange will reach its equilibrium level of land use interaction at some time after freeway construction."

Given the broad categories and the breadth of coverage (no possibly type of urban development is excluded), it is difficult to understand the significance of this discussion. It seems more likely that the classification scheme preceded the analysis than it followed as a product of the study. The relationship between the facts and figures presented in the discussion and the descriptive factors is not clear.

Nine major findings and conclusions are listed without further comment. Three of these deal specifically with research methods:

1. No interchange land use development model has been developed in sufficient detail to predict the extent of individual land use types in an interchange to date.

2. Aerial photographs must be taken at regular intervals, for instance every year, to be of any use in land use change analysis of interchange areas.

3. Field surveys would be the easiest method to update development at interchanges already mentioned. Purchase and deed county records may be a more accurate and complete source (in studying changes in land uses) for the suburban and urban fringe interchanges not yet involved.

These findings have been taken into careful consideration and have been accepted as sound advice in formulating the work plan for this current study. Three others on the list are more applicable to highway administration, including planning, in Indiana and thus not pertinent to this study.

The remaining three deal with freeway interchange planning.

1. Successful interchange area planning must recognize the interests of highway road users, of businesses and of land use control least disruptive to existing preinterstate development while yielding the best long-range benefits for all.

2. Detailed comprehensive land use planning should be based in a qualitative way on a similar type interchange of common aspects of different interchanges already well developed.

3. Land use, design, and traffic controls must be combined into responsive and strong legal packages to be effectively enforced and used a a foundation for comprehensive interchange land use planning.

These demonstrate the prevailing wisdom of the previous studies reviewed. All seem to express faith in the effectiveness of land use controls at freeway interchanges without regard to the conflicting interests in land use between those responsible for the freeway (the state) and those having jurisdiction for land use controls (local units of government). Further, little attention is given to the issue of land use controls in relationship to facility capacity.

APPENDIX B

SURVEY OF PRACTICE IN OTHER STATES

QUESTIONNAIRE

Response to Impacts of Major Developments
on Transportation Facilities

Please respond with an X for affirmative answers and by entering additional information as appropriate. Use reverse side if more space is needed for answers.

____(yes) 1. Has the State adopted a statewide land use plan?

a. If yes, does that plan specifically provide for consideration of impacts on State transportation facilities and services in local land use controls? If so, please describe:

_____

_____

_____

____(yes) b. Does the State have any legal process and/or administrative procedures (other than A-95 review) specifically designed to assure consideration of State interests in local land use decisions? If so, please describe:

_____

_____

_____

____(yes) 2. Does the State have any other control over transportation related land use (excluding: limited access controls or right-of-way acquisition)? If so, please describe:

_____

_____

_____

3. What means has your department used to finance improvements required as a result of land use changes in economic growth areas (check all that apply)?

____a. Priority given to improvements which facilitate economic growth

____b. Priority first given to all other state projects

____c. Same as any other state project (no change in priority or funding)

____d. Local improvement district (LID) or other benefit area assessments

____e. Developer voluntary contributions to cost of improvements

____f. Developer required to participate in financing of improvements

____g. Other (explain in detail)

____(yes) 4. Are developer contributions used to finance improvements, in whole or in part?

a. If so, how is developer responsibility identified?

_____

_____

_____

b. And, how is the relative amount of developer responsibility computed?

____ (1) by negotiation

____ (2) by adopted standards or formula

____ (3) other (please explain)

_____

_____

_____

_____

_____

_____

_____

5. Please provide the name, mailing address and phone number of a person in your department who would be able to provide additional information on this subject.

Name: _____

Mailing Address: _____

_____

(Area Code) and phone number ( ) _____

Please enclose copies of relevant documents with this questionnaire.

Response requested by 1-30-82.

LETTER OF TRANSMITTAL

JOHN SPELLMAN
Governor

DUANE BERENTSON
Secretary

STATE OF WASHINGTON
DEPARTMENT OF TRANSPORTATION
Highway Administration Building • Olympia, Washington 98504 • (206) 753-6005

December 29, 1981

Mr. Ernest W. Elliott, Director
Division of Transportation Planning
Department of Transportation
Haydon Burns Building
605 Suwannee Street
Tallahassee, Florida 31301

Dear Mr. Elliott:

We are undertaking a study of various methods that have been used by governmental units to finance improvements of highways, roads, and streets to handle traffic generated by economic developments. The basic problem is how to provide transportation services for an expanding economy and this, or course, involves growth management.

We would appreciate your assistance in providing information concerning methods you have used, or statues that your state has, that specifically address financing improvements necessary to accommodate industrial, commercial, or residential developments.

Enclosed is a brief questionnaire concerning areas of specific interest to us. If you will assist us by completing this questionnaire and by providing copies of relevant laws, regulations, procedural directives, or other documents, the information obtained will be very useful to us.

Your assistance will be appreciated very much.

Sincerely,

ROBERT S. NIELSEN
Assistant Secretary
Public Transportation and Planning

RSN:lch

Enclosure

-- COPY --

LIST OF SURVEY RESPONDENTS

1	Arizona	Department of Transportation
2	California	Department of Transportation
3	Colorado	State Department of Highways
4	Florida	Department of Transportation
5	Illinois	Department of Transportation
6	Iowa	Department of Transportation
7	Maryland	Department of Transportation
8	Massachusetts	Department of Public Works
9	Minnesota	Department of Transportation
10	Oregon	Department of Transportation
11	Texas	State Department of Highways and Public Transportation
12	Utah	Department of Transportation
13	Wisconsin	Department of Transportation

APPENDIX C

HOUSE CONCURRENT RESOLUTION NO. 17

WHEREAS, the electronics and related high-technology industries are growth industries and environmentally suitable, it is in the state's interest to stimulate plant investment by companies representing those industries in order to provide diversified and long-term employment opportunities for the residents of Washington State; and

WHEREAS, Successful recruitment of such investment offers the oportunity for both economic diversification and geographic dispersion of employment and revenue benefits in Washington State; and

WHEREAS, These perceptions and economic goals are universally shared by other states and many foreign countries and there is vigorous competition for these investments, which includes the provision of substantial investment incentives; and

WHEREAS, Washington State currently has the opportunity to locate two recognized leaders in the electronics industry, subject to resolution of public works improvements in Snohomish and Pierce Counties related to the proposed plant sites; and

WHEREAS, the perception of these two companies about Washington State's desire and willingness to assist in their pending location decisions, and their actual decisions, will be of substantial influence on other companies in these industries, including those the Department of Commerce and Economic Development is currently providing confidential assistance;

NOW, THEREFORE, BE IT RESOLVED, By the House of Representatives of the State of Washington, Senate concurring, that the 1981 regular session of the legislature will take appropriate action, including the provision of funds, to assist on a fair share basis, Snohomish and Pierce Counties and the electronics companies, in providing the necessary public service improvements to ensure the location of these companies. For both Pierce County and Snohomish County, the specific commitment of the legislature is to provide a level of funding sufficient to ensure state financial assistance for necessary improvements to roads identified in the impacted area dropping below level of service "D" as defined by the Washington State Department of Transportation; and

BE IT FUTHER RESOLVED, That it is the stated policy of the Washington State Legislature to create and maintain a business climate that is conducive to the further location of high-technology industries in Washington State.

REFERENCE LIST

1 The South Hill Comprehensive Plan. Pierce County Planning Department, Tacoma, 1981.

2 Interview with Dan Hardin, Project Planner, Pierce County Planning Department, Tacoma, January 1982.

3 Route Analysis, SR 161, 176th Street East to SR 512, Washington State Department of Transportation, Olympia, June 1981.

4 North Creek Comprehensive Plan, Snohomish County Planning Department, Everett, December 1977.

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10 Letters from Howard B. Leatham, Engineer for Planning and Programming, Utah Department of Transportation, Salt Lake City, January 5 and 27, 1982.

11 Telephone conversation with Charles Kalbfleisch. Illinois Department of Transportation. September 1982.

12 Telephone conversation with Donald Remick, Director of Planning, Vermont Transportation Agency, Montpelier. August 1982.

13 Letter from Ann Barkley, Chief, Division of Planning, Department of Transportation, Sacramento. January 1982.

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16 Frielich, Robert, "Development Exactions -- Barganing or Blackmail," Alfred Bettman Symposium, National Planning Conference, Dallas, Texas. May 8-12, 1982 (paper presented at conference sponsored by the American Planning Association).

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18 Huddleston, Jack R., "Variation in Development Subsidies Under Tax Increment Financing," Land Economics, Volume 57, No. 3, August 1981.

19 State Transportation Plan, Washington State Department of Transportation, Olympia, February 1981. Volume 2, page G-2. Also see Washington State Transportation Plan Update, 1983-1995. Washington State Department of Transportation, Olympia, January 1982, page 5-1.

20 Including:

1. Land Development and Transportation Management, Bellevue, September 24-25, 1981, sponsored by the University of Washington; Washington State Section, Institute of Transportation Engineers; and the Transportation Research Center.
2. Statewide Conference on Land Use, Seattle, November 6-7, 1981, sponsored by the University of Washington, The American Planning Association and others.

21 Levin, David R. "Identifying and Measuring Non-User Benefits," Highway Research Board, Special Report 56. National Academy of Sciences, National Research Council, Publication 775, Washington, D.C., 1959, pp. 136-147

22 Marks, Harold and Spitz, Salem. "A Review of the Transportation Aspects of Land Use Control," National Cooperative Research Program Report 31. National Academy of Sciences, National Research Council, Washington, D.C., 1966.

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