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Statewide Transportation Planning in California: Past Experience and Lessons for the Future

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Past Experience and Lessons for the Future

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Executive Summary

Federal surface transportation legislation mandates that state departments of transportation (DOTs) engage in collaborative, multi-modal statewide transportation planning. Since the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), state DOTs have had to reassess both their role in and approach to statewide transportation planning. These reassessments have included an examination of pre-ISTEA planning efforts by DOTs to answer such questions as:

1. What have been the driving forces shaping state transportation policy?
2. How have these forces evolved over time?
3. How have state DOTs responded to these forces?
4. What have been the outcomes of the DOT responses?

An understanding of the answers to these questions offers lessons on the appropriate planning role of state-level transportation agencies today and in the years to come.

This research examines the experiences of the California Department of Transportation (Caltrans) and its predecessor agencies with statewide transportation planning. The research finds that California's transportation agencies have generally practiced what we would characterize *as crisis management*, or *triage style* planning. The state's transportation plans have primarily been prepared in response to widespread perceptions of fiscal or physical crisis, or under external pressures or mandates from the federal government. Most state transportation plans have been reactive: focusing on remedying accumulated system deficiencies rather than laying out a long-term planning vision for the state. An important and still significant exception to this pattern, however, was the ambitious *California Freeway System* plan adopted by the Legislature in 1959.

In the 1970s, the state's commitment to the *California Freeway System* plan eroded, and the role of the Division of Highways as the nation's preeminent highway-building organization was called into question. The Division was merged into a new, multi-modal Department of Transportation, inaugurating several years of organizational soul-searching to define a new state role in the planning, development, and operation of California's transportation system. Economic booms and busts combined with a serious project backlog in the 1980s to shift planning efforts away from defining long-term visions and goals and toward completing near-term programs and projects. In the post-ISTEA era, however, state transportation plans have again focused more on defining institutional roles and establishing planning processes and less on projects and programming.

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Eras of Statewide Transportation Planning in California

The history of statewide transportation planning in California can be characterized as encompassing seven distinct policy/planning eras, which are summarized in **Table 1**.

Era 1: Creating the State Highway System (1895-1919)

California inaugurated its state highway program to enhance the economic development prospects of the state. The creation of the program marked the beginning of a sometimes-uneasy relationship between state and local governments over the control and finance of highways.

The first era of statewide transportation planning in California was marked by the efforts of legislators, state officials, and other interested parties to create and finance a state highway system. These groups believed direct state involvement in highways was necessary to improve the quality of the state's roads—largely because the counties were too cash-strapped to improve the roads themselves. They also believed that the state role should focus strictly on those routes that carried traffic of statewide concern and/or could be used to stimulate statewide economic growth. These important routes would form an interconnected system of high-quality state highways.

The proposal for a full-fledged system of state-administered, financed, constructed, and maintained highways represented a radical break with tradition and encountered serious opposition from legislators and other individuals wary of increasing the power of Sacramento at the expense of the counties. This concern about the danger of concentrating "too much" power in Sacramento delayed the creation of the state highway system for nearly fifteen years. Eventually, a long campaign by good road advocates bore fruit and the state highway system was created in 1909. A series of highway bond issues were approved in 1909, 1915, and 1919 to finance the new 3,000-mile system.

During the late 1910s, nearly 2,500 additional miles were added to the state highway system, and most of the mileage consisted of routes of purely county or local importance. At this same time, the tremendous increase in motor vehicle traffic caused many miles of new highways to become deficient—whether due to physical deterioration or inadequate design. The engineering changes necessitated by burgeoning motor vehicle traffic, the addition of new system miles, and post World War I inflation combined to swamp the ability of bond proceeds to finance system construction. It quickly became clear that the state required millions more dollars to complete the state highway system.

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Table 1. Eras of Statewide Transportation Planning in California

Years	Policy/Planning Era	Driving Forces	Significant Products	Outcomes
1895-1919	Creating the State Highway System	• Poor condition of roads seen as threat to state economic growth.	• 1896 Bureau of Highways Plan • 1909 State Highway Act	• State highway system created to boost economic growth. • Escalating system costs soon result in fiscal crisis.
1920-1933	A Golden Age for California's (Rural) Highway Program	• Fiscal pressures on highway program prompt legislators to tighten route selection criteria and to find a new revenue source.	• 1920s new route selection criteria adopted • 1923 Gas Tax • 1927 Breed Act	• Fiscal stability • State highway engineers make steady construction progress.
1933-1941	From Long-Range Planning to Short-Term Fixes	• Severe urban fiscal crisis leads urban interests to demand state highway aid.	• State commits to urban road aid in 1933 & 1935. • Plans chronicle growing imbalance between state highway revenues and needs.	• Expanded state commitments without additional resources lead to new fiscal crisis.
1941-1955	Planning for Post-War Highways	• Accumulated highway needs and growing urban traffic congestion prompt state officials to conduct an extensive examination of all facets of the state highway program.	• 1940s critical highway deficiencies reports • 1947 Collier Committee recommendations • 1947 Collier-Burns Highway Act	• Expanded highway program with enhanced highway funding • New state commitment to metropolitan freeway construction
1955-1975	Mass Production of Highways	• Growing highway revenues prompt state officials to think about long-term highway needs.	• 1959 adoption of visionary California Freeway System Plan	• Dramatically expanded commitment to freeway construction • Fiscal pressures and socio-economic and environmental concerns rise to challenge highways-only focus of California transportation.
1975-1992	Multi-modal Transportation in an Era of Declining Resources	• Concerns about the impact of the state highway program on metropolitan areas leads to fundamental policy shift.	• AB 69 and creation of Caltrans • 1970s California Transportation Plan • 1980s state fiscal pressures lead to increased local transportation funding. • 1989 Transportation Blueprint	• New multi-modal focus for state transportation • Fiscal pressures lead to retrenchment of state program and newfound assertiveness of local officials.
1992-present	ISTEA and Its Aftermath	• Enhanced fiscal and planning independence of local agencies leads to fundamental rethinking of state agency role.	• 1993 California Transportation Plan	?

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- The first proposal for a state highway system in 1896 was defeated because of concern that the program increased state power too much at the expense of the counties.
- The early advocates for a state highway system claimed the system would enhance the future economic growth of the state. Economic development concerns were an integral part of the route selection process.
- After nearly 14 years of advocacy by good roads enthusiasts, the Legislature created the state highway system in 1909.
- The possibility of state aid proved tempting to many county officials who successfully lobbied for the inclusion of many roads of purely local or regional importance into the state highway system.
- The state's reliance on long-term bonds to finance the state highway system proved to be a weakness in the face of dramatic increases in heavy motor vehicle traffic that necessitated the enormously-expensive reconstruction of many newly built state highways.

Era 2: A Golden Age for California's Rural Highway Program (1920-1933)
Legislative action introduced relative fiscal and programmatic stability into the state highway program. In 1923, California instituted a gasoline tax that quickly became the engine of a reinvigorated highway finance system. In 1927, an uneasy truce in the geo-political struggle between the north and south was arranged through the Breed Act. This compromise temporarily cooled the heated rhetoric from southern interests about the "unfair" distribution of highway resources but also hamstrung state discretion in highway resource allocation.

By the early 1920s, state highway planners (and their legislative allies) faced several challenges to the future stability of the state highway program. First, they had to figure out how to re-elevate statewide planning concerns over purely political concerns in the route selection process. Second, they had to find ways to short-circuit politically motivated system expansion—perhaps by allocating some state money for county road improvement. And, third, they had to find a more reliable finance instrument than bonds to support the state highway program.

The second era of statewide highway planning proved to be a veritable golden age of highway construction. Legislators solved the state's highway finance problems with adoption of a gasoline tax in 1923, highway planners reasserted the primacy of planning criteria over purely political motives in route selection, and engineers built hundreds of miles of rural roads on the state highway system. The state highway program received an unexpected boost with the dramatic expansion of the federal aid highway program and the creation of the Federal-Aid highway system in 1921. This golden age began to lose its luster, however, as early as 1927 when political jealousies produced the first of a series of north-south compromises on highway program expenditures. By the time of the depression, short-term, local (county) economic concerns began to replace long-

term statewide planning concerns as the driving force behind the state highway program.

- The adoption of a gasoline tax in 1923 appeared to solve the state's highway finance problems.
- The strengthening of route selection criteria appeared to solve the political problem of mileage inflation.
- State highway planners and engineers made steady construction progress on the (rural) state highway system.
- The north-south compromise of 1927 marked the first geopolitical compromise over the distribution of highway resources.

Era 3: From Long-Term Planning to Short-Term Fixes (1933-1941)
California expanded its highway program to include roads in urban areas because of the local fiscal crisis of the Great Depression. This decision placed a severe strain on the highway program because the state failed to increase its highway resources when it expanded its programmatic commitments.

In the 1930s, California's focus on long-term statewide highway planning was supplanted by a short-term focus on alleviating the employment and public fiscal crises of the Depression. In 1933, the state highway program was expanded to urban areas, without any increase in highway revenues. The state made this decision because: 1) the local finance mechanism (property taxes) had collapsed and the revenue shortfall needed to be made good, and 2) urban highway programs meant jobs for the masses of urban unemployed. The state engaged in an extensive statewide planning survey from 1934-1936, which helped to inform late 1930s estimates of highway deficiencies and highway needs. These surveys revealed that—because of tremendous pressure on the state's limited highway resources—construction progress was unable to keep pace with the expansion of highway program commitments. By the beginning of the 1940s, the state's propensity to expand its programmatic commitments without expanding its highway fiscal resources coupled with the traffic and maintenance strains of World War II to create a new backlog of highway system deficiencies and insufficient financial resources with which to remedy them.

- State highway policy shifted from a long-term focus on economic development to a short-term focus on economic relief.
- The fiscal crisis of the Depression prompted urban and county officials to lobby for state highway aid.
- The state eliminated the historic barrier to urban highway aid in 1933, and doubled the size of the state highway system without raising new revenue.
- State highway planning focused on the preparation of highway needs plans as the cost of the expanded state highway system began to exceed the state's highway revenues.
- State commitments to urban areas made under the pressures of the Depression proved permanent and, by the end of World War II, urban

highway planning needs began to supplant the rural program as the focal point of the Division of Highways' efforts.

Era 4: Planning for Post-War Highways (1941-1955)
The immediate post-war period was an era of significant change in the state highway program. Motor vehicle taxes were raised, which allowed highway engineers to reduce the backlog of needed projects. And, California entrusted the Division of Highways with control over freeway development in the state's urban areas.

During the 1940s and 1950s, California made significant progress remedying the deficiencies accumulated during the 1930s and early 1940s, and the legislature and administration explicitly redefined the mission of the Division of Highways to include metropolitan freeway planning and construction. The early 1940s found state highway officials engaged in a series of detailed engineering assessments of accumulated state highway deficiencies and future state highway needs. These assessments helped inform the crucial legislative debates of 1947 that witnessed the most extensive reform of the state highway finance system since the establishment of the gasoline tax in 1923.

During this crucial legislative session, two changes were made to fundamentally alter the structure of the state highway program. First, the program's fiscal condition was dramatically improved by an increase in motor vehicle user fees and the creation of a state highway account (a trust fund device) to receive and dispense highway revenues, separate from general revenue accounts. The new trust fund arrangement and the simultaneous explosion in post-war vehicle travel enabled highway planners and engineers to make dramatic progress in remedying past deficiencies, although the pressure of increased traffic congestion meant a permanent solution to the state's growing urban traffic problems would prove illusive. Second, the parameters of the highway program were altered when pressure from urban interests prompted the Legislature and Governor to hand responsibility for metropolitan freeway construction to the Division of Highways.

By the mid-1950s, statewide highway planning had expanded to include a metropolitan—as well as a rural and inter-city—focus. The finance arrangements of 1947, paired with modest fuel tax increases in 1953 and the dramatic expansion of federal highway spending in the post-war period, to flood the highway trust fund coffers and allowed the Division of Highways to gear up for the mass production of highways and freeways. And the 1956 federal legislation that financed the interstate highway system soon inspired state officials to add a new central mission to the Division of Highways: planning and constructing an extensive statewide freeway and expressway system.

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- State highway planning in the 1940s focused on the determination of critical highway system deficiencies as part of an effort to lobby the legislature for increased highway funding.
- The Collier Committee produced the most extensive review and analysis of the state highway program in its history.
- The Collier-Burns Highway Act of 1947 appeared to solve the highway system deficiency crisis of the 1940s by increasing highway funding.
- The Collier-Burns Highway Act marked the beginning of state involvement in metropolitan freeway construction and a fundamental shift in the orientation of the highway program to focus primarily on urban needs.
- The Collier-Burns Highway Act included a new geopolitical compromise between north and south and a commitment to counties to provide them with a guaranteed minimum amount of highway aid each year.

Era 5: The Mass Production of Highways (1955-1975)
The adoption of the visionary California Freeway System plan made the Division of Highways an important and powerful actor in the state. This new power enabled the highway engineers to make significant accomplishments, but the methods used to do so attracted significant criticism.

In 1959, the Legislature approved the 12,240-mile *California Freeway System* plan that became the *raison d'être* of the Division of Highways during the 1960s. Highway engineers made steady progress on the plan but soon ran into a wide array of obstacles ranging from the now well-chronicled urban freeway revolts to the less well-chronicled, but enormously important, highway fiscal crisis of the late 1960s and 1970s. By the early 1970s, the combination of these pressures, coupled with a growing environmental awareness on the part of many Californians, led to a fundamental shift in the focus of statewide transportation planning from a highways-only to a multi-modal focus. This shift is best exemplified by the merging of the Division of Highways into the newly created Caltrans in 1973. While the shift to a multi-modal philosophy was relatively clear in concept, putting this philosophy into practice would prove a significant challenge.

- The 1950s were an era of plentiful highway revenues, and this allowed planners at the Division of Highways to proactively develop large-scale, long-range transportation plans.
- The Division of Highways developed the *California Freeway System* Plan, which became the guiding force in state transportation planning for nearly twenty years.
- The political consensus behind the *California Freeway System* plan began to erode with the urban crisis and freeway revolts of the 1960s.
- The fiscal health of the state highway program began to weaken in the face of inflation, increased vehicle fuel efficiency, and a political reluctance to raise taxes.

Era 6: Multi-modal Transportation in an Era of Declining Resources (1975-1992)

California created Caltrans as a multi-modal successor to the Division of Highways. State fiscal pressures forced a retrenchment of state involvement in transportation and brought a resurgence of local finance and control.

The passage of AB 69 in 1972 and the creation of Caltrans in 1973 marked a watershed in the history of statewide transportation planning in California. No longer would the state transportation agency's role be limited to highways, now many forms of transportation were within its purview. Statewide planning activities over the next several years would be focused on defining the parameters and direction of the new agency's transportation vision. These shifts represented a traumatic change for Division of Highways' highway engineering culture, and produced strains that were evident in the organization for decades.

In terms of projects and programs, the period witnessed a retrenchment of state activities in highway and road construction, expanded state involvement in mass transit, and a gradual increase in local finance and control of transportation planning. By the early 1990s, with the passage of the federal ISTEA legislation, Caltrans was once again thrust in the position of having to redefine its purpose and mission vis-à-vis metropolitan planning organizations in a dramatically evolving transportation policy environment.

- AB 69 and the creation of Caltrans in 1972 marked the shift from a highways-only to a multi-modal transportation focus.
- Statewide transportation planning in the 1970s was dominated by an effort by the new Caltrans to define its planning vision and goals.
- The 1980s marked a retreat by Caltrans from long-range planning to a focus on compiling lists of highway and other transportation deficiencies.
- The 1980s marked a new period of local assertiveness in the finance and planning of transportation projects.

Era 7: ISTEA and Its Aftermath (1991-present)

After 60 years as the major developer of urban transportation systems (almost exclusively in the form of freeways), Caltrans began to cede control back to the regions and struggled to define a new, explicitly collaborative planning role with other transportation actors.

New surface transportation legislation in 1991 and 1998 introduced changes in federal transportation programs that have increased the challenges faced by state departments of transportation. Federal legislation has shifted the balance of power between state and regional transportation agencies by granting the regional agencies a significant degree of financial and planning independence. ISTEA and TEA-21 have changed the role of state departments of transportation to a statewide coordinator of metropolitan area plans, overseer of rural and inter-

city transportation concerns, and compiler of these various components into a single long-range (twenty-year) planning document. These policy changes have caused a great deal of tumult in long established inter-governmental relationships between local, regional, state, and federal transportation agencies, and have left many state departments of transportation struggling to redefine their purpose and mission in a new and radically different planning and policy environment.

The adoption of Senate Bill 45 in California introduced new changes in the structure of the state transportation program. The overall theme of the legislation was the need to increase local and regional flexibility over the use of transportation resources and greater local and regional control in project selection and design. The end result of the combination of ISTEA (and TEA-21) and SB 45 has been a fundamental restructuring of the balance of power between Caltrans and local and regional governments over transportation issues. In the 1950s and 1960s, the state Division of Highways was able to go about its task of meeting its definition of state transportation needs, with a clearly constrained local role in the planning process. In the 1970s and 1980s, Caltrans stressed the need for cooperation and intergovernmental partnership but many local critics argued that rhetoric about cooperation was all about style and had very little substance. In the post-ISTEA era, however, the rhetoric became reality.

- ISTEA, TEA-21, and SB 45 have shifted the balance of power between Caltrans and regional transportation agencies by granting regional entities a significant amount of financial and planning independence.
- Caltrans has spent the 1990s both compiling needs-list-oriented plans—as it did during the 1980s—and preparing plans that attempt to define its role and responsibilities in a changed transportation planning environment—as it did in the 1970s.

Conclusions

With the exception of the extraordinarily ambitious *1959 California Freeway System* plan, a century of statewide transportation planning in California has been characterized primarily by the irregular production of reactive plans focusing on fiscal shortfalls and project backlogs. In other words, state transportation “plans” have typically been backward looking; they have been tools to lobby for increased funding to complete already adopted projects.

The *California Freeway System* plan was the great exception to this generalization. It was ambitious, visionary, and captured the imagination of the motoring public and its elected representatives. The power of this plan unleashed an unprecedented era of transportation investment in California. The scale and rapidity of freeway construction is seen by some as evidence of the potential of visionary planning and concerted public action, and by others as evidence of the dangers of unchecked government power.

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The abandonment of both the *California Freeway System* plan and the Division of Highways in favor of a fiscally-constrained, multi-modal California Department of Transportation resulted in a series of planning efforts in the 1970s to redefine the role of the state highway department and develop a more collaborative model of transportation planning. These early efforts produced some thoughtful appraisals of the appropriate state role in transportation planning and development, but these appraisals have had little obvious connection to the more programming-oriented plans that followed in the 1980s and early 1990s.

The passage of ISTEA and TEA-21 at the federal level coupled with the passage of SB 45 at the state level have compelled Caltrans to again reconsider its role in the state's transportation system. In particular, Caltrans has been forced to reconsider its role in urban transportation. While it is unlikely that California will return to the days when the state role was limited exclusively to a limited system of rural, interregional highways, a fundamental rearrangement of the roles and responsibilities of state and local governments in metropolitan transportation has taken place. Still to be determined are the specifics of these new inter-governmental relationships, and Caltrans' place within them.

Statewide Transportation Planning in California:

Past Experience and Lessons for the Future

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Introduction

Since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, federal surface transportation legislation has mandated that state departments of transportation (DOTs) engage in increasingly collaborative and multi-modal transportation planning. [1] Over the past decade state DOTs have had to reassess both their role in and approach to statewide transportation planning. Such reassessments, by their very nature, require one to consider pre-ISTEA (and TEA-21) planning efforts by state DOTs. What have been the driving forces—both issues and interest groups—shaping state transportation policy and how have they evolved over time? Reexamining the past allows us to look at the specific agency responses to these forces—both successes and failures—and offers lessons on the appropriate planning role for state-level transportation agencies.

This paper considers the experiences of the California Department of Transportation (Caltrans) and its predecessor agencies in addressing the task of statewide transportation planning in California. The paper begins with the early efforts of the Bureau of Highways, in tandem with an array of good roads movement activists, to create the state highway system for California, and the paper ends in the present-day with its debates over the proper roles of state versus regional and local governments in transportation planning. The historical discussion is divided into eras of statewide transportation planning, with each era focused on a particular policy or planning issue or set of issues. The paper concludes with general observations on the themes and lessons suggested by the state's experiences.

Methodology

The research premise underlying this paper is that evidence of statewide planning is found, first and foremost, in the statewide plans themselves. Therefore, the paper is focused primarily on an analysis of the publicly available transportation planning documents developed by Caltrans and its predecessor state transportation agencies over the past century. The analysis considers the themes and specific components of the planning documents, and situates the

[1] Schweitzer (2000) discusses the specific requirements of the federal transportation legislation and their practical consequences in the twelve most populous states in the companion piece to this paper.

documents within the political and transportation planning debates of their time. The analysis does not focus on non-documentary interpretations of statewide planning nor does it include extensive interviews with current and former Caltrans employees in an attempt to reveal the agency's internal, or "secret," planning processes and objectives.

The History of Statewide Transportation Planning in California

The historical review shows that statewide transportation planning[2] has a long, though episodic history in California. Statewide transportation planning has been driven largely by periodic crises culminating in the preparation of a significant long-range state-level transportation-planning document. Generally, the transportation agency of the day followed these plans with shorter-term, more narrowly focused follow-up documents that drove day-to-day and year-to-year agency operations until the next crisis arose. In short, statewide transportation planning has typically occurred only in periods of crisis or external pressure on the department of transportation. And, by and large, statewide transportation planning has focused only on the issues of immediate relevance to the crisis/external pressure of the time, with the preparation of the statewide freeway plans culminating in adoption of the *California Freeway System* plan of 1959 being an important, though perhaps sole, exception.

The historical review also shows that many of the driving forces behind California transportation policy in the past have reappeared in subsequent decades. Between the 1890s and 1900s and again in the 1940s, statewide transportation planning was driven by a pervasive belief that the state's deteriorating roads were undermining the state's economic position. In the 1920s and 1990s, external pressures from the federal government led to an upsurge in statewide transportation activity. In the 1970s and today, dramatic changes in the policy environment forced Caltrans to rethink the fundamental purposes and assumptions behind state transportation policy to demonstrate the continued relevance of the state's position. Because these driving forces have tended to resurface—and are likely to continue to do so in the future, an examination of the state's responses to past transportation challenges—and the outcomes of these responses—provides useful guidance to present and future state transportation planners and policy makers.

Creating the State Highway System (1895-1919)

The first era of statewide transportation planning in California was marked by the efforts of legislators, state officials, and other interested parties to create and finance a state highway system. These groups believed direct state involvement in highways was necessary to improve the quality of the state's roads. They also

[2] Throughout this paper, I define statewide transportation planning to mean any transportation planning activity conducted at the state level that focuses on statewide transportation issues and concerns.

believed that the state role should focus strictly on those routes that carried traffic of statewide concern and/or could be used to stimulate statewide economic growth.[3] These important routes would form an interconnected system of high-quality state highways.

The proposal for a full-fledged system of state-administered, financed, constructed, and maintained highways represented a radical break with tradition and encountered serious opposition from legislators and other individuals wary of increasing the power of Sacramento at the expense of the counties. This concern about the danger of concentrating "too much" power in Sacramento delayed the creation of the state highway system for nearly fifteen years. Eventually, a long campaign by good road advocates bore fruit and a state highway system was created in 1909.

Background

> *"(T)he roads of California are in a deplorable condition. The absolutely system-less manner in which the majority of the roads in the State have been located and constructed, and are being maintained, as well as the extensive unnecessary mileage, are evident to any one who has traveled over the State…The work on our highways has been carried on without method or system; the money has been wastefully and injudiciously expended…The remedy must be apparent. Changes in the existing laws alone will not suffice. Such defects as exist in these may be remedied, but until an economic and definite system of highway construction throughout the entire State be inaugurated, California can hope for no improvement over her present highway condition." --Biennial Report of the Bureau of Highways (1895-1896)*[4]

By most standards, the roads of California were in terrible condition in the mid-1890s. Poorly maintained, platted with little forethought, and largely neglected during the state's railroad-building era, the roads were the bane of interest groups as diverse as farmers, miners, and cyclists. Many members of these groups believed the poor roads were undercutting the state's economic growth and posed a direct threat to its future prosperity. Feeling threatened by the status quo and not seeing any active state-level or legislative leadership in this field, they organized themselves under the banner of the Good Roads Movement and lobbied the Governor and the Legislature for action to improve the state's roads.[5]

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[3] These beliefs underlying the Good Roads Movement in California are alluded to briefly in Office of the Bureau of Highways (1896), Automobile Club of Southern California and California State Automobile Association (1921), and Highway Advisory Committee (1925), among numerous other sources.

[4] Office of the Bureau of Highways (1896:6).

[5] The governor and many other politicians appeared at the 1893 State Good Roads Convention canvassing potential supporters, but it seems that most of these politicians were less than energetic when it came to pushing state roads bills through the Legislature (Brown 1998).

After two years of intense lobbying by the good road advocates, the Legislature created a Bureau of Highways in 1895. Rather than granting the new entity a long lease on life or any significant power or authority, a wary Legislature granted the new Bureau a tenuous two-year life, and assigned it only information-gathering responsibilities. The three commissioners appointed to head the Bureau were charged with studying the conditions of the roads throughout the state, developing recommendations for their improvement, and reporting back to the Legislature.[6] The commissioners took their charge quite seriously, traveling some 7,000 miles in a buckboard wagon, examining roads throughout the state.[7]

The First State Highway Plan

> *"The State highways should be the great arteries of a road system from which branch out minor highways serving counties and districts. They should be located along those lines which the physical features of the State forever fix as the easiest lines of communication, and should be constructed and maintained by the State. The Bureau has mapped out such a system as would traverse the great belts of timber, fruit, agricultural, and mineral wealth within our State, connect all the large centers of population within the limits of the State, reach the county seat of every county, and tap the lines of county roads."*
>
> *-Biennial Report of the Bureau of Highways (1895-1896)*[8]

The commissioners submitted their final report, entitled *Biennial Report of the Bureau of Highways (1895-1896)*, to the Legislature in the fall of 1896. To no one's surprise, they reported that the state's roads were in dreadful condition; they were generally poorly constructed and maintained and often laid out without considering the relationship of one road to another. The commissioners maintained that the solution to the road problem lay in a fundamental restructuring of the state's road system. They recommended that roads be classified according to their primary use as state highways, county thoroughfares, or district roads and that each system be the primary responsibility of state, county, and local government, respectively.[9]

The proposal that a 28-route, 4,500-mile system of state highways be created proved to be the most innovative and controversial of the commissioners' recommendations.[10] The commissioners claimed that the future economic development of the state necessitated the creation of a system of through-routes

[6] Office of the Bureau of Highways (1896).

[7] Reported in Highway Advisory Committee (1925).

[8] Office of the Bureau of Highways (1896: 6-7).

[9] Office of the Bureau of Highways (1896)

[10] The routes were selected so as to form a complete highway system that connected the natural resource regions, centers of population and county seats of the state to one another and to the highways of adjoining states via the easiest lines of travel (Office of the Bureau of Highways 1896). These same criteria were used when the state highway system was created in 1909 and variations of the criteria appear in the *1959 Freeway and Expressway Plan* as well.

linking the different sections of the state to one another and to the highways of adjoining states.[11] They also argued that the statewide benefits resulting from construction of these routes justified statewide financing of the cost, through a tax on all property in the state, and state responsibility for construction and maintenance. The report's authors concluded that many of the counties were too cash-strapped to construct and maintain the roads on their own.[12]

The Bureau proposal was significantly modified by the Legislature. Many legislators feared increasing the power of Sacramento vis-à-vis the counties and these legislators inserted provisions to allow greater county control over the state highway system, including the ability to add an unlimited mileage of new routes to the system.[13] The Governor vetoed this modified proposal on the grounds that the modified proposal would cost the state a lot of money, and it would not require that the most important state roads be improved first.[14] Legislators granted the highway function a more permanent status in state government when they created the Department of Highways as a permanent successor to the Bureau of Highways. However, the role of the Department of Highways (and subsequently the Department of Engineering) was limited to advocacy for greater state involvement, general fact-finding, and administrative oversight of a handful of state roads in the Sierra Nevada. This agency made a series of reports to the Legislature (1898, 1900, 1906) in which it advocated the creation of a state highway system. The agency took particular pains to point out the positive experiences and general administrative practices of other states that had created state highway systems or inaugurated other programs of state road aid.[15] Each time, however, the Legislature failed to act for fear of increasing centralized state

[11] Office of the Bureau of Highways (1896: 6-7).

[12] Concerns about the administrative, fiscal and technical capabilities of the counties were clearly the driving force behind the push for state involvement in highways and the creation of the state highway system, both at this time and in the near future. For example, a state commission noted the justification for state involvement in highways in a 1925 report. "We have given much serious thought to the question as to why the state should interest itself financially in highway construction. Also, if it is proper for the state to interest itself in highway construction, is there a limit to its interest? There is only one major reason that the state should interest itself in highway construction located in the various counties. That is, in order to accomplish, for the benefit of the people of the whole state, a purpose which the counties, functioning separately, can not so well accomplish" (Highway Advisory Committee 1925:39).

[13] Highway Advisory Committee (1925)

[14] Highway Advisory Committee (1925)

[15] The reports in which advocacy had a prominent role are Department of Highways. (1898). Biennial Report of the Department of Highways, 1897-1898, Department of Highways. (1900). Biennial Report of the Department of Highways, 1899-1900, and Department of Highways. (1906). Biennial Report of the Department of Highways, 1905-1906. The Department also submitted reports in 1902 and 1904 but advocacy for state involvement, while present, was more subdued and subtle than in the reports just noted.

power, although as time passed the intensity of opposition to an increased state role in highways diminished.[16]

Establishing the State Highway System

> *"The route or routes of said highways (were) to be selected by the Department of Engineering…as to constitute a continuous and connected State Highway system running north and south through the State, traversing the Sacramento and San Joaquin Valleys and along the Pacific Coast, by the most direct and practicable routes, encountering the county seats of the several counties through which it passes and joining the centers of population, together with such branch roads as may be necessary to connect therewith the several county seats lying east and west of such State Highway." --1909 State Highway Act*[17]

By 1909, public concerns about the danger of increased state power had been replaced by public concerns that the poor condition of the state's roads would have dire economic consequences.[18] The shift in public sentiment was reflected in the Legislature where the State Highway Act of 1909 won easy passage. The Legislature charged the Department of Engineering (the successor to the Department of Highways) with selecting the routes for a state highway system according to the same planning criteria that had guided the original commissioners of the Bureau of Highways when they developed their proposed state highway system.[19] The Department of Engineering selected a 3,052-mile system, which was approved by the Legislature. The Legislature authorized the issue of $18 million in highway bonds (approved by the voters in 1910) to help finance the system and created a state highway fund to receive bond proceeds.[20] To oversee the actual construction of the state highway system, the Legislature created an appointed Highway Commission in 1911. Actual construction began the following year.

To this point, specific planning criteria—including the implicit criteria that a road had to be of statewide importance—had guided the highway route selection process. During the late 1910s, nearly 2,500 additional miles were added to the state system, and most of the mileage consisted of routes of purely county or local importance.[21] As part of the State Highways Act of 1915, 700 miles were

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[16] Highway Advisory Committee (1925)

[17] Quoted in Automobile Club of Southern California and California State Automobile Association (1921:11).

[18] Highway Advisory Committee (1925)

[19] See footnote 10 for a discussion of the specific criteria for route selection.

[20] The state relied on bonds backed by general revenues and not on a statewide property tax, as had been proposed in 1896, to finance the state highway system during the 1910s (Highway Advisory Committee 1925).

[21] Highway Advisory Committee (1925)

added to the state highway system, and an additional 1,800 miles were added by the State Highways Act of 1919. A 1925 report by the Governor's Advisory Committee on Highways observed that many roads added in 1915 and 1919 were not necessarily routes of statewide significance and lamented that the state's limited highway resources would have been better spent if applied to original trunk-line system.[22]

At this same time, motor vehicle traffic began to supplant horse-powered traffic on the state highway system. The heavy, higher-speed motor vehicles were harder on the existing road surfaces and they required more expensive durable surfaces and smoother alignments than slower, horse-drawn traffic. Many newly constructed miles of highway quickly became deficient—whether due to physical deterioration or inadequate design.[23] Even the infusion of $15 million (approximately $140 million today) in new highway bonds in 1915 and an additional $40 million (approximately $360 million today) in 1919 proved insufficient to close the gap between highway revenues and highway system deficiencies.[24]

The engineering changes necessitated by burgeoning motor vehicle traffic, the addition of new system miles, and post World War I inflation combined to swamp the ability of bond proceeds to finance system construction. It quickly became clear that the state required millions more dollars to complete the state highway system.[25] Many road groups (particularly the state's powerful automobile clubs) complained loudly about the Highway Commission's lack of progress. And, rather than recognizing the ever-increasing pressures under which the state highway program was operating, most people at the time attributed the apparent lack of progress to waste and sloppiness on the part of the highway commission.[26]

Unresolved Problems

By the early 1920s, state highway planners (and their legislative allies) faced several challenges to the future stability of the state highway program. First, they had to figure out how to re-elevate statewide planning concerns over purely political concerns in the route selection process. Second, they had to find ways

[22] Highway Advisory Committee (1925)

[23] Automobile Club of Southern California and California State Automobile Association (1921)

[24] Reported in Automobile Club of Southern California and California State Automobile Association (1921).

[25] The Highway Advisory Committee (1925) reported that an additional $200 million (approximately $1.6 billion today)—above and beyond all projected revenue—would be required to complete the state highway system.

[26] This is the principal theme of Automobile Club of Southern California and California State Automobile Association (1921).

to short-circuit politically motivated system expansion—perhaps by allocating some state money for county road improvement. And, third, they had to find a more reliable finance instrument to support the state highway program.

A "Golden Age" for California's (Rural) State Highway Program (1920-1933)

> *"In selecting the roads for a state highway system, only those should be included which are of statewide necessity and use."*
>
> *--Governor's Highway Advisory Committee*[27]

The second era of statewide highway planning was a veritable golden age of highway construction. Legislators solved the state's highway finance problems with passage of a gas tax in 1923, highway planners reasserted the primacy of planning criteria over purely political motives in route selection, and engineers built hundreds of miles of rural roads on the state highway system. The state highway program received an unexpected boost with the dramatic expansion of the federal aid highway program and the creation of the Federal-Aid highway system in 1921. This golden age began to lose its luster, however, as early as 1927 when political jealousies produced the first of a series of north-south compromises on highway program expenditures. By the time of the depression, short-term, local (county) economic concerns began to replace long-term statewide planning concerns as the driving force behind the state highway program.

Solving the Highway Finance Problem

By the early 1920s, most state legislators agreed that the state needed a new finance instrument to support the state highway program. The use of highway bonds that were paid off from state general revenues over forty years to build roads that frequently had to be completely rebuilt in six or seven years was a bad idea.[28] And, many millions of additional dollars were required for the highway program, while the state's fiscal resources were stretched thin.[29]

The idea of instituting a gasoline tax as a user fee to support state highways had been recommended by the automobile clubs in 1921 and the state Board of Equalization and the highway commission in 1922. A proposal to create a gas tax had appeared in the Legislature in 1921 but had quickly died. By 1923, the state highway program's fiscal crisis forced the Legislature to take action.

The Motor Vehicle Act of 1923 put the state's highway finances on slightly firmer footing and gave additional resources to counties who might otherwise have

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[27] Highway Advisory Committee (1925:39)

[28] The report co-authored by the Automobile Club of Southern California and California State Automobile Association (1921) made a big deal of this fact—and used it to advocate strongly for adoption of a user fee-based finance system centered on a gasoline tax.

[29] Highway Advisory Committee (1925)

been tempted to enroll more of their roads into the state highway system.[30] The two cents per gallon gas tax was split equally between state and counties—but its proceeds could only be used for maintenance and reconstruction. The prohibition against its use for new construction had been inserted by members of the Senate and was removed in 1927. The Legislature increased the gas tax to three cents per gallon in 1927—with the additional cent dedicated to state highways. By 1927, it appeared that the state's highway finance problems had been solved and that the engineers could get on with the work of building highways.

Addressing the Route Selection Problem

Despite the fact that the state had established a specific set of criteria for selecting new routes for the state highway system, the 1915 and 1919 route additions demonstrated that the criteria allowed too many roads of purely local or county importance into a system designed to serve statewide travel. Indeed the establishment of stricter route addition criteria was a major planning focus during the 1920s. By the end of the decade, the California Highway Commission had added three new criteria to the established list—all of which focused on the general requirement that state highways had to serve statewide transportation needs.[31] The Highway Commission expressed hope that these new criteria would prevent a sudden influx of new routes to the system—and it worked for a time. However, the route selection criteria were simply ignored during the economic crisis of the Great Depression.

Statewide Highway Planning in the 1920s

Statewide highway planning centered on two issues in the 1920s. First, the advent of federal aid in 1916 and eventual creation of the federal aid highway system in 1921 required California highway officials to designate the state's "seven-percent" system.[32] Working in cooperation with the Federal Bureau of Public Roads, the state highway commission undertook a series of traffic surveys in the early 1920s that paved the way for the eventual inclusion of nearly 4,500 state highway system miles in the federal aid system.[33]

Second, state highway planners managed the careful addition of new routes to the state highway system. Operating under the new criteria for route selection, planners (and legislators) increased the state highway system to approximately

[30] Brown (1998) and Brown, et al (1999) provide detailed accounts of the debates leading to adoption of California's gasoline tax in 1923.

[31] The new criteria required potential state highways to be roads now carrying a large volume of state traffic, roads affording relief to heavy traffic on present state roads, and/or roads serving as important interstate links (California Highway Commission 1930).

[32] Between 1916 and 1925, California received nearly $17 million in regular federal aid and an additional $4.9 million for forest roads (Highway Advisory Committee 1925).

[33] Highway Advisory Committee (1925)

6,400 miles by the decade's end. Most of the new routes were added during the mid-1920s. In the meantime, the slowdown in route additions and the influx of gas tax and federal aid dollars allowed state highway engineers to make substantial progress on their construction and reconstruction activities.[34]

Progress and Challenges

The influx of significant new funding combined with the end of the prohibition against using gas tax proceeds for new construction in 1927 to considerably brighten the reports issued by the highway commission. They became less despairing about "falling behind" and more hopeful about the real construction progress being made. Engineers of the state's rural state highway system were now making substantial progress in getting most California farmers and miners out of the mud.

The issue of resource distribution was the largest problem facing the state highway program. Highway funding had initially been allocated on the basis of system need but, with most of the expensive-to-build-and-maintain mileage located in the north, this had resulted in a significant bias in favor of projects in the north. The Governor's Advisory Commission had toyed with the idea of using the same formula used for the federal program (1/3 of the funds allocated on the relative distribution of land area, 1/3 on population, and 1/3 on road mileage) which would have reduced the north's share from around 60 percent to 56 percent but the proposal was not adopted.[35]

As long as the majority of the state's population—i.e. the people footing the bill--lived in the northern 45 counties, the unbalanced geographic distribution of highway funds was not a problem. By the 1920s, however, the southern counties overtook the northern counties in population. And with the new reliance on user fees to finance the state highway program, southern California interests began to complain about the use of "their" gas tax money to build roads in other parts of the state, arguing that their own roads were being neglected. The two parts of the state reached an uneasy compromise in the Breed Act of 1927.[36] Under the terms of the Breed Act, 51 percent of construction money would be allocated to the northern counties and 49 percent to the southern counties. The compromise appeared to settle the north-south rivalry issue—but it did so for only for a short time.

North-south debates notwithstanding, the state highway program in the 1920s focused strictly on rural roads and highways, while the bulk of the taxes were paid by urban motorists. State reports frequently cited the benefits to urban

[34] Zettel's (1946) survey of highway finance and United State Bureau of Public Roads and California Division of Highways (1939) have some discussion of construction progress.

[35] Highway Advisory Committee (1925)

[36] Brown (1998) has a more detailed discussion of the geopolitical compromise of 1927—and its successor in 1947.

Californians of a statewide program in terms of economic growth, reduced prices for transported goods, and reduced travel times for motorists traveling for pleasure.[37] While there was ongoing grumbling on the part of urban officials about the rural orientation of the state program, there were no significant efforts to expand the program into urban areas. Urban governments had their own tax resources from which to draw for local roads. Prior to the onset of the Great Depression, depending largely on urban-generated revenue to finance both urban and rural roads was accepted, if not embraced, by major stakeholder interests. All that would change, however, when the mainstay of local government finance—the property tax—collapsed in the Depression.

From Long-Term Planning to Short-Term Fixes (1933-1941)

> *"It is interesting to note that funds, on a per mile basis, for State highway purposes, have declined to the level of 1927, when the gas tax was increased from two cents to three cents."*
>
> -- Frank W. Clark, Director of the Department of Public Works[38]

During the 1910s and 1920s, California engaged in long-term statewide planning activities that centered on the development of a state highway system. In the 1930s, California's focus on long-term statewide highway planning was supplanted by a short-term focus on alleviating the employment and public fiscal crises of the Depression. The state highway program was expanded to urban areas and state highway mileage more than doubled—all without any expansion of highway resources. The state engaged in an extensive statewide planning survey from 1934-1936, which helped to inform late 1930s estimates of highway deficiencies and highway needs. By the beginning of the 1940s, the state's propensity to expand its programmatic commitments without expanding its highway fiscal resources coupled with the traffic and maintenance strains of World War II to create a new backlog of highway system deficiencies and insufficient financial resources with which to remedy them.

The Crisis of the Depression

The Depression wreaked havoc on local and county government budgets as property tax revenues plummeted and local roads budgets shrank as a result. The gasoline tax, by contrast, proved remarkably resilient and there was increased pressure on the Legislature and the administration to provide some assistance to local and county governments. Simultaneously, urban groups pressured the Legislature and the administration to end the prohibition against the expenditure of state highway funds in urban areas.

In response to these cries for assistance, the state in 1933 made two significant changes to the highway program.[39] First, 6,600 miles of county roads were

[37] See California Division of Highways and US Public Roads Administration (1941) for an example of the rhetoric used by highway officials to convince the state's increasingly urban population of the benefits of a rural highway program—paid for largely by their gas taxes.

[38] US Bureau of Public Roads and California Division of Highways (1939:iii)

added to the state highway system, doubling the size of the state highway system to just over 13,000 miles. Observers at the time acknowledged that the length and locations of the new routes were more a reflection of the geopolitical struggle over resources between the northern and southern counties than a reflection of statewide highway needs.[40]

Second, state action eliminated the historic barrier to the use of state highway funds in urban areas.[41] In 1933, the Legislature required the State Division of Highways[42] to set aside ¼ cent of the state's three cents per gallon gasoline tax for the aid of state highways in cities. The Legislature went further in 1935 and instructed the Division of Highways to set aside an additional ¼ cent of the gasoline tax for major city streets.

In both cases, these decisions were made for short-term, primarily local, economic reasons and no statewide planning activity preceded the Legislature's action. And, when the Legislature and Governor made these two watershed, and enormously expensive, decisions, they made no provision for additional user tax revenue from which to provide financial support.[43] By the early 1940s, therefore, the Depression-induced local and county government fiscal crisis had been supplanted by a state-induced highway finance crisis.

The Statewide Transportation Survey and Its Results

The high point of statewide transportation planning during the 1930s—indeed the only examples of statewide transportation planning—were the 1934 California Highway Transportation Survey, the more-detailed 1936-1939 California Statewide Planning Survey, and the Highway Needs Study of 1941. The 1934 survey, conducted by the Division of Highways, presented traffic data for the (rural) state highway system, provided a general description of the conditions of rural roads in the state, and discussed the general trends of state highway finance revenues.[44]

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[39] Zettel (1946)

[40] See Zettel (1946) for a brief discussion of this reintroduction of politics into the route selection process.

[41] The state's decision to intervene in urban areas was made for two reasons: 1) the local finance mechanism (property taxes) had collapsed and the revenue shortfall needed to be made good, and 2) urban highway programs meant jobs for the masses of urban unemployed.

[42] The Division of Highways was the successor to the Department of Highways (and Department of Engineering) and was a component of the Department of Public Works.

[43] The 3¢ per gallon gas tax did not change during the 1930s. Registration, license, and weight fees were also unchanged during the 1930s. The addition of a three-cents-per-gallon use fuel tax on diesel-powered vehicles offered little relief as the proceeds were "earmarked" for the State Highway Fund for bridges in recognition of the damage the heavy diesel vehicles were doing to these facilities.

[44] Division of Highways (1934)

The Statewide Planning Survey, conducted between 1936 and 1939, focused on the same issues as the 1934 report, although in much more detail. Again, the survey focused exclusively on the rural state highway system. The report inventoried the system (width, alignment and curvature, surface type and quality, deficiencies in structures) and presented traffic data to justify the Division of Highways' contention that much of the state highway system was deficient in terms of meeting current traffic service needs. It also reported that 47 percent of the system was still not surfaced, many roads were becoming worn out and obsolete before the state could replace them and hundreds of bridges suffered from structural deficiencies. [45]

Because it also touched on issues such as the rural orientation of the highway program and the abundance of low-use roads in the system, the 1939 report was clearly envisioned as a resource for state officials and legislators, should they wish to undertake a thorough analysis and restructuring of the state highway program.[46] The report chronicled highway deficiencies but conspicuously avoided putting a price tag on the cost of addressing them.[47]

The Division of Highways and the Federal Bureau of Public Roads followed up their cooperative work on the Statewide Planning Survey with a study of Rural Highway Needs in 1941. The theme of the 1941 document was that the state highway system was under-financed, 65 percent of the miles did not meet modern design standards, and projected traffic increases were expected to cause an additional 800 miles of roads to be classified as "inadequate" by 1950.[48] The report estimated that it would cost $443 million to bring the rural

[45] US Bureau of Public Roads and California Division of Highways (1939)

[46] Unlike most of the plans produced by the Division of Highways during this era, the 1939 report considered non-engineering issues. The report noted that only 21% of state highway money was expended in cities. As a specific example of anti-urban bias, the report noted that Los Angeles County accounted for 41% of all vehicle registrations and received only 20% of state highway expenditures while Plumas County accounted for 0.2% of registrations and received 1.8% of highway expenditures (US Bureau of Public Roads and California Division of Highways 1939: 33). As an example of the abundance of low use roads in the state highway system, the report noted that 74,000 of the 99,000 miles of rural roads in the state carried less than 100 vehicles per day, while 25.7 percent of the miles carried 94 percent of traffic (US Bureau of Public Roads and California Division of Highways 1939: 13).

[47] While the report contained no cost estimates, it claimed that California motorists were paying lower-than-average vehicle taxes (US Bureau of Public Roads and California Division of Highways 1939).

[48] The report established the following design guidelines for rural state highways: 10-foot lanes, 1000-foot sight distances, one lane in each travel direction for highways that carried up to 5,000 to 7,500 vehicles per day, and four-lane divided roads for state highways that carried more than 7,500 vehicles per day. By these guidelines, 65 percent of system mileage were classified as "inadequate" (California Division of Highways and US Public Roads Administration 1941).

state highway system up to current design standards and that current highway revenues were insufficient to meet the task. While the report's authors did not endorse a particular method of raising new revenue, the report asserted at length that urban motorists derived substantial benefits from the rural highway system, suggesting a desire by the Division of Highways to quell an expected renewal of the rural versus urban debate in California highway finance.[49] Such tactical concerns over finance, however, were made moot by the onset of the Second World War.

Challenges

The 1930s were a period of increased state commitment in the highway field, but with little preparatory planning and inadequate financial resources. The focus of statewide transportation planning had shifted during the Depression from the long-range *economic* focus characteristic of early planning efforts to create the state highway system to a more *engineering* focus on chronicling (and remedying) deficiencies in roadbeds and structures and in highway capacity. By the end of the decade, it was clear that highway deficiencies—however one chose to define them—were increasing faster than highway revenues and that something had to be done to eliminate the growing shortfall. State commitments to urban areas made under the pressures of the Depression proved permanent and, by the end of World War II, urban highway planning needs began to supplant the rural program as the focal point of the Division of Highways' efforts.

Planning for Post-War Highways (1941-1955)

During the 1940s and 1950s, California made significant progress remedying the deficiencies accumulated during the 1930s and early 1940s, and the legislature and administration explicitly redefined the mission of the Division of Highways to include metropolitan freeway planning and construction. The early 1940s found state highway officials engaged in a series of detailed engineering assessments of accumulated state highway deficiencies and future state highway needs. These assessments helped inform the crucial legislative debates of 1947 that witnessed the most extensive reform of the state highway finance system since the establishment of the gasoline tax in 1923.[50]

During this crucial legislative session, two changes were made to fundamentally alter the structure of the state highway program. First, the program's fiscal condition was dramatically improved by an increase in motor vehicle user fees and the creation of a state highway account (a trust fund device) to receive and dispense highway revenues, separate from general revenue accounts. The new trust fund arrangement and the simultaneous explosion in post-war vehicle travel

[49] For example, the report claimed that more urban motorists than rural motorists actually drove on the rural state highway system, although it offered no data to support the contention (California Division of Highways and US Public Roads Administration 1941).

[50] A brief discussion of the events culminating in adoption of the Collier-Burns Highway Act of 1947 is contained in the next few pages. Those desiring a more detailed discussion and assessment should see Price (1949) and Brown, et al (1999).

enabled highway planners and engineers to make dramatic progress in remedying past deficiencies, although the pressure of increased traffic congestion meant a permanent solution to the state's growing urban traffic problems would prove illusive.

Second, the parameters of the highway program were altered when pressure from urban interests prompted the Legislature and Governor to hand responsibility for metropolitan freeway construction to the Division of Highways.[51] This decision has had long-term repercussions for the Division of Highways (and its successor Caltrans) and for the state's metropolitan areas. The previously rural-oriented Division of Highways was charged with responsibility for highway planning and construction in a setting with which highway planners and engineers were, at the time, unfamiliar. By and large, they transferred their rural highway-building practices to the cities. The result was the construction of a sparse network of high capacity—and frequently congested—facilities with very little relationship to local land use patterns, economic needs, or alternative forms of transportation. These facilities were far different than the facilities envisioned by local planners and engineers—although the cities proved more than happy to comply with Division of Highways plans in order to have the state foot the bill for these expensive facilities.

By the mid-1950s, statewide highway planning expanded to include a metropolitan—as well as a rural and inter-city—focus. The finance arrangements of 1947, paired with modest fuel tax increases in 1953 and the dramatic expansion of federal highway spending in the post-war period, to flood the highway trust fund coffers and allowed the Division of Highways to gear up for the mass production of highways and freeways. And the 1956 federal legislation that financed the interstate highway system soon inspired state officials to add a new central mission to the Division of Highways: planning and constructing an extensive statewide freeway and expressway system.

The Mission of Statewide Planning in the 1940s: Chronicling Highway Needs

As with the rest of the nation, the war years brought California's highway program to a standstill as construction materials were diverted and laborers drafted for the national war effort. State officials recognized the accumulation of highway needs and the inevitable postwar increase in motor vehicle traffic, and the legislature and Division of Highways undertook a series of extensive studies of the state's highway situation. In 1941, an Assembly Committee on State Highways, County Highways, and City Streets estimated that California highways were in need of an immediate $250 million maintenance and construction funding infusion, and that the need was likely to increase over time.[52] The Assembly

[51] A detailed discussion of this significant programmatic change and its long-term effects for the state's urban areas can be found in Taylor (1992).

[52] Dollar values are in unadjusted dollars. $250 million in 1941 is equivalent to approximately $2 billion today. See Price (1949) for a discussion of the work of this and the other special legislative committees.

Committee recommended a set of user tax increases to fund a stepped-up highway program, but the Legislature failed to act on this recommendation.

In 1944, the Senate established the McCormack Committee to conduct a thorough and careful investigation of the state's highways. This committee held a series of public hearings throughout the state and took testimony from private citizens, interest groups, and officials from the State Division of Highways. All of the witnesses agreed that California's highway system was in woeful shape, and there was near unanimous agreement that the problems of the state's highways stemmed from a lack of adequate financial resources. When the McCormack Committee reported to the Senate in January 1945, it recommended the creation of a new committee made up of members of both houses of the Legislature to more thoroughly investigate the state's highway situation and make specific programmatic and finance recommendations. Senator Randolph Collier would chair this new joint Assembly-Senate committee.

In the meantime, the Division of Highways' formal planning efforts were also devoted to chronicling the state's numerous highway engineering deficiencies and attendant highway finance shortfall. A 1942 Highway Needs Study estimated that the state's rural highway program suffered from a $25 million annual funding deficit.[53] In 1943, the Division of Highways conducted a more wide-ranging study of the state's roads that became known as the *First Critical Deficiency Report*. This report estimated that correcting rural and urban highway system deficiencies, of which there were five types (bridges, inadequate traffic capacity, points of hazard or obstruction, structural weaknesses of base and pavement, and the absence of freeways in metropolitan areas), would cost $635 million over a ten-year period.[54] The State Division of Highways estimated that the current highway finance system could only cover 39 percent of the estimated $635 million in needs.[55]

The decision to include the lack of metropolitan freeways as a critical deficiency of the state highway system was a revolutionary development. Up to this time, local governments had responsibility for freeway construction in urban areas, and state involvement had been limited to modest financial or in-kind assistance on a handful of individual facilities. The Division of Highways' decision to examine the urban freeway question was undoubtedly a reflection of the increasing demand by urban officials and motorist groups for a larger share of gas tax proceeds for the cities, where most of the tax revenues were raised. Indeed, in tandem with the Division of Highways' Deficiency Report came a heavily publicized study of highway deficiencies by the state's automobile clubs. This study estimated a $700-$870 million highway deficiency, with the wide range in deficiency

[53] Division of Highways (1942)

[54] $635 million in 1943 is equivalent to approximately $5 billion today. See Lindman (1946)

[55] Price (1949)

estimates a function of different estimates of "needed" metropolitan freeway mileage.[56]

The Collier Committee

> *"Our goal is to find a solution that will provide a balanced, integrated, and enduring system of roads and streets; one capable of serving the needs of every section of the State."* --Senator Randolph Collier[57]

In June 1945, the Legislature created the *Joint Fact-Finding Committee on Highways, Streets, and Bridges*, which soon came to be known as the Collier Committee in honor of its chairman Senator Randolph Collier. The 14-member committee was charged with: (1) determining the proper size, location, and cost of the state road system; (2) establishing an equitable distribution of these costs among the various groups of taxpayers; and (3) allocating administrative authority and financial responsibility for the highway program to the appropriate level of government.[58] This extensive charge would produce the most in-depth assessment of California's highways in the program's history.[59]

As part of the committee's evaluation, Senator Collier requested the Division of Highways to compile a *Second Critical Deficiency Report*, and this document was submitted to the Collier Committee in late 1946.[60] The Division of Highways estimated that a ten-year $1.46 billion (approximately $13 billion today) program would be required to fully modernize and make needed additions to the state highway system.[61] This was a substantial increase over the $635 million in deficiencies reported in the *First Critical Deficiency Report*. The report's content and its recommendations stand as evidence that the metropolitan freeway

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[56] This is equivalent to approximately $5 billion to $9 billion in today's dollars. See Price (1949) and Brown (1998) for a more detailed discussion of the role of the automobile clubs in the debates leading to the Collier-Burns Act in 1947.

[57] Collier (1949:10)

[58] Collier (1949)

[59] The members of the Collier Committee held sixty-four hearings throughout the state and personally inspected nearly 10,000 miles of road deemed to be particularly prone to congestion and severe accidents (Price 1949). And, the committee staff produced an analysis of the history of highway taxation in California, an independent estimate of street and highway deficiencies, and a comprehensive highway finance program designed to meet the estimated needs (Brown, et al 1999).

[60] In compiling this report, the Division of Highways made a forecast of state population and traffic conditions in 1956 and then analyzed the cost of specific improvements needed to enable the already-designated 13,000-mile state highway system to efficiently handle this level of traffic load (Brown 1998).

[61] Individual components of the report had needs which were sometimes six or seven times greater than the need estimated previously in the First Critical Deficiency Report--most notably the increased need for metropolitan freeways (Lindman 1946).

advocates had made their influence felt in Sacramento. Among the critical needs "discovered" was the need for several hundred miles of expensive urban freeways for the Los Angeles and San Francisco metropolitan areas. But, despite the protestations by rural legislators over the increasing urban orientation of the state highway program, the Collier Committee accepted the $1.46 billion state highway cost estimate as a base from which to develop its own estimate.[62]

Whereas the Division of Highways had focused solely on the state highway system, the committee's assessment focused on all roads, streets, and highways in California, including those controlled by cities and counties.[63] The committee's decision to conduct such a comprehensive assessment reflected not only the political reality that county and city officials would have a significant impact on legislative debates over the future of the state highway program, but also the notion that all California roads made up part of a larger, interconnected statewide road network. The concern for statewide transportation needs, in the views of Collier Committee members, justified a wide-ranging statewide focus.

Using a combination of data from the two critical deficiency reports prepared by the Division of Highways, needs estimates to 1959 prepared by city and county governments, and the independent analysis of committee staff, the committee estimated that the state could eliminate serious street and highway deficiencies at a total cost of $2.8 billion (approximately $23 billion today) by 1959.[64] Of this amount, state highways accounted for $1.5 billion, county roads accounted for $700 million, and city streets accounted for $600 million.[65] By contrast, the committee estimated that all units of government would raise only $1 billion over the same period—at current rates of taxation—and thus recommended large increases in all motor vehicle user fees to pay for the program.[66]

Developing A New State Highway Mission: Building Metropolitan Freeways

While the state highway system suffered from serious structural and design deficiencies necessitating an increased influx of revenues, a significant factor in the ever-escalating needs estimates was the decision to include metropolitan freeway construction as a domain of state concern. The responsibility for freeway construction had long been deemed a local matter because the benefits of

[62] Price (1949)

[63] Kennedy (1946)

[64] The cornerstone of the Collier committee program was the need for state and local freeway systems. Donald Kennedy argued that: "It is apparent on the basis of need and service to be rendered that the first requisites of the California highway transportation system is a key network of major arterial routes in the large cities" (Kennedy 1946:157). Kennedy argued that the Division of Highways was being somewhat conservative in its estimates of metropolitan freeway needs (Kennedy 1946).

[65] Kennedy (1946)

[66] Lindman (1946)

metropolitan freeway construction were viewed by state officials to be primarily local in their extent.[67] The state had contributed a modest amount of in-kind or financial aid to construction of isolated facilities such as the Arroyo Seco and Hollywood parkways in Los Angeles but had evinced no interest in planning or building metropolitan freeway systems. In fact, the Division of Highways campaigned against a larger state role in urban freeway construction in 1937 and minimized the need for an extensive urban freeway system in Los Angeles when that region unveiled an extensive freeway-transit system plan in 1939.[68]

During the 1940s, however, this position changed in response to the political realities of urban political and interest group power and the transportation reality that most of the state's ever-increasing traffic problems were centered in and around the metropolitan areas. This logic guided similar changes at the federal level where the Bureau of Public Roads began to evince an interest in metropolitan areas at roughly this same time. Thus, during the landmark 1947 legislative hearings discussed below, a metropolitan freeway program was included as an integral part of the overall highway program from day one.[69]

The Collier-Burns Highway Act of 1947

The Collier-Burns Highway Act of 1947 made the Division of Highways responsible for construction of a 475-mile metropolitan freeway system in Los Angeles and San Francisco at an estimated cost of $750 million.[70] This policy

[67] Jones (1989). There was definite inconsistency in the state's logic, especially when one recalls the earlier arguments about the urban benefits of rural roads. This inconsistency suggests post hoc rationalizing by state highway officials to conform to the wishes of rural legislators and state agricultural interests.

[68] Jones and Taylor (1987) attribute the Division of Highways' early opposition to state involvement in urban freeway construction to concerns that the department's resources were already stretched dangerously thin. They observe that: "Legislation established its responsibility for freeway construction in 1939 but the Division shied away from playing a significant role in planning metropolitan freeways or in right-of-way acquisition. In fact, California's cities were the principal advocates of freeway development, and the Division of Highways an initially cautious and reluctant participant in the metropolitan arena. In 1941, for example, local officials in Los Angeles saw the need for a comprehensive 600-mile freeway system while the state was estimating a need for a freeway system of only 100 miles" (Taylor and Jones 1987: 20).

[69] The League of California Cities, represented by its Executive Vice President Richard Graves, and the automobile clubs were especially visible during the 1947 special legislative session. In his testimony before an Assembly committee, Mr. Graves testified: "We felt rather that they (freeways) should be built by the State in conformity with a state-wide program. We proposed that allocation to the cities be withheld and reserved to the State in order that the metropolitan freeway system could be constructed as part of the overall expressway system. We believe that the urban-rural expressway system ought to be, and must be set up specifically in any highway program which we hope this legislature will adopt" (Assembly Journal 1947:117).

[70] The legislation also included provisions for upgrading over 3,000 miles of the most important rural state highways to freeway or expressway status (Collier-Burns Highway Act 1947). The Collier-Burns Act was passed at the end of a tumultuous special legislative session called by

development had a profound effect on the state and its urban areas and the Division of Highways. The state and its constituent urban areas undoubtedly derived economic benefits from the state's freeway program but urban areas also suffered negative socio-economic and environmental effects from the construction of sparse networks of massive highways that proved difficult to shoehorn into the fabric of the metropolitan landscape. The Division of Highways was thrust into operating within an urban environment with which it had little prior experience. But, while some within the Division of Highways might have been skeptical about expanding the agency's mission to include urban freeway projects, agency officials did not raise these concerns during the legislative hearings on the topic.[71]

The Collier-Burns Highway Act also codified a new geopolitical compromise between the state's ever-feuding northern and southern parts.[72] Under the terms of the compromise, the southern 13 counties were guaranteed 55 percent and the northern 45 counties 45 percent of state highway expenditures. The creation of "county minimums" also made sure that each county received a floor amount of highway aid every year. The end result of these geopolitical arrangements was relative peace between the various sections of the state, but it also served to tie the hands of the Division of Highways when it came to project selection and expenditure prioritization.

Finally, the Collier-Burns Highway Act brought about a veritable revolution in the state's highway finances.[73] Under the terms of the final bill, all motor vehicle user taxes were increased—and the proceeds were deposited into a State Highway Account whose balances were earmarked for highway construction and maintenance purposes only. The trust fund idea appealed to anti-diversion groups who, although successful in passing California's anti-diversion constitutional amendment, nevertheless had sought further protection for motor vehicle tax revenues from diversion to non-highway uses.[74] The trust fund arrangement allowed the Division of Highways to begin addressing the state's highway deficiencies. By dedicating all motor vehicle user tax revenues to the Division of Highways, the trust fund made revenues more easily predictable, thereby enabling the agency to conduct long-range statewide prioritization of

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Governor Warren who was an active and vocal advocate for a stepped-up state highway program.

[71] Price (1949) offers a detailed account of the legislative hearings in 1947.

[72] Brown, et al (1999)

[73] Brown, et al (1999)

[74] Brown (1998) offers a detailed account of the diversion debate in California.

highway projects. The federal government in the 1956 federal highway legislation instituted a similar trust fund arrangement.[75]

Gearing Up for the Mass Production of Highways and Freeways

The programmatic and financial changes enacted as part of the Collier-Burns Highway Act allowed the Division of Highways to get on with the task of building, improving, and maintaining California's roads. The agency made steady progress remedying physical and structural deficiencies but an apparent lack of adequate progress on metropolitan freeway construction, especially in the face of ever-increasing urban traffic congestion, led to a short-lived revolt by Los Angeles officials who threatened to secede from the state program.[76] A modest increase in motor vehicle taxes and a stepped up commitment to the metropolitan freeway program in 1953 brought the dissatisfied urbanites back on board.[77] And, because the flood of new traffic meant additional gas tax revenues for the highway trust fund, the Division of Highways was able to keep rural legislators relatively satisfied with progress on the rural highway system.

Looming Challenges

When the 1940s began California's highway planners and engineers were busy detailing an ever-lengthening list of highway needs and trying to stretch already thin highway resources as far as possible. Landmark state highway legislation in 1947 coupled with ever-increasing motor vehicle travel appeared to have solved the state's highway finance problem. New commitments to urban freeway construction raised new challenges for a state highway agency unfamiliar with the nuances of planning and building freeways in built-up metropolitan areas. New geopolitical arrangements reduced planning and expenditure flexibility. However, during the mid-1950s these challenges lay partially obscured by the ever-growing pot of money for highways. In the wake of the efforts at statewide planning in the 1930s and 1940s would come a signal event in the history of statewide planning in California. Undoubtedly inspired by the federal interstate highway program, California's highway planners and engineers unveiled their own plans for an extensive "intra-state" freeway and expressway system.

The Mass Production of Highways (1955-1975)

In 1959, the Legislature approved the 12,240-mile *California Freeway System* plan. The development and completion of this plan became the raison d'être of the Division of Highways during the 1960s. Highway engineers made steady progress on the plan but soon ran into a wide array of obstacles ranging from the now well-chronicled urban freeway revolts to the less well-chronicled, but

[75] Jones (1989) argues that the California trust fund arrangement was so successful that it was simply copied at the federal level in 1956.

[76] The abortive urban revolt is discussed in Adler (1989).

[77] Taylor (1992) reports the Division of Highways had constructed over 300 miles of freeway by the mid-1950s.

enormously important, highway fiscal crisis of the late 1960s and 1970s. By the early 1970s, the combination of these pressures, coupled with a growing environmental awareness on the part of many Californians, led to a fundamental shift in the focus of statewide transportation planning from a highways-only to a multi-modal focus. This shift is best exemplified by the merging of the Division of Highways into the newly created Caltrans in 1973. While the shift to a multi-modal philosophy was relatively clear in concept, putting this philosophy into practice would prove a significant challenge.

Highway and Freeway Planning in the 1950s

The influx of new highway revenues in 1947 and 1953 allowed the Division of Highways to shift from a short-range planning focus on chronicling current highway system deficiencies to long-range planning. This is not to say that the preparation of short-term deficiency estimates ceased completely. The Division of Highways produced just such a document in 1952, just prior to the 1953 legislative session that increased highway user taxes.[78]

The Division of Highways' California Freeway Program report of 1955 best exemplified the era's long-term statewide freeway planning. This short, ten-page document established several planning and construction priorities for the state's burgeoning 4,000-mile rural-urban freeway program.[79] The chief concerns of the Division of Highways were advance right-of-way acquisition for future facilities and the addition of new lanes to congested or soon-to-be-congested facilities.[80] The first step in the planning process was the preparation of long-range (three, five, and eight year planning horizons) plans at the district level. These plans were merged into a statewide plan that focused on planning connections between the various district-level plans and between California's roads and those of other states.

The California Freeway System Plan

> *"The development of a well-planned efficient highway transportation system for the future movement of people and exchange of goods is necessary to insure the future economy of California." --California Freeway System Plan 1958*[81]

By the late 1950s, California was literally awash in accumulated highway revenues. The state's highway account had a $145 million surplus in 1958, and

[78] This report, written by Richard Zettel, estimated accumulated deficiencies of $3.4 billion on the state highway system, with most of the increase in deficiencies a function of traffic increases outpacing capacity increases on the network (cited in Division of Highways 1955).

[79] The document also reviewed highway revenue projections in order to demonstrate the feasibility of project choices (Division of Highways 1955).

[80] The report observed that "(t)hroughout the preparation of the program, priority is given to: (a) the providing of adequate traffic capacity, (b) the correction of critical accident or congestion locations, and (c) the correction of structural inadequacies" (Division of Highways 1955: 8).

[81] Division of Highways (1958:16)

the 1956 federal highway legislation had unleashed a torrent of new federal aid for the interstate highway system. The rosy financial picture allowed legislators and highway planners to think about the state's highway and freeway systems in terms that would have appeared grandiose, even fanciful, a few years earlier. [82] In 1957, the Legislature adopted *Senate Concurrent Resolution No. 26* which charged the Department of Public Works and the Division of Highways with preparing a state-wide freeway and expressway plan and to present this plan to the Legislature by September 1, 1958.[83] There was a clear legislative consensus that a statewide freeway and expressway system was an urgent need if California was to accommodate its growing population and enable continued economic growth.[84] This view seemed to be shared in the governor's office, business community, highway community, and among the wider public. At the time freeways were widely viewed as the solution to state transportation problems—and the Division of Highways constructed a plan to give practical, concrete expression to these beliefs. [85]

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[82] The Collier-Burns Highway Act had created the California freeway system in 1947, and 1,330 miles of the designated 4,286-mile rural-urban system were opened to traffic by early 1958 (Division of Highways 1958).

[83] Division of Highways (1958)

[84] By 1980 state population was projected to increase 139% (from 13 million to 31 million), motor vehicle registrations were projected to increase 143% (from 7 million to 17 million), and vehicle travel was expected to increase 208% (from 65 billion to 200 billion vehicle miles of travel). These were extraordinary growth figures, which were, as it turned out, not achieved. In 1980, California's population would be 23.8 million, vehicle registrations 16.9 million, and vehicle miles traveled only 155.9 billion (all data are reported in Taylor 1992). But, when the freeway plan was adopted, most analysts viewed these estimates as quite conservative.

[85] Taylor and Jones (1987: 26-27) see the 1959 plan as being premised on the beliefs that:

1. Freeways are what the public wants—highways that are fast and safe.
2. Freeways are more costly than conventional highways, but where traffic volumes are substantial, the time and money saved by motorists using freeways is more than sufficient to justify the additional expenditure.
3. The traffic volumes on all of California's major highways will eventually be sufficient to justify reconstruction to freeway standard.
4. At present, reconstruction to freeway standards is most urgently needed in metropolitan areas and on the main trunk-line roads that connect them.
5. In rural areas, future traffic values justify reconstruction to freeway standards, and the requirements of reconstruction should be considered as interim improvements are made.
6. In metropolitan areas, freeway capacity should be sufficient to permit through-traffic to traverse the city on free-flowing facilities.
7. When freeways permit through traffic to move freely, local streets can be protected from the intrusion of through traffic and can be restored to more appropriate local use.
8. As population growth continues, additional freeway capacity will be needed to sustain free movement and the orderly segregation of metropolitan traffic. Building parallel facilities would provide additional capacity, as existing freeways became congested.

Jones and Taylor (1987) caution that these beliefs were realistic only as long as right of way could be acquired easily and the state retained the political support of local officials. Of course, both of these underlying premises would no longer hold by the late 1960s and early 1970s.

The Division of Highways produced a visionary and dramatic plan for a $10.5 billion, 12,240-mile state freeway and expressway system. The plan was premised on the belief that traffic increases would require the reconstruction of most state highways to full freeway standards.[86] Further, the plan's authors argued that "(a) highway system has the primary purpose of linking the major areas of traffic interest with high-standard facilities that provide for fast, consistently safe, protected through-traffic movement. No longer is it possible to serve such traffic on the same facilities that provide land service to abutting property. Such conflicts of interest produce the slowdowns, the highway accidents and fatalities, and the traffic congestion that blight expansion. Practically all of the traffic increase in the future must be carried on single-purpose, through-traffic facilities—relieving the present roads and streets of their existing overloads to permit them to resume their primary function of serving the land and people directly, acting as distributors for the freeway system and providing the final links between origins and destinations."[87]

In developing the plan, the Division of Highways took a long-term twenty-year view of the state's transportation needs. This long-term planning focus allowed the agency to anticipate future travel and transportation needs and cast its work in a more proactive stance—as opposed to the historic pattern of reacting to past crises which had long been the agency's hallmark. However, at the same time, the long-term planning perspective and development of a concrete plan undoubtedly locked into place many routing and design decisions that could have been handled with greater flexibility and more attention to the circumstances surrounding each case.[88]

In selecting routes for inclusion in the system, the Division of Highways relied on ten systemwide criteria (**Figure 1**).

[86] Division of Highways (1958)

[87] Division of Highways (1958) as quoted in Taylor and Jones (1987:23-26).

[88] The Division of Highways' reputation in the eyes of some critics as an unresponsive, inflexible, and oppressive bureaucratic monster was earned when it attempted to put the precepts of the freeway plan into practice, while emphasizing statewide standards and needs and at times running roughshod over local concerns. Some would argue that Caltrans is still paying a price in its relations with regional and local governments for this unfortunate experience—or people's impressions of it.

Figure 1. The Freeway and Expressway System: Ten Criteria for Route Selection

1. The system must connect the state's major centers of population.
2. The system must connect the state's primary centers of industrial activity and natural resources both with its centers of labor and materials and with its major shipping points.
3. The system must provide access to important military installations and defense activities.
4. The system must provide access to major recreational regions; national parks and monuments, and state beaches and parks; lakes; hunting and fishing areas; and to state institutions.
5. The system must connect as many seats of county government as is economically feasible.
6. The system must provide for continuity of travel into, through, and around urban areas from rural freeway approaches.
7. The system must provide for large traffic movements between population and industry centers within urban areas.
8. The system must provide the necessary capacity within the traffic corridor.
9. The system must connect with major highways of adjacent states.
10. The routes must constitute an integrated system, with a minimum of stubs or spurs, to permit general traffic circulation.

From *California Freeway System* (1958:22).

Both because of its long history of involvement in rural as opposed to urban road construction and because of the longer-lengths of intercity trips, the Division of Highways stressed the ability of the system to provide rapid through service for long distance trips. And, the concern for facilitating long-distance, intercity trips is evident in the criteria laid out for route selection. However, these trips were only a small percentage of total travel, while the bulk of the state's vehicle trips were short, local, urban vehicle trips. In the end, a system designed largely to facilitate rural intercity travel ended up having its greatest influence on urban travel. [89]

The freeway plan called for very dense systems of urban freeways and relatively dense rural route coverage as well. Urban freeways, estimated to account for two-thirds of system cost, were to be constructed on a grid pattern to facilitate region-wide travel as opposed to traditional radial highway systems that focused travel downtown.[90]

Division of Highways planners estimated that projected revenues under the current highway finance system would be more than adequate to meet the costs of the new system, although the highway agency included no cost data in its report. The Legislature charged Richard Zettel with developing the $10.5 billion

[89] According to Taylor (1992), the Division of Highways "over-estimated the role of freeways in rural areas by about 33 percent and significantly underestimated the role of freeways in metropolitan areas by about 81 percent" (72).

[90] Division of Highways (1958)

cost estimate and determining whether or not additional revenues would be needed to finance the plan.[91] Zettel concluded that, if population and travel growth forecasts were correct--and if motor vehicle fuel efficiency remained relatively unchanged--the current highway finance structure would just barely suffice to finance the $10.5 billion program.[92] Zettel's report that no tax increases would be needed to finance the program led to nearly unanimous legislative support for the plan.

Statewide Planning in the 1960s

During the 1960s, Division of Highways planners and engineers were kept busy fulfilling the state's commitment to build the Freeway and Expressway system. State highway-planning documents generally took the form of the system progress reports on the 1959 plan that were released periodically throughout the decade. These reports generally found that the highway agency was making steady progress building the system. The Division of Highways also undertook periodic statewide traffic surveys that helped in the development of new travel forecasting models.[93] The use of computer models for highway planning purposes was a relatively recent innovation although it quickly became an important component of the highway planning process during this period.

Concerns about the impact of the highway (and freeway) program on the state's metropolitan areas led to the "Governor's Conference on California's Urban Areas and the State Highway System" held in Sacramento in 1960. This conference, attended by Governor Brown, several state legislators, urban government officials, highway agency staff, and a handful of academics, focused primarily on the planning of urban areas and the relationship between local plans and highway plans.[94] Although only very modest changes in the operation of the highway program resulted from the discussions, the conference offered an opportunity to engage in a dialogue, and the substance of the dialogue offered a brief glimpse of future transportation policy in the state. Indeed, Governor Brown's opening remarks presaged the shift to multi-modal planning a decade

[91] Zettel also developed a plan cost-benefit analysis for the Legislature. Accepting the argument that the new highways would save the average motorist approximately 2.4 cents per mile in vehicle operating costs--and relying heavily on the state's traffic forecasts, Zettel projected a benefits to cost ratio of 2.5:1 (Zettel 1958: I-15).

[92] However, recognizing the fact that inflation could pose a serious problem--particularly as the gas tax and other taxes were not inflation-sensitive--Zettel advocated periodic review of the state's highway account by the Legislature to ensure the adequacy of current financial resources (Zettel 1958).

[93] The state's 1966 transportation survey was used in the development and calibration of statewide traffic models (Division of Highways 1966).

[94] Secondary topics included intergovernmental relationships, how to address urban environmental concerns, and the definition of "community values" (Division of Highways 1960a).

later.[95] Conference speakers addressed such issues as population growth projections, the changing industrial face of California, the need to consider freeways as a land use and in conjunction with other land uses, and the need to engage in planning at the metropolitan scale.[96]

While the Division of Highways was busy working on the freeway system, its planners also took time in 1960 to examine city and county road deficiencies. Their report assembled data from a detailed 1949-1955 county road study conducted by the Bureau of Public Roads, Division of Highways, and county road agencies, and the 1959 city and county road system deficiency reports. These documents were used to develop a representative estimate of needs for use throughout the state (needs were determined based on minimum engineering standards). These reports were evaluated and collated on a statewide basis, and a $13 billion road deficiency estimate was produced ($5 billion on city streets and $8 billion on county roads)[97]. The Division of Highways' planners maintained that they would not recommend a specific finance strategy to remedy these deficiencies until after the Legislature had reviewed the report. The report did help pave the way for a modest gas tax increase in the early 1960s, the proceeds from which were directed to local and county roads.

The city street and county road deficiency report strongly recommended a series of changes in planning. First, the authors called for frequent reassessment of the condition of city streets and county roads to track progress in addressing the system deficiencies. Second, they stressed the need to make these assessments in tandem with assessments of progress on the state highway system—and over the same planning horizons. These planning changes would allow the agency to review all road transportation systems on a statewide basis and facilitate statewide planning decision making. Unfortunately, these recommendations were not strictly followed, and much of this planning activity would still be undertaken in isolation from each other.

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[95] Governor Brown's address stressed the need to rely on a multi-modal approach to state transportation because there was no single cure-all for the transportation problems of all Californians. To wit: "First, our transportation plans must embrace more than highways and freeways. Second, we must recognize that our efforts to cope with the movement of large groups of people as they go about their work and play necessarily impinge on all phases of a community's life…Finally, we must understand that our highways and mass transit systems are more than links between the present points of origin and the present destinations of multitudinous individuals; they influence what our future points of origin and destination will be. They are, in other words, a positive conditioning force in shaping the future of our lives…" (Division of Highways 1960a: 9).

[96] Many of the papers would feel current if given today—only the dates and dollars would be different.

[97] Division of Highways (1960b)

The Crisis of State Highway Finance

The state highway program was dependent on the gasoline tax for the bulk of its revenue. As long as increases in vehicle travel outpaced inflation—and as long as motor vehicle fuel efficiency remained steady or even decreased—the highway finance system was in reasonably good shape. These conditions began to change in the 1960s and 1970s. Beginning in the late 1960s, the gas tax's inability to respond automatically to inflation began to be a serious issue. The nation suffered mild inflation in the late 1960s as a result of the war in Vietnam and then severe inflation in the 1970s as a result of the oil crisis. Between 1964 and 1982, the tax entered a period of substantial decline during which its buying power was eroded by well over two-thirds.[98]

The onset of inflation coupled with a public shift in the 1970s to more fuel-efficient vehicles in the wake of the energy crisis revealed the fundamental structural weaknesses of the gasoline tax at just the time inflation and new design requirements were sending the cost of highway projects skyrocketing.[99] The combination of declining fuel consumption, rising inflation, and cost inflation of highway construction, and program proliferation all demanded an immediate government policy response. However, the response was slow to materialize. Caltrans responded to the crisis by rescinding nearly 600 miles of the Freeway & Expressway system, and agency officials made it clear that other routes would have to be eliminated as well unless fuel taxes were increased and the highway program allowed to receive some of the proceeds of the state's recent extension of the sales tax to gasoline.[100] By the late 1970s, reports by the California Transportation Commission, Caltrans, and the Legislative Analyst's office painted an increasingly bleak picture of the future of California's transportation systems unless something was done immediately to raise new revenue.[101]

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[98] Brown, et al (1999)

[99] Highway construction costs grew significantly faster than general inflation both in California and at the federal level. In California during the 1960s, general inflation (measured by the CPI-U) averaged 2.4% versus 8.2% for highway construction, while in the 1970s general inflation averaged 8.7% versus 12.1% for highway construction. The rapid cost inflation was associated with a general rise in maintenance and construction costs, a scaling-up of highway design standards, increased urban right-of-way costs, and the costs of complying with federal environmental legislation enacted in the 1970s (Taylor 1992).

[100] California Department of Transportation (1975)

[101] In the spring of 1980, the transportation finance picture suddenly turned tumultuous when Caltrans made the startling announcement that the state faced a $915 million ($1.78 billion in 1997 dollars) shortfall in the five-year State Transportation Improvement Program (STIP) just adopted by the legislature (Senate Committee on Transportation, California Legislature 1980). The state's automobile clubs claimed that Caltrans was underestimating the size of the deficit and that the actual number might reach as high as $2 billion ($3.9 billion in 1997 dollars). Members of the legislature plead ignorance and blamed the crisis on Caltrans for failing to keep them informed about the state's transportation finance picture (*Journal of the Senate* 1980; Senate Committee on Transportation, California Legislature 1980).

Emerging Opposition to Business as Usual

As the 1960s wore on, the Division of Highways was battered by the emergence of the "freeway revolt." As the agency made progress on the freeway plan, it soon exhausted the relatively easy jobs, the facilities built in long-established transportation corridors or in industrial parts of the city, and began to plan and construct facilities in residential neighborhoods. As the design geometry and highway capacity were increased to accommodate the projected increases in high-speed traffic—and became reflected in much larger facilities—it became harder to integrate the facilities in the surrounding landscape without enormous community disruption. Soon, the agency found itself confronting mobilized groups of angry residents and business owners determined to halt freeway construction. First in San Francisco, and soon in other cities as well, these freeway opponents gained the attention of local political officials who used their political clout to delay or cancel once-desired highway projects. [102] The upsurge in public concern about the environment and quality of life issues, coupled with the recognition that freeways produced negative environmental effects, soon gained the anti-freeway movement a new cadre of adherents.

Within the transportation planning field, the 1960s witnessed the gradual emergence of a consensus to shift from increasing capacity in pursuit of ever-elusive free-flowing urban road facilities to accepting some congestion as a fact of urban life. Many local and regional planners began to advocate for an increased financial commitment to mass transit. Within the Division of Highways, some planners sought to shift the agency focus away from construction to traffic management and system operations. Within the agency leadership and in the Legislature, a tentative consensus emerged. This consensus favored a restrained freeway construction program (reappraise scale, more alert to potential for traffic management, transit, and ridesharing) plus increased state financial support for urban mass transit.[103] This position would find concrete expression when the Division of Highways was replaced with the much broader focused Caltrans in the early 1970s.

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[102] Jones and Taylor (1987) offer a useful description of these events. "With air pollution and community disruption salient issues on the public agenda, locally elected officials began to reassess their enthusiastic endorsement of freeway construction and metropolitan newspapers began to take issue with the 'highway bias of the plans made by the Division of Highways.' In other words, community opinion leaders were beginning to challenge the wisdom of an expansionary highway program at just the time the Division of Highways had achieved the full staffing and obtained the full funding necessary to execute freeway construction with peak efficiency. The collision of values and imperatives that followed earned the Division of Highways a reputation as an 'iron-fisted bureaucracy' that bulldozed neighborhoods and steamrollered community opposition. It also set in motion a backlash that gradually eroded political support for an expansionary highway program. Individual highway projects continued to command strong support, but the luster of the highway program itself was dimmed by the community conflict and environmental concerns of the late sixties and seventies" (Taylor and Jones 1987: 30-31).

[103] Jones and Taylor (1987)

Multi-modal Transportation in an Era of Declining Resources (1975-1992)
The passage of AB 69 in 1972 and the creation of Caltrans in 1973 marked a watershed in the history of statewide transportation planning in California. No longer would the state transportation agency's role be limited to highways, now all forms of transportation were within its purview. Statewide planning activities over the next several years would be focused on defining the parameters and direction of the new agency's transportation vision. The shifts represented a traumatic change for Division of Highways employees, and the strains were still evident two decades later.

In terms of projects and programs, the period witnessed a retrenchment of state activities in highway and road construction, expanded state involvement in mass transit, and a gradual increase in local finance and control of transportation planning. By the early 1990s, with the passage of the federal ISTEA legislation, Caltrans was once again thrust in the position of having to redefine its purpose and mission in a dramatically changed and constantly evolving transportation policy environment.

The Multi-modal Turn and the California Transportation Plan

> *"The transportation goal of the State is the development, coordination, and maintenance of a transportation system that provides the optimum capacity for the movement of people and commodities in the most efficient, time-effective, convenient, safe, reliable, and cost-effective manner consistent with social, economic, and environmental interests of the people of the State."*
>
> *--California Transportation Plan (1975)*[104]

Growing public concern about the environment and quality of life issues, political pressure from central city politicians, and the energy and developing fiscal crises of the 1970s resulted in a dramatic shift in transportation policy across the United States. The states and federal governments responded with the creation of new multi-modal departments of transportation, which were charged with taking a much wider view of transportation and its impacts than had the older state highway departments. The new state transportation departments were also instructed to be much more open to the concerns of local residents and community interests, and a wide array of community involvement and public participation processes became integral parts of transportation planning.

In California, the changed policy environment was heralded with the passage of AB 69 in 1972 and the creation of Caltrans in 1973. AB 69 required regional transportation planning agencies to develop their own multi-modal transportation plans that would then be combined into a statewide document to be known as the California Transportation Plan.[105] This requirement marked a shift in the balance of planning power between the centralized state transportation agency

[104] California Department of Transportation (1975)

[105] California Department of Transportation (1975)

and local officials. In 1973, the Legislature created a new multi-modal department of transportation (Caltrans) to replace the Division of Highways and a host of other state transportation-focused agencies.[106] The Legislature charged Caltrans with the task of developing the state transportation plan and with putting its recommendations into practice.

Not surprisingly, the new agency took a number of years to define its mission and develop a new multi-modal state transportation planning process. In 1974, the agency published its California Transportation Progress Report, which laid out its general policy goals and approach. Four general policy goals were determined to be paramount in guiding the future direction of California transportation: energy conservation, air quality improvement, reduced auto dependence, and the maximization of travel opportunity.[107] The new agency also emphasized flexibility and direct local and regional participation as critical components of the state transportation planning process.

The document also outlined four characteristics of the new Caltrans planning philosophy. First, the overarching objective was to develop transportation facilities and services that met California's needs. Second, the agency would emphasize the efficient and effective use of all transportation facilities and resources. Third, the agency would respond to the particular transportation needs and desires of each distinct geographical area. Fourth, the agency would develop a continuous, comprehensive multi-modal transportation planning process that involved the public, the private sector, and all levels of government.

In 1975, Caltrans released the Draft California Transportation Plan, which laid out the premises and objectives underlying future state transportation policy and planning and presented legislators with the choice of four future transportation policy directions.[108] The fundamental premises behind the state's transportation planning process are shown in **Figure 2**. They represented a dramatic break with past practices—to such a point that the political feasibility of their realization was very much open to question. The plan also laid out four scenarios for legislators to choose from in developing a transportation policy direction for

[106] Much of the stimulus behind the decision to create Caltrans was associated with the ever-apparent mismatch between the needs of the state's urban areas and the traditional approach to state highway policy. Jones and Taylor (1987) argue that legislators envisioned little change in the rural highway program. Further, they claim that Caltrans "was created to carry forward the work of the Division of Highways, but with a restraint that had not characterized its predecessor agency, and with a multi-modal perspective that it had also lacked. In this sense, the purpose of creating Caltrans was to internalize the conflict over urban freeway development within an agency that could produce more responsive and less invasive highway plans because it was equipped with the mandate, tools and authority to do so" (Taylor and Jones 1987: 34). However, the policy shift, the seemingly divided mission, and limited state transportation resources all combined to introduce a certain degree of confusion and organizational malaise in Caltrans.

[107] California Department of Transportation (1974)

[108] California Department of Transportation (1975)

California. These were: maintain and operate current system, energy conservation and air quality, reduce dependency on auto, and maximize mobility and modal choice, each of which entailed different investments in the highway and transit systems of the state. Rather than take a position on these scenarios, the report assessed the strength and weaknesses of each policy in terms of meeting the state's general transportation policy objectives (noted above) and the additional financial resources needed to enact them.

Figure 2. Premises Underlying the 1975 Draft California Transportation Plan

1. Land use and transportation decisions must be more closely tied together.
2. An increase in population will put greater demands on transportation
3. Additional funding is vital because funding levels for State and local roads are not sufficient to preserve the public's investment
4. The funding sources and allocation process should be brought in line with today's needs and priorities.
5. The Streets and Highways Code should be revised to minimize allocation inequities among counties and between counties and their cities.
6. The state should eliminate north-south split and county and transportation district minimums, and substitute a control formula under the California Transportation Plan for county groupings (similar in principle to the district minimums).
7. The public transportation needs of non-auto users are acute and require immediate state attention and financial assistance.
8. Peak period congestion on urban highways, roads, and streets and major airports will continue to worsen regardless of the emphasis placed on other modes of travel.
9. Transportation facilities should be planned to minimize consumption of prime agricultural land and facilitate the movement of agricultural products.
10. Air quality in California will be dramatically improved in the next 20 years primarily due to emission control standards for automobiles.
11. If transportation energy consumption were to be substantially reduced within the next five years, the most effective action would be in the area of implementing strong disincentives to auto travel.

From *Draft California Transportation Plan* (1975)

As part of the California Transportation Plan development process, the California Transportation Plan Task Force produced a new planning document outlining *Recommended Statewide Transportation Goals, Policies and Objectives* in early 1977. This document took the basic position that current state transportation policies had been designed in the 1950s when the state faced very different types of transportation challenges, specifically the need for an interconnected highway system. Current policies no longer sufficed in the current era when the state's transportation problems included finance and resource pressures, traffic

congestion, environmental concerns, and the fact that many Californians had no access to a car. [109]

The 1977 report began with an in-depth discussion about the role of government—and of the different levels of government—in the state transportation system. The overall theme of the report was that government's role should be limited to situations where government action was required because the side effects of transportation decisions were ignored by private actors and to ensure equitable access to transportation resources.[110] The state role would be limited to resolving differences in regional transportation plans around issues of statewide interest. The state would be required to act when economies of scale required the state to be the political jurisdiction of action, when the public wished to use transportation policy to correct social inequities, when the side effects and negative spillover effects of transportation projects extended beyond the local and regional scale, and when there were harmful cumulative effects from a series of regional or local actions that individually appear insignificant.[111] In all other cases, transportation was presumed to be a local and/or regional responsibility, and transportation decisions were placed within the purview of those levels of government.

The 1977 report also laid out a series of themes to guide the direction of future state transportation policy. First, basic transportation service should be available to all Californians. Second, planners should emphasize better use of existing transportation resources rather than concentrating on additions to current capacity. Third, planners should consider social, environmental, and economic effects during planning and project selection. Fourth, planners should rely on market incentives and competition as opposed to regulation to protect the environment, conserve natural resources, and reduce transportation costs. Regulation should be a tool of last resort—employed only when absolutely necessary. Fifth, the report strongly recommended the use of user charges as the principal element of the transportation finance system—for reasons of efficiency and equity. Finally, the report emphasized the need for flexibility in terms of project selection and significant public participation in the planning and decision making process.

[109] California Transportation Plan Task Force (1977)

[110] This relatively narrow view was expanded to permit government to act when the private market produced a monopoly situation, when the market does not provide adequate information on safety and other transportation service characteristics, when the private market does not adequately provide for long-term future community needs, when a service is needed for community benefit which the private sector cannot be expected to provide, and to ensure transportation projects had no irreversible negative effects on unique natural resources (California Transportation Plan Task Force 1977).

[111] California Transportation Plan Task Force (1977)

By the end of the 1970s, Caltrans had developed (or been presented with) a set of policy goals and planning principles to help it embark on the new era of collaborative statewide multi-modal transportation planning. The challenge would be to change the internal culture of the agency to allow these goals and principles to be put into everyday practice.[112]

Statewide Transportation Planning in the 1970s and1980s

As noted above, the 1970s witnessed the emergence of a new multi-modal department of transportation and the first tentative efforts of this agency to define its mission in state transportation. In the highway program, the 1970s were a period of drastic retrenchment. Although the abandonment of the state freeway plan is often attributed to the administration of Democratic Governor Jerry Brown new highway construction began a precipitous decline under Brown's predecessor, Ronald Reagan, and continued to decline under his Republican successors. The decline was prompted by drastic reductions in the buying power of highway revenues (in the face of inflation, increasing vehicle fuel efficiency, and legislative reluctance to increase taxes), escalating highway construction costs, and increased opposition to new highway construction by local politicians, activists, residents, and environmental groups.[113] During this time, the state began to eliminate controversial segments of the freeway plan during the early and mid-1970s and abandoned any pretense that the remaining routes could be built during the late 1970s.

The 1980s and 1990s posed a series of challenges for Caltrans. In 1981, SB 215, which provided long-sought additional transportation finance revenue, decreed that the agency shift its priorities to system maintenance and reconstruction and away from the construction of new facilities.[114] The shift in mission and focus has been an abrupt one and contributed to the poor agency morale chronicled by observers in the mid-1980s.[115]

With the abandonment of the state's freeway plan, the driving force behind statewide transportation planning for nearly twenty years, the focus of statewide

[112] Jones and Taylor (1987) report on the challenges Caltrans faced putting the rhetoric of the new plans into practice.

[113] Taylor (1992)

[114] As Jones and Taylor (1987) observe, SB 215 established the following order of priorities:

1. Maintenance, rehabilitation, and reconstructing of the existing highway system for the purpose of protecting the public's investment in the system.
2. Safety improvements for the purpose of reducing the number and severity of traffic accidents.
3. Operational improvements to the existing system for maximum service efficiency.
4. New construction.
5. Other purposes, including landscaping planting, litter pickup, and compatibility improvements.

[115] Jones and Taylor (1987)

planning returned to the job of chronicling and projecting deficiencies on the established state road systems. This is exemplified by the 1984 California State Highway System Plan Report whose style is illustrative of most state-level transportation planning during this period.[116] The report estimated traffic on the state highway system, determined levels of service on the route segments, and calculated the amount of money required to bring the system up to various specific levels of performance—all in a rather transparent effort to convince the Legislature that additional resources were required for transportation. Caltrans produced similar plans for highways and transit throughout the decade, and, like so many plans prepared in earlier decades, the plans focused on the need for additional resources for transportation.

The ongoing lack of resources to implement plans and eliminate deficiencies caused Caltrans to, gradually and reluctantly, abdicate its dominant role in highway planning and development. Beginning in 1980, local governments turned to the voters for relatively small sales tax increases dedicated to transportation. Between 1980 and 1990, eighteen mostly urban California counties adopted sales taxes to finance a wide variety of highway, transit, and other transportation projects. With the new local finance source came a new local assertiveness in planning and project selection and increased pressures for more local and regional control over state transportation finance revenues.[117] These measures caused a few of the greatly empowered existing county transportation agencies to take lead roles in the promulgation of urban highway projects. These relatively well-heeled county agencies complicated the hierarchically nested process of project prioritization that had evolved between the metropolitan planning organizations and the California Transportation Commission. The addition of local funding introduced new players in this process and frequently shifted project priorities to reflect local desires.

The passage of the *Transportation Blueprint for the 21st Century* package of bonds and user tax increases in 1989 brought $18.5 billion in additional transportation resources to state and local transportation agencies over ten years.[118] The *Blueprint* included a proposal for the creation of an Interregional

[116] California Department of Transportation (1984)

[117] The shift to local finance was the beginning of a revolution in state-local relations that has been accelerated with ISTEA and TEA-21. The question of the appropriate state role in transportation is once again a debated issue. In a system of complete devolution, the state role may be non-existent or limited to aiding in right-of-way acquisition, the provision of construction and engineering services, and perhaps some sort of fiscal partnership in county-controlled programs (Taylor and Jones 1987).

[118] The legislation was passed by the Legislature in 1989 and approved by the voters in 1990. The passage of the Blueprint was driven by public concerns over growing traffic congestion and was given an added push by the Loma Prieta earthquake which severely damaged transportation infrastructure in the Bay Area. The package was strongly endorsed by local governments and the state's automobile clubs.

Road System to consist of 3,300 miles of the most important state freeway and highway routes. The $3 billion Interregional Road System plan was unveiled in 1990. The plan contemplated the eventual development to freeway or expressway standards of the 3,300-mile system, capacity addition on critical trunk-line routes, and modest design upgrades on an additional 1,800 miles of "priority routes" not formally part of the interregional system. While the report's authors assert that the interregional road system was developed as part of a long-range statewide planning effort, the report is clearly structured as an amalgamation of loosely connected, locally desired highway projects.[119] This is very different from the 1959 Freeway and Expressway System Plan that focused on defining long-range goals and needs and then structured a transportation system around these goals.

ISTEA and its Aftermath

New federal surface transportation legislation in 1991 and 1998 introduced changes in the federal transportation program that have increased the challenges faced by state departments of transportation. Federal legislation has shifted the balance of power between state and regional transportation agencies by granting the regional agencies a significant degree of financial and planning independence. ISTEA and TEA-21 have changed the role of state departments of transportation to a statewide coordinator of metropolitan area plans, overseer of rural and inter-city transportation concerns, and compiler of these various components into a single long-range (twenty-year) planning document.[120] These policy changes have caused a great deal of tumult in long established inter-governmental relationships between local, regional, state, and federal transportation agencies, and have left many state departments of transportation

[119] The authors of the plan go to great lengths to assure readers that local input was very important in the selection of routes included in the system. This was undoubtedly the case—given the very "list-like" tone of the document (California Department of Transportation 1990).

[120] Consultation, coordination, and consistency are the bywords of the new statewide long-range planning inaugurated by ISTEA. State departments of transportation are required to produce the statewide planning documents in close consultation with metropolitan planning organizations and local and regional governments. The state is specifically required to consider the concerns of local elected officials in developing and carrying out its planning activities (23 USC 135). The state role with respect to metropolitan transportation planning is to act as coordinator of the various metropolitan plans. And, the state is responsible for ensuring plan consistency with the overall transportation objectives established in the federal legislation. This objective is to develop and include transportation projects that will: "(a) support the economic vitality of the United States, the States, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency; (b) increase the safety and security of the transportation system for motorized and nonmotorized users; (c) increase the accessibility and mobility options available to people and for freight; (d) protect and enhance the environment, promote energy conservation, and improve quality of life; (e) enhance the integration and connectivity of the transportation system, across and between modes throughout the state, for people and freight; (f) promote efficient system management and operation; and (g) emphasize the preservation of the existing transportation system" (23 USC 135c).

struggling to redefine their purpose and mission in a new and radically different planning and policy environment.

Caltrans and many other state departments of transportation have worked hard during the 1990s to redefine their role in statewide transportation issues—and to at times argue in a rearguard fashion that a statewide focus on transportation is a necessary and desirable thing.[121] Caltrans' first post-ISTEA plan, the 1993 *California Transportation Plan*, testified to the agency's uncertainty as to its new role and responsibilities.[122] The plan embraced ISTEA's rhetoric about intergovernmental partnerships, the need for a multi-modal transportation approach, and the need to balance transportation needs with environmental concerns.[123] And, like the *Blueprint*, the plan at times reads like a laundry list of potential state transportation policies and objectives.[124] Reading the document one gets the impression of an agency tentatively and hesitantly casting about for its future direction.[125]

The 1993 plan concluded with a series of recommendations for the development of specific state transportation policies. Specifically, the plan's authors recommended the creation of a commission to address the future of transportation in California,[126] the development of a statewide goods movement

[121] Many state departments of transportation undoubtedly fear being completely cut out of metropolitan transportation.

[122] California Department of Transportation (1993)

[123] The authors maintain that the document, and underlying planning vision, are founded upon the following premises: traditional approaches to transportation development are outmoded… traffic (growth) is expected to continue into the future...international trade will become increasingly important to California's prosperity… (and) environmental and societal considerations must be important drivers in determining future state transportation policy (California Department of Transportation 1993).

[124] The document outlines three policies and then introduces a long list of projects, programs, and/or objectives under each. The three state transportation policies are:

1. Transportation decisions will promote the economic vitality of California by providing for flexibility in choice and mobility of people, goods, services and information.
2. Transportation decisions will provide all Californians with safe, convenient, reliable transportation systems.
3. Transportation decisions will protect the environment and promote energy efficiency while improving mobility. (California Department of Transportation 1993)

[125] Once could also read the document as the product of negotiation among Caltrans, other government agencies, and interested stakeholder groups—and it undoubtedly was. The document was prepared in 1993 but was not accepted by the federal government until 1995.

[126] The authors argued that: "A long-range view for California's transportation system is critically needed. A Commission to set a road map for the future of transportation in California should be established by the Governor. The membership of the Commission should be comprised of bipartisan business and governmental leaders and supported by transportation, environmental and new transportation technology interest groups. The Commission's effort should be completed within one year after the Commission is convened" (California Department of

strategy,[127] and—in order to remove some of the persistent uncertainty in planning and programming—a detailed analysis of the roles and responsibilities of all state-level agencies involved with transportation. The need to explicitly define the transportation planning roles of state government agencies was particularly important, because: "(a)lthough Caltrans became the State's multi-modal transportation agency in 1972 the appropriate role and authority of Caltrans and the State agencies with transportation responsibilities such as the California Transportation Commission (CTC), California Public Utilities Commission (CPUC), California Air Resources Board (CARB), the California Highway Patrol (CHP), and the California Energy Commission (CEC) are not well defined in telecommunication, rail, transit, maritime, or aviation. This presents real difficulty to the State's timely performance in a multi-modal capacity, and to the implementation of interregional transportation agencies' decisions other than for highways." [128]

The 1993 plan's recommendation that a special commission be appointed to examine the future of transportation in California found realization with the appointment of the Commission on Transportation Investment in 1995. This bipartisan commission included state and local elected officials, transportation agency officials, transportation academics, and representatives of business, environmental groups, taxpayers groups, and transportation system user groups. The commission, staffed by Caltrans, delivered their recommendations to the state in early 1996. Among their numerous recommendations were calls for institutional reforms to clarify the responsibilities of different governments and agencies in state transportation planning, studies to establish a new method of determining state transportation system needs, and a host of other recommendations on issues ranging from methods of finance to calls for devolution to the need for transportation technology development.[129] Few of the commission's recommendations were immediately adopted although some of the ideas found expression in Senate Bill 45 adopted in 1998.

The adoption of Senate Bill 45 introduced new changes in the structure of the state transportation program. The overall theme of the legislation was the need to increase local and regional flexibility over the use of transportation resources and greater local and regional control in project selection and design. The author of the bill, Senator Quentin Kopp, argued that SB 45 represented a veritable revolution in transportation planning. Senator Kopp argued that the legislation brought the planning process closer to the voting public and paved the way for

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Transportation 1993). What became known as the Commission on Transportation Investment (CTI) was the commission recommended in the plan.

[127] Caltrans unveiled a statewide goods movement strategy in 1998.

[128] California Department of Transportation (1993)

[129] Commission on Transportation Investment (1996)

the greater use of local taxes for transportation, including sales taxes, general obligation bonds, and regional gas taxes. [130]

The end result of the combination of ISTEA (and TEA-21) and SB 45 has been a fundamental restructuring of the balance of power between Caltrans and local and regional governments over transportation issues. In the 1950s and 1960s, the state Division of Highways was able to go about its task of meeting its definition of state transportation needs, with a clearly constrained local role in the planning process. In the 1970s and 1980s, Caltrans stressed the need for cooperation and intergovernmental partnership but many local critics argued that rhetoric about cooperation was all about style and had very little substance. In the post-ISTEA era, however, the rhetoric became reality.

Since the passage of SB 45, Caltrans has prepared a handful of statewide transportation planning documents, including a multi-modal interregional Transportation Strategic Plan.[131] This 1998 plan does not provide a detailed set of specific transportation projects—as most recent plans have—but rather offers a glimpse into the agency's current conception of its role in statewide transportation planning, post-ISTEA and SB 45.[132] This role would appear to be limited to a focus on interregional movement of goods and persons.[133] A large amount of the plan focused on establishing guiding principles, overall statewide transportation policy goals, and specific goals and objectives for Caltrans' interregional planning activities.[134] The document demonstrated that officials at Caltrans are engaged in a conscious and concerted effort to rethink the agency's place in today's changed transportation environment, and that the agency is still struggling to define its post Division of Highways role. For an agency that enjoyed its greatest programmatic successes and highest levels of agency morale during the stable transportation-planning environment of the 1950s and early 1960s, the last twenty-five years has brought one unsettling policy change after another.

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[130] Brown and Garrett (1998)

[131] This plan included an in-depth discussion of issues related to state highways and brief discussions of issues related to intercity passenger rail, interregional highway system grade separations, and mass transit guideways.

[132] The 1998 Plan incorporated "new visions, strategies, principles, objectives, and criteria for operating, developing, and improving interregional transportation facilities and services (and) the plan encapsulates and communicates key pieces of Caltrans' ongoing long- and short-range planning for the state highway, interregional road system and intercity rail system…(It) describes and communicates the framework in which the state will carry out its responsibilities for (interregional transportation)" (California Department of Transportation 1998:1-2).

[133] California Department of Transportation (1998)

[134] Eight key principles guide the 1998 plan (California Department of Transportation 1998):

1. California's transportation process relies on open communication and an ongoing cooperative relationship between all members of the transportation community.

Conclusion

California has had a long history of statewide transportation planning, but the review of the plans presented in this paper demonstrates that the state transportation agencies have generally practiced a crisis management, or triage, style of transportation planning. The past century of statewide transportation planning in California has been characterized primarily by the irregular production of reactive plans focusing on fiscal shortfalls and project backlogs. In other words, state transportation "plans" have been backward looking; they have been tools to lobby for increased funding to complete already adopted projects.

The *California Freeway System* plan was the great exception to this generalization. It was ambitious, visionary, and captured the imagination of the motoring public and its elected representatives. The power of this plan unleashed an unprecedented era of transportation investment in California. The scale and rapidity of freeway construction is seen by some as evidence of the potential of concerted public action, and by others as evidence of the dangers of unchecked government power.

The abandonment of both the *California Freeway System* plan and the Division of Highways in favor of a fiscally-constrained, multi-modal California Department of Transportation resulted in a series of planning efforts in the 1970s to redefine the role of the state highway department and develop a more collaborative model of transportation planning. These early efforts produced some thoughtful appraisals of the appropriate state role in transportation planning and development, but these appraisals have had little obvious connection to the more programming-oriented plans that followed in the 1980s and early 1990s.

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2. Caltrans has primary responsibility for the interregional mobility of people and goods. Regional and local agencies have primary responsibilities for regional and local mobility and for actions to manage commute and other congestion in their areas. Larger metropolitan areas are responsible for managing interregional commute congestion within the Transportation Management Area.
3. The rural areas of the state contribute to the state's economic well-being and quality of life.
4. Connecting people and goods to growing urban centers, urbanized areas and major gateways is vital to the economy and quality of life in California.
5. Movement of goods and service into and through urbanized areas and gateways and to intermodal facilities is a critical component of the interregional program.
6. The designated interstate system is the backbone of the state's transportation system for interregional, interstate and international goods movement, access to seaports, air cargo terminals and other intermodal transfer facilities. Improvements within major gateways in urbanized areas will often involve interstate routes.
7. Key segments of the state highway system are incomplete or underdeveloped. These will be developed to minimum facility standards as programming priorities allow, considering a range of qualitative and quantitative planning and operations factors.
8. Intercity rail is an important component of the state's interregional transportation system.

The passage of ISTEA and TEA-21 at the federal level coupled with the passage of SB 45 at the state level have compelled Caltrans to again reconsider its role in the state's transportation system. In particular, Caltrans has been forced to reconsider its role in urban transportation. While it is unlikely that California will return to the days when the state role was limited exclusively to a limited system of rural, interregional highways, a fundamental rearrangement of the roles and responsibilities of state and local governments in metropolitan transportation has taken place. Still to be determined are the specifics of these new inter-governmental relationships, and Caltrans' place within them.

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