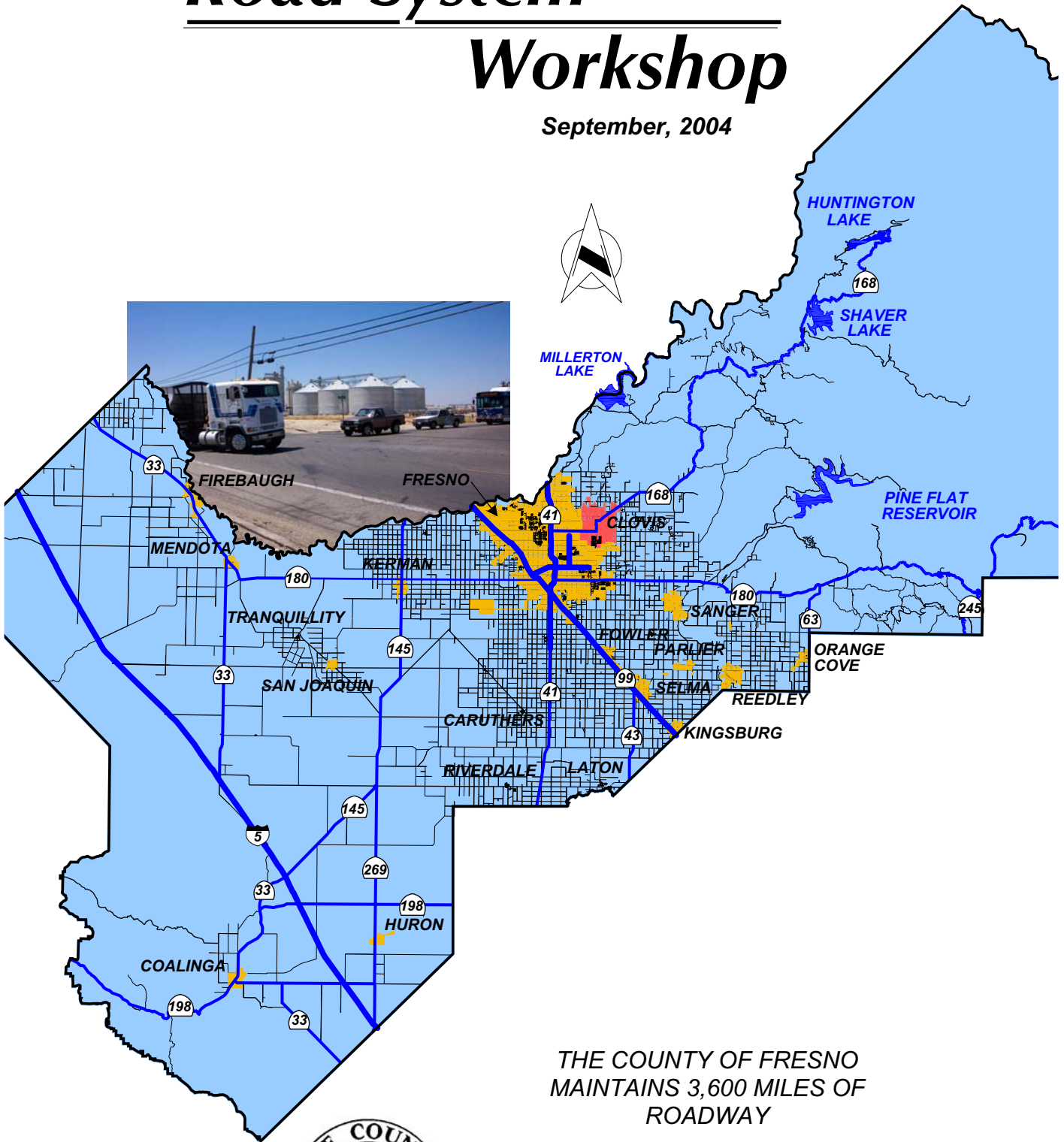


Road System

Workshop

September, 2004



Department of Public Works & Planning

Fresno County Board of Supervisors

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EXECUTIVE SUMMARY

The County of Fresno, with 3,600 miles of road and 547 bridges, is the largest county road system in California. The total worth of the road system is estimated to be approximately \$1.5 billion. The County's road system is the major transportation system for our \$4 billion annual agricultural economy. The system provides a farm-to-market highway system, links cities and unincorporated communities within the County, and serves all of the business community, as well as providing public mobility to almost every point in the County.

In the early 1990s, Measure C, Proposition 111, and a new approach to federal transportation funding brought new funds to transportation at all levels. However, when adjusted for inflation and system use, this increase represented only a minor offset to years of declining revenue since the high-investment years of the 1960s and early 1970s. While more funds became available overall during the early 1990's, the majority of the gas tax increases under Proposition 111 were directed to the State coffers. Rural counties' direct allocation under the 1991 federal Intermodal Surface Transportation Efficiency Act (ISTEA) was frozen (and remains today under TEA-21) at 110% of the 1990 allocation. At the same time, special and competitive programs proliferated, and federal oversight and review became ever more restrictive.

By the late 1990s, there was widespread recognition in California that transportation investment was failing to keep pace with the increasing demand at all levels. In addition to lack of funds for congestion and safety improvements, basic maintenance needs were not being met. Decades of deferred maintenance were accelerating the need for extensive system rehabilitation. The public responded in 2000 by overwhelmingly passing Proposition 42, which directs funds to cities and counties, as well as to the state highway and public transit systems. However, within a few months of passage, the state was already proposing to suspend Proposition 42 funds to address a looming budget deficit. The state's share of Proposition 42 was suspended the following year, and funds to local agencies have been under threat of suspension since 2002/03, and were actually suspended in 2003/04. The State's 2004/05 budget continues the suspension of Proposition 42 funding this fiscal year.

Proposition 42, although not a complete answer to the transportation funding shortfall, addressed two very important concerns of local agencies' funding needs. First, the need for dollars that were reliably available over time, and second, funds that were discretionary to allow agencies to fund their priority maintenance and rehabilitation needs. The suspension of Proposition 42, and the uncertainty that still surrounds State

transportation funding, is undercutting the very stability that Proposition 42 was intended to provide by placing both local maintenance programs and major highway projects, such as Friant Road, in funding limbo. The withdrawal this year of Proposition 42-mandated Maintenance of Effort funds that have historically supported the road program (\$2.2 million), the potential sunseting in 2006/07 of both Measure C (\$3.6 million per year) and Forest Reserve full payment funding (\$1.2 million per year), and uncertainties still surrounding the Proposition 42 “gap” and repayment schedules make it difficult to predict with any certainty whether there will be any improvement in the funding outlook over the next few years.

On the positive side, the Governor has made repayment of borrowed transportation dollars, from both local governments and State Transportation Funds, a priority in his negotiations with Native American Tribes for the new Indian gaming compacts, and increased State revenues have led to state recommendations for increased repayments out of marginal revenue increases over the original budget projections. However, the late State budget and changing financial outlook re-opens the prospect of possibly receiving Proposition 42 local funds this year as advanced repayment for last year’s suspension, even as the 2004/05 budget suspends this year’s Proposition 42 funding, and structural State funding issues remain unresolved. The still-changing snapshot could result in mid-year funding dilemmas for local agencies such as Fresno County, who have already approved a very rigorous budget assuming that the Maintenance of Effort requirement was suspended with the suspension of Proposition 42 funds.

The Department of Public Works and Planning also expects that, ultimately, Proposition 42 will be reinstated following stabilization of the state budget, and at a much higher funding level once the Traffic Congestion Relief Program (TCRP) projects are no longer drawing down Proposition 42 dollars. This will be accomplished by either completion of TCRP projects, or by removing TCRP projects from their statutorily protected position.

Nevertheless, these funding permutations do not change the underlying fact that the road system’s overall deterioration still threatens the County’s roadway capital improvement investment of the last forty years, and the county’s ability to insure the transportation component of job creation. Without adequate road maintenance, the county’s \$450 million investment (current worth of only reconstructed roads) will cost five times as much to reconstruct as compared to adequate preventive maintenance.

The following report describes the sources of revenue available to fund maintenance of the existing system and to make needed improvements for mobility, access and safety. It summarizes the impacts of decreased maintenance as fewer revenues become available to maintain the system and to fund infrastructure improvements necessary to accommodate increased traffic.

The report describes how the road system – its condition and service adequacy - is a significant factor to the overall economy of the County and this region’s ability to attract

and retain jobs. This report shows how road reconstruction returns roughly a four-to-one benefit to cost ratio.

The report also shows how the County's ability to improve roads to current safety and operational standards is severely curtailed by funding constraints. Currently the Road Improvement Program (RIP) funds no reconstruction projects with local funds, and is only able to fund road reconstruction or widening with special or grant funding.

The report also serves as a guide to the Department of Public Works and Planning's management and operation of the largest county road system in the State, and how our system coordinates with and compliments the planning and management efforts of our partner agencies. Finally, this report summarizes the challenges we anticipate necessary to provide transportation facilities that meet the San Joaquin Valley's growth and economic needs, in a dynamic transportation funding and regulatory environment.

Andrew E. Richter, Interim Director

Department of Public Works and Planning

September 20, 2004

FRESNO COUNTY ROAD SYSTEM

NEEDS & ISSUES

◆ **DECLINING ABILITY TO MAINTAIN ROADS**

- *\$25 Million Annual Shortfall*
 - ✓ *\$15 million reconstruction program shortfall*
 - ✓ *\$10 million preventive maintenance shortfall*
- *Replacement costs are five times the cost of preventive maintenance*
- *Heavier vehicles and increased truck use elevate maintenance costs of major roads and severely impact minor roads.*
- *Excise taxes are not adjusted to offset increases in capital, material, and labor costs*
- *Dramatic increase in oil and aggregate prices affect asphalt and road oil cost, translating to fewer miles of road being paved.*

◆ **REDUCED FUNDING FOR RECONSTRUCTION, IMPROVEMENT, AND EXPANSION OF ROAD SYSTEM**

- *Over 1,000 miles of the county's 1,550-mile major road system, and most of the 2,000 mile local road system, are not built to current safety or operational standards for two-lane roads.*
- *90 miles of rural county roads are expected to need widening to four lanes by 2030, of which only 7 miles (on Academy Avenue) are currently funded.*
- *Local dollars are no longer sufficient to fund reconstruction projects on county roads.*

◆ **INCREASED FUTURE DEMAND**

- *Use of Fresno County roads will increase over 55% by 2025, to over 7 million vehicle-miles traveled each day.*
- *Regional mobility and access to transportation systems are key requirements of business and industry for job retention and creation.*
- *Truck use will continue to increase at a greater rate than overall traffic, taxing a system largely not designed for such use.*

◆ **SAFETY**

- *Accident rates are significantly higher in Fresno County than elsewhere in California due to characteristically higher accident rates on non-standard rural roads.*
- *Nationally, 61% of all fatal accidents occur in rural areas, although there is more travel in urban routes. In Fresno County, over 70% of fatal accidents occur on rural State and County roads, primarily on two-lane undivided roads.*
- *County-maintained rural roads account for over 44% of all fatal accidents in Fresno County. 90 people were killed on County roads in 2003.*
- *2004 GAO report on Rural Road Safety Challenges found that narrow lanes, inadequate shoulders, sharp curves, roadside hazards, and other conditions typical of unimproved rural roads contribute to high accident rates.*
- *Substandard road conditions, such as are prevalent on rural Fresno County roads, were the direct cause of 15%, and a contributing cause to 30% of the over 42,000 highway deaths in 2000, according to a Federal Highway Administration and National Highway Traffic Safety Administration study.*
- *2,604 reported accidents on Fresno County roads in 2003 are estimated to have cost the public \$326 million.*

◆ **REGULATORY ENVIRONMENT**

- *Air Quality Non-Attainment Area status and conflicting EPA and FHWA regulations place transportation dollars at recurring risk if conformity lapse or freeze occurs in any of the 8 Valley Air District Counties.*
- *Environmental review under National Environmental Protection Act (NEPA) for federally funded projects continues to lengthen despite national commitment to streamlining in 1997.*
- *Lack of oversight and clear guidelines for federal agencies involved in environmental review results in redundant and subjective requirements that do not contribute to environmental protection, but drive up costs.*
- *New Funding programs are increasingly competitive and narrowly focused, rather than providing direct allocations, requiring high levels of federal and state oversight and review, and a high level of local investment in processes with no guarantee of funding return.*
- *Project delivery becomes problematic as projects take years to develop, leading to changing climates of public acceptance or support.*

FRESNO COUNTY ROAD SYSTEM

NEEDS & ISSUES (cont'd)

FUNDING

HISTORICAL TRANSPORTATION FUNDING METHODS ARE INADEQUATE TO CONTEND WITH NEW GROWTH, CONGESTION, AND CONTINUED SYSTEM DETERIORATION AND MAINTENANCE SHORTFALL:

- ◆ ***Decreasing value of gasoline and diesel excise (per-gallon) tax revenues results in system-wide infrastructure funding shortfalls***
 - *Fuel excise taxes not indexed to inflation results in declining value, especially relative to increased use.*
 - *New state and national funding strategies not in place to reflect alternative fuels and increased-mileage fleet changes over the next decade, which will further erode the value of gas excise taxes.*
 - *Increasing use of funds for vehicle and transit programs, which were historically earmarked for infrastructure, with no increase in total funding, or reduction in need for infrastructure.*
 - *Increased local reliance on sales tax, development fees, and other local measures to address transportation deficiencies.*

- ◆ ***Rural areas and local agencies receive less than proportionate share of Federal and State funds collected for transportation purposes:***
 - *Federal guaranteed funding to rural counties at same level as in 1991.*
 - *Rural road system's role in local and regional economies not recognized in funding formulas or criteria weighted to population.*
 - *Local agencies do not receive truck weight fees despite heavy truck use on rural roads.*
 - *The last major state fuel excise tax increase in 1991 provided an additional 7 cents per gallon to the State, and only 1 cent each to cities and counties.*

- ◆ ***Local sales tax measures increasingly difficult to pass Statewide due to 2/3 voter approval requirement and widespread public perception linking highway construction to population growth and air quality.***

FRESNO COUNTY ROAD SYSTEM

Recommendations

- ◆ **Continue to leverage available State and Federal dollars to maximize ability to improve system:**
 - *Highway Bridge Rehabilitation & Replacement (HBRR): 20% local match required, approximately 2 bridges per year*
 - *Regional Surface Transportation Program (RSTP): Competitive local process resulting in funding of approximately 1 mile of reconstruction per year.*
 - *Congestion Mitigation & Air Quality (CMAQ) for intersection improvements or other capital activities that benefit air quality as well as traffic flow.*
 - *Other sources of supplemental funds as available, such as PUC Grade Separation and railroad at grade crossing upgrade and signal maintenance projects*

- ◆ **Support efforts to insure transportation dollars are reliably available for transportation needs**
 - *Support state legislation to protect Proposition 42 funds from future diversion into State General Fund coffers.*
 - *Support elimination of the state's punitive "Use-it-or-Lose-it" legislation that unnecessarily places spending time limits that are out of sync with the State's own environmental review periods, and that are incompatible with the State's withholding of obligated funds due to its cash flow crisis.*

- ◆ **Support legislative or voter reduction of 2/3 approval requirement for locally-approved special purpose transportation sales tax measures**
 - *Take a proactive role with advocacy agencies and groups promoting legislation to reduce the voter approval requirement currently in place.*

- ◆ **Encourage legislative efforts to increase equitable and reliable local transportation infrastructure funding**
 - *Improve federal return of proportionate tax dollars to rural counties, either through increased minimum guarantee (unchanged since 1991) or through new programs focused on rural issues such as the House of Representative's proposed High Risk Rural Road Safety Program.*
 - *Protect local discretion through increased direct formula funding for broadly defined transportation purposes rather than new competitive or narrowly defined programs requiring increased federal or state oversight.*

- *Support creation of inflation-indexing mechanism so that value of excise tax revenues does not continue to decline against inflation-adjusted dollars.*
 - *Recognize existing infrastructure funding deficit will lead to major systemwide failures as facilities reach end of design life, and that stable discretionary revenue is critical for long-term system management.*
-
- ◆ ***Seek revision to regulations and legislation that inappropriately penalize counties and cities in non-attainment air pollution areas.***

 - ◆ ***Consider County-wide or sub-regional traffic impact fees at a universal (building permit) level to supplement State, federal, and local dollars for necessary transportation improvements.***

 - ◆ ***Support efforts to permanently extend HR 2389, to continue payments to counties for schools and roads based on historic federal forest timber receipt funding levels, to offset effects of reduced timber harvest on local communities formerly reliant on forest products for their economic livelihood.***

ROAD USE AND TRAVEL CHARACTERISTICS

Fresno County, like the rest of the State and nation, relies primarily on the highway system (defined as including streets, roads, and state highways) for both personal travel and commerce. Personal vehicle travel is the predominant mode of transportation for local personal trips (87% in Fresno County, 89% State-wide). State-wide, the highway system accommodates over 99% of inter-regional travel.

The majority of economic transportation also takes place on the highway system. The State Department of Transportation, in its 2000 San Joaquin Valley Goods Movement Study, estimated that 89% of the freight exported from the Valley, and over 80% of the freight imported into the Valley, is shipped by truck. These shipments often begin or end on the local road system. Critical freight, agricultural, and resource product movement take place not only on State Highways, but on County roads, especially in the rural areas.

Current use of the highway system in Fresno County is estimated to exceed 8 billion vehicle-miles traveled annually, or approximately 22.5 million vehicle-miles traveled every day. This surface transportation system is expected to continue to be the primary transportation mode for all use sectors in the future, providing a shared-use system for economic and freight mobility, public transit, and personal travel. Highway system use in Fresno County can be broken down as follows:

2004 VEHICLE-MILES TRAVELED (VMT) IN FRESNO COUNTY

<u>Jurisdiction</u>	<u>Annual</u>	<u>Daily</u>	<u>%</u>
State Highways	3,208,895,000	8,791,000	39%
Fresno-Clovis	3,042,082,000	8,334,000	37%
13 small Cities	328,207,000	899,000	4%
Fresno County Roads	1,619,281,000	4,436,000	20%
<u>Other State & fed. lands</u>	<u>13,978,000</u>	<u>36,000</u>	<u><1%</u>
2004 Total*	8,211,752,000	22,498,000	100%

*CA DOT Assembly of Statistical Reports 2002 data extrapolated using CA DOT 2002 Motor Vehicle Stock, Travel & Fuel Forecast

About ¾, or 75%, of travel on Fresno County's maintained road system takes place on the rural road system, primarily on two-lane undivided roads. Traffic on Fresno County

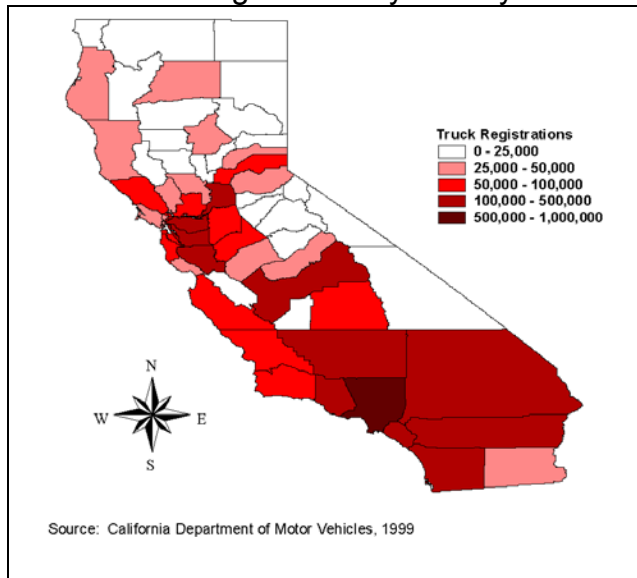
rural roads is substantially different from that of city street traffic. County roads are used to connect rural cities with each other, with the Fresno-Clovis area, and to State highways for inter-regional connections. County roads also serve as primary conduits for the agricultural economy, as produce is often field-packed for direct transport to out-of-area markets.

FREIGHT AND COMMERCIAL TRAVEL

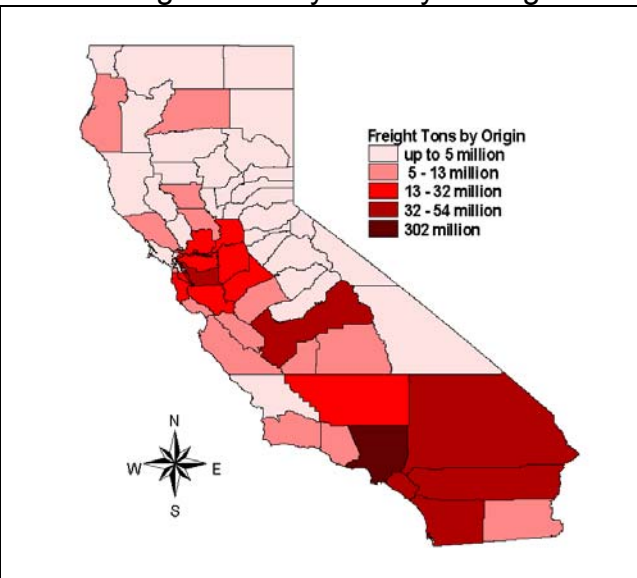
The majority of freight is transported by truck, both in Fresno County and Statewide. The California Department of Transportation calculates that over 17% of all travel on the State highway system in Fresno County is truck traffic, about twice the state average. Vehicle composition on most rural Fresno County routes, which also carry a heavy percentage of truck traffic, is comparable to the rural state highway system. Truck percentages on classified Fresno County rural roads range from 10-15% on many roads, to over 30% on some west-side corridors.

The following charts illustrate the prevalence of truck travel in Fresno County. The first shows truck registration in the State, by county. The second shows freight export volume, also by county. Fresno County is the fifth highest county in the State (tied with Riverside Co.) in freight export tonnage, much of it agricultural produce that originates on county local roads.

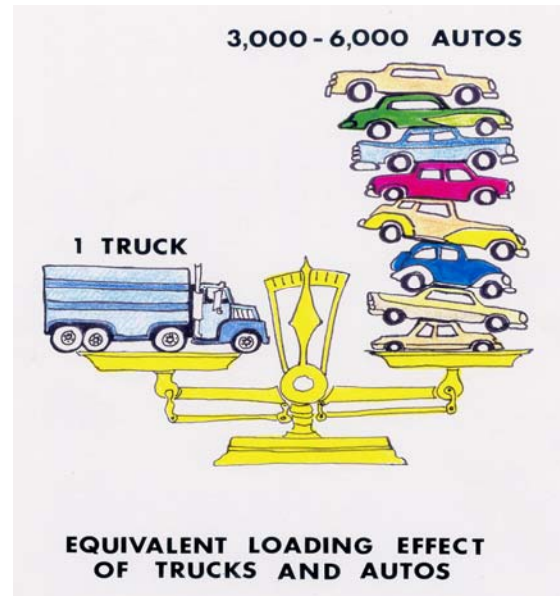
1. Truck Registration by County



2. Freight-Tons by County of Origin



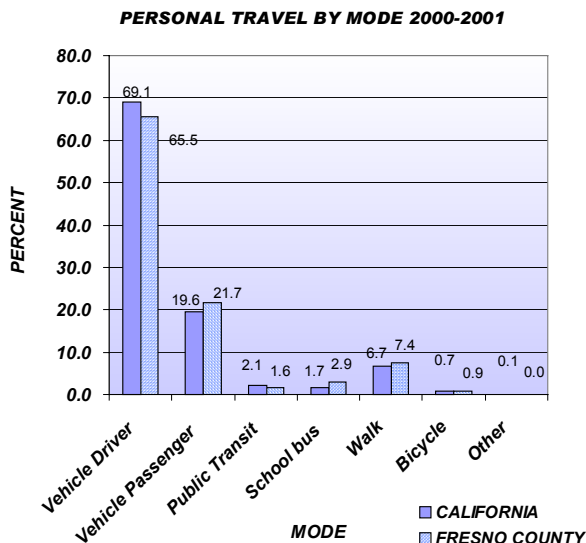
Truck traffic is far more destructive to roads than automobile traffic. A typical 18-wheel semi-trailer truck has the equivalent loading effect of between 3,000 and 6,000 passenger vehicles. Dispersed agricultural activities result in truck use of even the most minor roads. This results in a greater maintenance burden over the entire road system, not just on major routes on which the majority of maintenance dollars are spent.



Statewide, truck travel is expected to increase at a greater pace than passenger vehicle travel. This trend is expected to occur on Fresno County roads as well, as increased use will follow expanding economies of cities and communities, and more intensive agricultural production, such as multiple cropping of seasonal crops, and increased value-added agricultural activities.

PERSONAL TRAVEL

Although there is no single study that quantifies the amount of personal travel compared to commercial travel, various indicators suggest that a majority of *trips* (staff estimates between 65% and 85%) are for personal travel, with higher rates of personal travel in urbanized areas. The Caltrans 2002 Statewide Personal Travel Survey data for Fresno County shows that personal travel trips are divided among the modes as shown on the graph below.



Approximately 1/3 of personal travel is Home to Work, or commute travel. The remainder, the majority of personal travel, comprises a variety of other home or work-based personal trips.

For comparison of scale only, Amtrak passenger rail service recorded approximately 130,000 passenger boarding and departures from the Fresno station in 2002/03, or approximately 480,000 annual passenger-miles within the County. Fresno County's combined public transit systems, which rely on the highway system, serve approximately 13 million passengers per year, or roughly

40 million passenger/miles per year. Fresno-Yosemite International Airport logged approximately 1,034,000 passenger boardings and departures in 2003. Combined, these alternative means of personal travel constitute less than 1% of all such travel within the county.

FUTURE TRENDS

State Department of Finance projections indicate that Fresno County will double its 2000 population by 2040, with commensurate increases in vehicle-miles traveled. State Department of Transportation projections indicate that vehicle-miles traveled County-wide will increase by over 60% by 2025, with increases in truck traffic outpacing other travel. This projection is consistent with historical traffic growth rates on Fresno County roads, which over time reflect an approximate 1 ½ to 2% annualized growth rate.

The majority of freight is expected to continue to be shipped by truck in future years, and truck use on the highway and local road systems is expected to continue to grow. Although freight shipments on rail are increasing at a greater rate currently than truck traffic, rail capacity constraints in the Valley and elsewhere, transfer issues, and the just-in-time flexibility of truck delivery, mean that truck traffic will continue to dominate freight movement in future years.

ROAD SYSTEM DESCRIPTION & CONDITION

Fresno County's road system consists of 3,600 miles of maintained roads and 547 bridges, and is the largest County system in the State. This system, and the larger surface transportation system of which it is a part, provides the infrastructure necessary to facilitate societal and economic mobility, and is one of the largest investments made by the public. Statewide, this public infrastructure is valued at over \$2 trillion. Fresno County's road system is valued at approximately \$1.5 billion.

Ninety percent (90%) of Fresno County's road miles are in rural areas of the County, and consist primarily of two-lane undivided roads. Many have never been constructed to engineered standards of safety and operation, and may have deficiencies of width, drainage and shoulders, roadside obstacles and clear recovery area, sight distance, and alignment. In addition, many roads lack an adequate structural base that would allow them to support substantial traffic without frequent maintenance fixes.

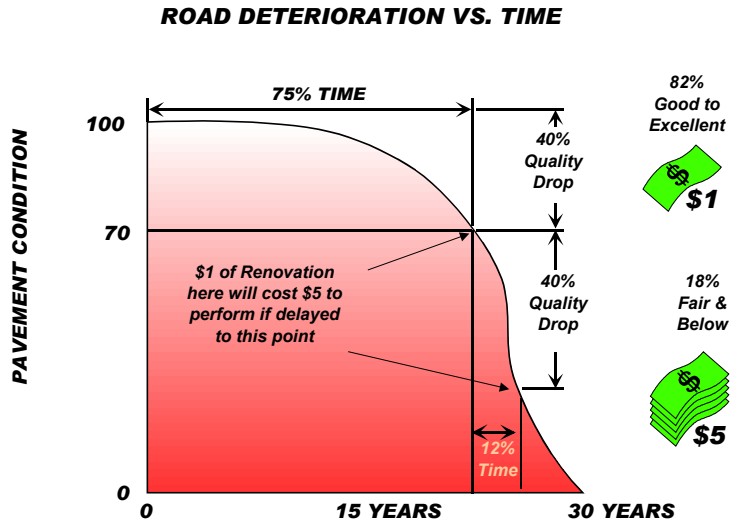
Approximately 40% of Fresno County roads, about 1,550 miles, make up the major, federally-classified road system. This hierarchical system balances mobility and access to insure that the higher-level roads provide a high degree of safety and convenience for the traveling public, while the lower level roads provide connection to the major system, while providing direct access to property and agricultural and commercial operations. The major road system, which includes Fresno County's expressways, arterials, and collectors, carries the majority of traffic and is the focus of most improvement efforts.

System-wide, the average daily traffic (ADT) on a road within the federal classified system is approximately 1,850 vehicles per day. Despite carrying approximately 80% of traffic on County roads, 70% of the classified system has less than 32' of pavement width, the County's and American Association of State Highway and Transportation Officials (AASHTO) paved width standard for improved two-lane classified rural roads.

About 1,170 miles of County roads are less than 20' wide, too narrow to place a centerline stripe to separate the two directions of traffic. These are primarily local roads with lower traffic volumes. However, these roads also serve truck traffic throughout the County, although generally at a lower intensity than major roads. Many of these roads are little more than "road mix" placed over native soil, and will not withstand heavy use.

Any road system requires a regular maintenance effort to keep roads in a condition capable of supporting expected traffic loads. Wear and pavement damage caused by traffic loading occurs on all roads, and is amplified by heavy truck use. The costs to construct and maintain roads to carry heavy truck loads are greater than those costs to build and maintain roads traveled primarily by passenger vehicles. Timely maintenance can extend the serviceable life of a road, and lack of maintenance can accelerate deterioration of a roadway to where costly reconstruction is required.

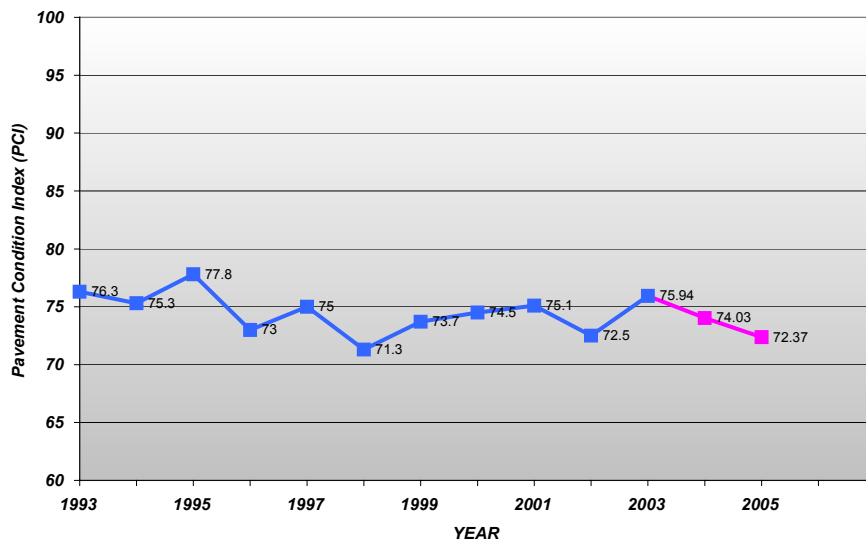
The chart to the left illustrates the benefits of timely maintenance, and the risk of long-term deferred maintenance. Put another way, if we do not have the resources to apply \$1.00 in preventive maintenance, it will quickly escalate to a cost of \$5.00 to restore the road by required reconstruction.



A technical evaluation and monitoring system is necessary to manage a road system of the size of Fresno

County's. Fresno County uses a Pavement Management System (PMS), coupled with a program that monitors traffic volumes, to develop annual maintenance priorities to keep ahead of system deterioration. A Pavement Condition Index (PCI), which is a component of the PMS, is a standardized means of evaluating pavement condition, allowing comparison between various systems both within California and state to state. The system-wide average PCI of Fresno County roads is currently 75.45, or "fair". This rating is slightly improved over the prior 10-year average, due to the one-time influx in 2001 and 2002 of over \$7 million for road maintenance following passage of AB 2928.

**Pavement Condition Index (PCI)
Average for Road System**



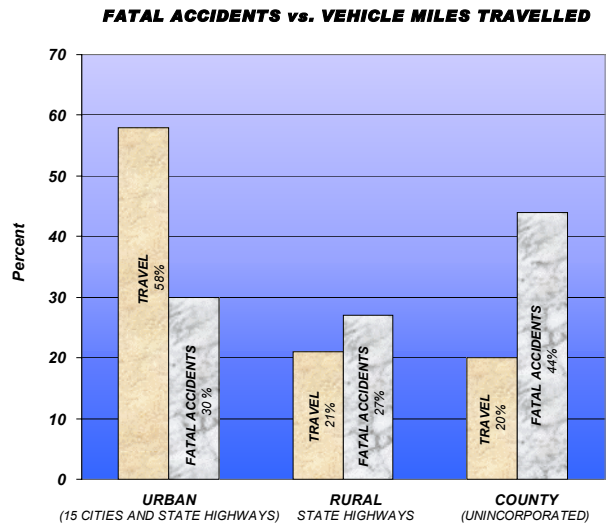
ROAD SAFETY

National studies have long documented significant safety discrepancies between rural and urban roads, and between classifications of roads. Generally, rural roads have much higher accident rates than comparable urban roads, across all classifications, and lower classification roads have higher accident rates than higher classification roads (which tend to be wider, divided, or otherwise improved). Freeways, as the highest functional classification, have the best safety records. Rural two-lane undivided roads, especially those not built to current standards, have the worst safety record. Rural major and minor collectors, like many of Fresno County rural routes, have fatal accident rates 3 times higher than urban collectors and arterials.

The Federal Highway Administration and National Highway Traffic Safety Administration estimate that 15% of fatal accidents on rural roads are directly attributable to poor roadway conditions, such as narrow pavements, inadequate shoulders, presence of roadside obstacles, poor alignment, and other non-standard features. These features are common on the majority of unimproved Fresno County rural roads.

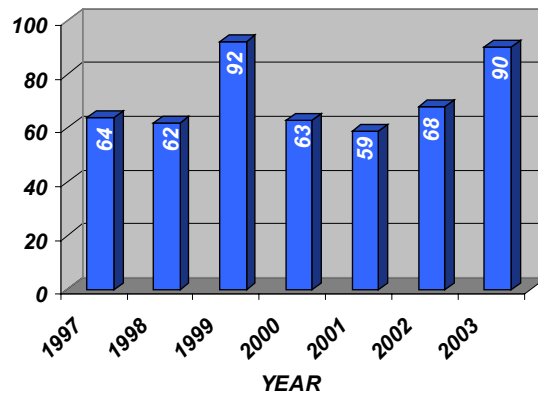
Poor roadway conditions were estimated to be a contributing factor to another 30% of fatal accidents.

Fresno County reflects national statistics in this regard with higher accident rates due to characteristically narrow unimproved yet high-speed rural roadways. The above chart, which shows that 44% of the fatal accidents within Fresno County occur on County roads, illustrates the increased risk of rural road travel.

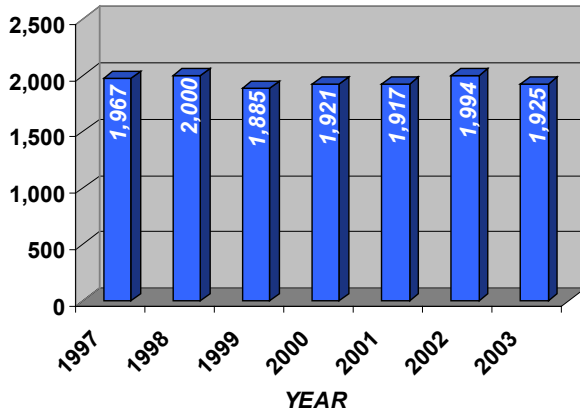


A total of 2,604 reported accidents occurred on Fresno County roads in 2003 (the 4-year average is approximately 2,540 accidents per year). The following charts show the total number of fatalities and injuries on Fresno County roads since 1997.

**TOTAL FATALITIES on FRESNO COUNTY ROADS
1997 - 2003**



**TOTAL INJURIES on FRESNO COUNTY ROADS
1997 - 2003**



Accidents have calculable public costs in addition to the personal devastation that often accompanies fatal and injury collisions. Information for accidents was applied using the California Highway Patrol's State-Wide Integrated Traffic Records System¹² digital data. The rates for accidents associated with deficiencies in roads were applied from the U.S. Department of Transportation nationally averaged statistics¹.

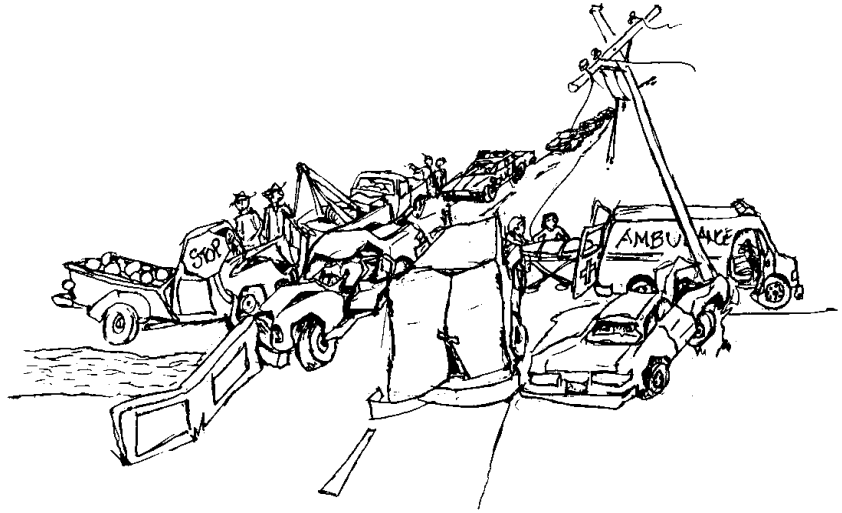
It is worthy to note that the national statistic is significantly less than local observation, as noted in recent news coverage. California's 2002 Mileage Death Rate (MDR, fatalities per 100 million miles of travel) is 1.27, while the national MDR is 1.51. Fresno County's fatality rate for 2002 was 4.5 and 6.0 in 2003, much higher than the national and State average, due primarily to a significantly higher fatal accident rate on rural roads. If Fresno County's fatality rate was the same as the national average, 22 people would not have lost their lives in 2002, 68 in 2003.

The economic loss to society from motor vehicle accidents includes losses from medical costs, funeral costs, property damage, lost productivity, insurance administration expense, legal and court costs, emergency services, coroner/medical examiner costs, accident investigation costs, and the administrative cost of public assistance programs. Expenditures and revenue losses connected with motor vehicle accidents affect federal, state and local governments, including potential tax losses.

Using "The Economic Impact of Motor Vehicle Crashes, 2000" as a guide for year 2000 costs, the average per person accident costs are approximately \$977,000 for a fatality and approximately \$118,000 for an injury. The average property damage only accident cost is approximately \$2,500.⁷ These unit costs applied to Fresno County's 2003 accidents (County roads, unincorporated areas only) result in an economic loss of \$326 million annually. These estimates are based not only on direct costs to the injured from medical costs, vehicle and property damages, and lost wages, but on indirect costs as well.

EFFECT OF UNPAVED SHOULDERS

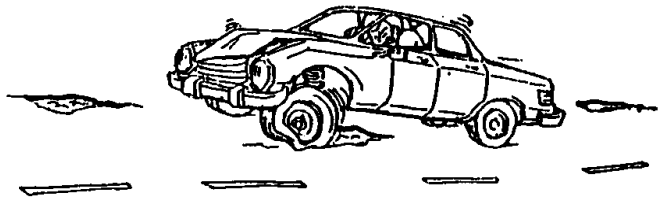
A study of rural Texas highways conducted by the Texas Transportation Institute concluded that two-lane highways without paved shoulders have the highest accident rates. Conversely two-lane highways with adequate paved shoulders have the lowest accident rates for traffic volumes investigated. The study also found that the roads without full-width paved shoulders had a greater number of run-off-road accidents, especially at low traffic volumes.



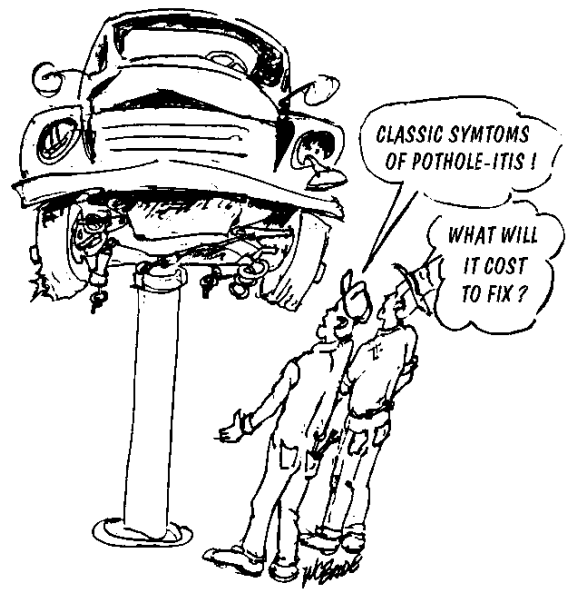
In Fresno County the vast majority of roads do not have adequate paved shoulders. Per our Pavement Management System, 3000 miles of our 3,600 mile system have less than adequate pavement widths.

EFFECTS OF ROAD ROUGHNESS

Road roughness adversely affects safe vehicle handling. The roughness of a pavement influences the steering and braking operation of a vehicle by producing variations in the normal forces between the tires and the pavement that in turn affect the ability to control the vehicle. Many of our rural Fresno County roads are considered very rough, and when this is coupled with road narrowness and sight distance impediments, the result is a significant lessening of safety.



Widespread recognition of the greater risk of serious accidents on rural highways, coupled with historic federal funding formulas that focus on urban areas has led the U.S. House of Representatives to include a proposal for a new Rural Highway Safety program in their 2004 TEA-21 Transportation Reauthorization proposal (TEA-LU). This program would provide funds primarily to local agencies to address widespread rural road safety issues.



ECONOMIC BENEFITS OF HIGHWAY INVESTMENTS

The streets and highways system has long been understood as a primary facilitating agent of economic growth. There are numerous ways that highway investments support local and regional economies.

TRANSPORT OF GOODS AND SERVICES

The economic competitiveness of Fresno County relies on a functional road and highway system for efficient access to markets. The Transportation Research Board's 2002 *Freight Capacity for the 21st Century* report found that a region's ability to provide roadways that minimized congestion and facilitated freight movement had a significant impact on whether jobs were generated locally or shifted elsewhere. Adequacy of transportation infrastructure is a necessary component of any economic development strategy.

Nationwide, industry has restructured to be more flexible and responsive without maintaining high product inventories. This requires reliable transportation access and strong distribution links to meet just-in-time production demands. Economic Development organizations working to encourage creation of new jobs in California consistently report that transportation facilities are one of the top concerns of business when considering expanding or relocating a business.

Agriculture in particular relies on a strong local as well as regional road system. Maintaining a viable agricultural industry in a world economy means keeping production and transportation costs competitive. Despite higher overall production costs, the United State continues a positive trade balance in the agricultural sector, exporting over \$200 billion worth of products per year. The ability of agriculture to remain competitive is due in part to an efficient and reliable transportation system seamlessly connecting fields to international ports.

Increased investment in infrastructure will be necessary for Fresno County and the San Joaquin Valley to sustain and improve its economic competitiveness. Investment in infrastructure means Valley and Statewide businesses can be economically competitive, transporting their goods and services on roadways with a good level of service and providing jobs and stability to the local economy.

JOB CREATION

Transportation construction is more job-intensive than many other areas funded by the public. A June 17th, 2004 California Infrastructure Coalition report, commissioned by the California Business Roundtable, states that each \$1 billion in public investment in transportation infrastructure creates 18,000 direct jobs. This benefit is amplified in the

community as wages support broader economic activity. The Federal Highway Administration, in a 1998 study entitled Highway Infrastructure Investment and Job Generation, estimated the broader indirect effect of the same \$1 billion in public transportation investment was a total of 42,000 full time jobs. Wages in the transportation and construction fields also tend to be higher than in many other publicly supported job sectors.

USER BENEFITS

An important category of public benefits are those received directly by highway users who benefit from improved safety, reduced wear and tear on vehicles, and fuel and time savings, by improved road conditions and reduced congestion. Rough pavement conditions affect fuel consumption and vehicle wear. In 2001, the Road Information Program, using data from the California Department of Transportation and Federal Highway Administration, calculated that drivers in California pay \$558 per year in additional costs due to poor roads. In other words, the road users pay for good roads, whether the money goes to the roads or for repair of their automobiles.

PROTECTION OF PUBLIC INVESTMENT

Timely preventative maintenance can provide substantial financial benefits to the public. Like the rest of the nation, many of Fresno County's road facilities are well past their design life (typically, 50 years for a bridge, and 20 years for an engineered road). A good monitoring and maintenance program can add years to the useful life of roads. Deferred maintenance on an aging road system, especially with ever-increasing traffic loads, will accelerate deterioration and ultimately result in an overwhelming public cost for full reconstruction. As shown on the chart on page 20, preventive maintenance expenditures can avoid costly reconstruction at 4 to 5 times the cost to the public. This cost is considered conservative, as new studies by the Federal Highway Administration indicate that replacement costs can be 4 to 10 times costlier than a program of preventive maintenance.

ROAD FUNDING CHALLENGES

Lack of adequate funding to protect the investment of millions of dollars of improvements completed on the County road system over the past forty years is one of the greatest challenges that the Department faces in coming years. Preventive maintenance expenditures are essential for the efficient use of the available funds in order to avoid more costly repairs or reconstruction if pavement is allowed to deteriorate beyond a maintainable level.

Adequate funding to maintain and improve the nation's infrastructure at all levels has been a growing concern nationwide, and has been an increasingly high profile issue in California in recent years as transportation investment has remained far below levels to adequately maintain existing facilities. According to the 2002 Federal Highway Administration Report to Congress on Conditions and Performance of the Nation's Surface Transportation System, California ranked 48th out of 50 states in highway investment.

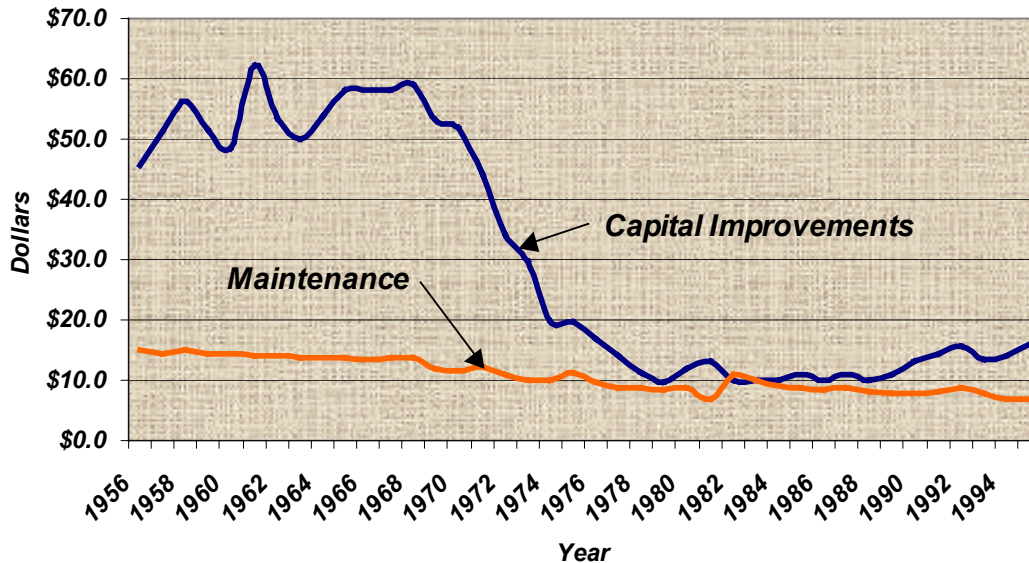
EXCISE TAXES NOT KEEPING PACE WITH NEEDS

The main source of transportation funding is fuel excise taxes, collected in California at a rate of 36.4 cents per gallon of gasoline (18.4 cents per gallon federal tax and 18 cents per gallon State tax). Diesel fuel excise tax totals 42.4 cents per gallon, with 24.4 cents federal tax and 18 cents State tax. While more stable than sales tax based on fuel costs, the growth rate of the fuel excise taxes have failed to keep up with inflation and with the large increases in highway travel. Ethanol, which in recent years has become a primary component of fuel in California, is exempt from fuel excise taxes. In addition, farming, state government, non-profit educational organizations, school buses, and intracity buses are exempt from the diesel federal excise tax.

Counties' share of the 18.0 cent State fuel tax is 3.6 cents. Rural counties have seen an even greater loss of value, as their proportionate share, based primarily on unincorporated population, is reduced as more urbanized counties increase their populations, and share of Statewide gas tax. Counties also do not receive any of the weight fees paid by trucks. These funds go exclusively to the State Highway Account for use primarily on State highways.

The following Exhibit illustrates the decline in purchasing power of California's fuel excise tax, the single largest source of local transportation funding, over the past few decades. This same trend applies to all fuel excise tax revenue sources, and is one of the factors leading to increased reliance on sales taxes, including local sales tax measures, to address transportation needs.

**Highway Expenditures per 1,000 Vehicle Miles
Travelled (VMT) in California, 1956 - 1995**



TRANSPORTATION NEEDS IN CALIFORNIA

Transportation investment in California was clearly not keeping up with growing demand, and by the late 1990s there was growing recognition and increased public pressure to address both congestion and the accelerating deterioration of both local and State transportation systems. In 1999 the California Transportation Commission produced a report, “Inventory of Ten-Year Funding Needs for California’s Transportation Systems”, pursuant to Senate Resolution 8. This report was in response to public outcry which ultimately led to the passage of AB 2928 and later Proposition 42, and provided direct funding to local agencies specifically for rehabilitation and maintenance needs: This document states in Chapter IV, under Local Streets and Roads.

“Counties and cities spend about \$1.0 billion per year for rehabilitation of pavement, plus another \$100 million on road maintenance and other roadway features such as traffic signals, signs and striping, bridges, and drainage facilities. After years of inadequate funding, public works departments do what they must to keep roads serviceable, and temporary “band-aid” pavement repair work somewhat distorts spending patterns between maintenance and rehabilitation. Regardless, the estimated need for pavement rehabilitation, including resurfacing but not pothole patching, totals as much as \$1.6 billion per year under today’s conditions, so at present spending levels the backlog of deferred maintenance grows by over \$400 million annually.”

The report goes on to say:

“Formulas that distribute funds for local road and street maintenance and rehabilitation based on population, registered vehicles, and road mileage do not match well against current and evolving need. **Funding formulas based mainly on population and vehicle registration compensate only marginally for substantial rural road use by urban recreational travelers and trucks hauling foodstuffs, timber, and mining resources to urban markets**”
 [emphasis added]

This report recognized that preventive maintenance expenditures are essential for the efficient management of road and highway systems in order to avoid more costly repairs or reconstruction if pavement is allowed to deteriorate beyond a maintainable level.

DECLINE IN DISCRETIONARY TRANSPORTATION FUNDING

In addition to low growth rates in primary excise tax funding sources, other funding streams have been eliminated (State-Local Partnership Program), become unstable due to the State budget crisis (AB 2928 and Prop. 42), or are expected to sunset within a few years unless extended by voter or legislative action.

Federal studies have consistently found that for any road system maintenance and pavement preservation strategy, optimal timing of maintenance treatments is key to extending pavement life and realizing long-term savings. Irregularity of funding streams, increasing fragmenting of funding to special-use programs, and use of competitive rather than programmatic funding, exacerbate the overall funding shortfall by reducing discretionary funding and making it difficult to sustain long-term maintenance strategies at consistent levels.

The following chart shows the expected expirations, and current suspensions, in three major Fresno County road funding sources. Combined, they constitute a significant portion of the overall roads budget, and demonstrate the challenge of long-term management of large road systems with uncertain revenues. The chart also shows the anticipated restoration of Proposition 42 to its full value in 2008/09, when the county’s formula share is expected to increase by near \$5 million annually.

TIMELINES FOR SUNSETTING REVENUE SOURCES

	2001/02	2003/04	2004/05	2005/06	2006/07	2008/09	2009/10	2010/12
Measure C			\$ 3.6 m	\$ 3.7 m	\$ 3.8 m	-\$3.9m	-\$4.0m	-\$4.0m
AB 2928 / Prop. 42			-\$2.8 m	-\$2.8m	\$ 2.9 m	-\$2.9m	\$ 8.0 m	
HR 2389 Forest Reserve			\$ 1.1m	\$ 1.1m	\$ 1.2m	\$ 1.2m	-\$1.2m	-\$1.2m

FUNDING EQUITY

Lack of funding equity is most clearly exemplified by the difference in direct return of gas taxes to Fresno County from state and federal fuel excise taxes. State and federal gasoline excise taxes are nearly the same (18 and 18.4 cents per gallon respectively), meaning the State and federal gas tax revenues collected within Fresno County are nearly equal. However, Fresno County's direct return from the state gas tax is over \$13 million annually, while the direct return from the federal gas tax is only about \$2.5 million. This return represents a reimbursement percentage of 88.12 % on specifically qualifying projects, with local funds required for the remaining 11.88%. The County typically uses these funds for one of the annual maintenance overlay paving contracts and for qualifying bridge and bridge rail replacement contracts. Because of increasingly rigorous environmental reviews and the very sensitive locations of these projects, bridge projects require lengthy timelines for completion, with some of our projects nearing the ten-year "use it or lose it" deadlines.

Several methods developed by Staff in the Department of Public Works and Planning have determined the percentages of return of the Federal gas tax allocation to Fresno County. The three methods are shown as Examples 1-3 in Appendix E of this Report.

FRESNO COUNTY ROAD SYSTEM NEEDS

The current shortfall for County-maintained roads to provide an appropriate level of preventive maintenance service is roughly \$10 million annually. In the current year the road maintenance program provides for 50 miles of pavement seals or maintenance asphalt overlays. Additionally, the program included 44 miles of contract overlays and 90 miles of contract chip seals. Given the 3,600 mile road system, a more appropriate preventative maintenance program would call for 450 miles of pavement seals or maintenance overlays, 130 miles of contract (greater than 1" thick) overlays, and 300 miles of chip seals. The difference between the aforementioned mileage of the current program versus an expanded program equates roughly to the \$10 million maintenance shortfall.

The ability to improve deficient roads for public safety and mobility is also severely limited. There is an estimated shortfall of at least \$15 million needed to upgrade roads to current safety and operational standards. This includes improving existing two-lane roads to minimum standards, and also widening some regional roads to four lanes.

As system demand continues to grow, the County's ability to maintain the existing road system will be further strained, and the ability to efficiently upgrade and improve facilities will fall further behind without major revisions in national and state infrastructure funding strategies. These strategies should provide direct formula allocations for the maximum local discretion, and have assurances that the funds will be reliable from year to year and not be subject to suspension or delay to meet other state or federal needs.

FUTURE OF ROAD FUNDING

There has historically been strong public support for improvements to the transportation system. The passage of Proposition 42 by nearly 80% in California was correlated to the public's frustration with congestion and poor transportation facilities. Increased funding for transportation, especially maintenance of existing facilities, routinely ranks as a high priority among Californians polled on local and regional issues.

Transportation infrastructure has been traditionally funded with fuel excise taxes. However, fuel excise taxes have failed to keep up with inflation, and will be even less responsive to increasing needs as new fuel technologies penetrate the market in the coming decades. Major changes in funding strategies will ultimately be necessary to maintain even the current level of support. The following is a summary of some key areas of transportation funding:

FUEL EXCISE TAXES

The fuel excise tax is a per-gallon charge for gasoline and diesel, and is the primary means of transportation funding. It has been declining in value relative to highway system use since the late 1960s. As both vehicle fuel efficiency and travel have increased, the very limited increases in per-gallon fuel taxes have failed to keep up with inflation, or to address how to encourage optimum use of the existing system.

The fuel excise tax links payment to vehicle characteristics (ie, petroleum-based fuel economy) rather than to use of infrastructure. Fuel excise tax as a primary means of funding transportation infrastructure will decline even further in coming years as substantial changes in vehicle fleets, fuels, and engine technologies take place. The increasing market acceptance of hybrid vehicles, and required improvements in fuel economy, as well as use of non-taxed alternative fuels, will accelerate the decline in value as more and more vehicles will be paying less per unit of travel to use the roads.

SALES TAX MEASURES

The inadequacy of the fuel excise taxes, and increasingly constrained state and federal funding programs, have caused local agencies in California to turn to local sales tax measures to fund transportation needs. Fresno County is one of 15 "self-help" regions of the state, which combined cover over 85% of California by population. The majority of measures were passed prior to legislative revisions that require a 2/3 supporting vote for passage of special purpose taxes. This Board, and other public agencies in self-help counties throughout the state, have supported legislation to reduce the voter approval threshold to 50% or 55%, but to date none of the efforts has succeeded.

Fresno County's sales tax measure, Measure C, expires in 2007. After a failed measure extension effort in 2002, community discussion has begun on the best approach to develop a successful measure in 2006.

Sales taxes on motor vehicle fuels are also the source of the most recent effort by the state to fund transportation infrastructure. AB 2928 and its successor, Proposition 42, are derived from the existing statewide gasoline and diesel sales tax revenues that previously went to the State's General Fund.

Sales tax revenues have an advantage of generally keeping up with inflation, as unit costs increase, and having a high degree of local flexibility. However, sales taxes are more sensitive to economic fluctuations than excise taxes, and can therefore fluctuate substantially from year to year. AB 2928 is currently suspended pending resolution of the state fiscal crisis. The dynamic State budget situation may result in an early repayment of a prior year's AB 2928 suspension, pending outcomes relating to Indian gaming on the November 2004 State ballot.

Use of general sales tax revenues for transportation can also de-link the payment from system use, removing at least in part any financial constraint on system overuse. Non-fuel sales taxes provide no incentive to reduce driving, or peak-hour use.

USER FEES

User fees linked to either demand for travel (congestion pricing) or extent of system use (use pricing) have been discussed, primarily at the academic level until recently, as a possible means to shift funding away from excise taxes in the future.

Congestion pricing works similar to a variable toll. Drivers pay a premium to travel a facility at peak periods when demand was the greatest, and would pay less (or nothing) to travel the same facility when demand was low. This approach would increase efficiency by encouraging more travel at off-peak periods, and discouraging peak period travel. Congestion pricing is being used to a limited extent on some toll facilities in California.

User pricing links a fee to a vehicle's use of the system by mileage, rather than fuel usage. Pricing would be calculated from odometer readings. The State's recently issued Performance Review Report recommends a shift to mileage-based user pricing.

The advantage of these strategies is that the user fees, for infrastructure maintenance and improvement, are more directly linked to the cost to provide the benefit.

The disadvantages are that both would likely require costly "intelligent transportation" features in individual vehicles and/or highways for monitoring and billing purposes, as well as additional government administration costs. These methods would also result in loss or reduction of the current subsidies enjoyed by drivers of fuel-efficient or alternatively fueled vehicles.

DEVELOPER FEES

New development in Fresno County has long been required to install transportation facility improvements adjacent to the new development. Since the 1980's, and modified substantially in the 1990s with the improvement of traffic modeling tools, new development has been required to identify and mitigate off-site traffic impacts, sometimes miles away, if the development is in an outlying area and generates traffic that will travel long distances to jobs or urban amenities. New roads, signals and intersection improvements, or a proportionate share of these improvements, are required or assessed. Throughout the last few decades, development fees have become increasingly common as public transportation funding has declined, and agencies have recognized the need to identify and mitigate the real impacts of development.

Fresno County's practices are undertaken as part of the analysis of new development under the California Environmental Quality Act (CEQA), and take into account project responsibility for the impacts (nexus) and proportionality. There is no standardized statewide requirement for impact fees, and fees vary widely between agencies, both by methods and extent of assessment. While Fresno County assesses new developments, small land divisions or pre-existing parcels are not assessed when approved or built upon. Fresno County has always assumed the cost to provide facilities for this small-scale future growth. However, cumulatively it can be substantial, and available state and federal revenues are no longer sufficient to insure that the County can provide roadway improvements when needed.

There are also differences within this region (as well as across the state) on how local agencies require development to mitigate traffic impacts on state highways or other agency's roads. For impacted State facilities, Fresno County applies the same criteria it uses for its own roads, and assesses development for their proportional cost for improved interchanges or intersections. Other agencies such as the City of Fresno do not yet assess development for impacts to state facilities. This can lead to discrepancies or inequities in development costs across jurisdictions. Fresno County is participating with the City of Fresno and Madera County and the State in a Freeway Interchange Deficiency Study, through the Council of Fresno County Governments. This study will identify the primary deficiencies on freeway interchanges in the urbanized areas of Fresno and Madera Counties, as well as use by expected traffic growth based on adopted general plans. While not itself a fee study, this information may be used by local agencies if there is a desire to develop a uniform impact fee that would equitably assess development for impacts to state facilities. Interchange improvements are funded primarily out of Fresno County's Regional State Transportation Improvement (STIP) Program funds. A lack of development contribution in some parts of Fresno County will result in the need to pay for costly interchange improvements out of the County's regional STIP dollars, reducing the amount of STIP funds available for other countywide needs.

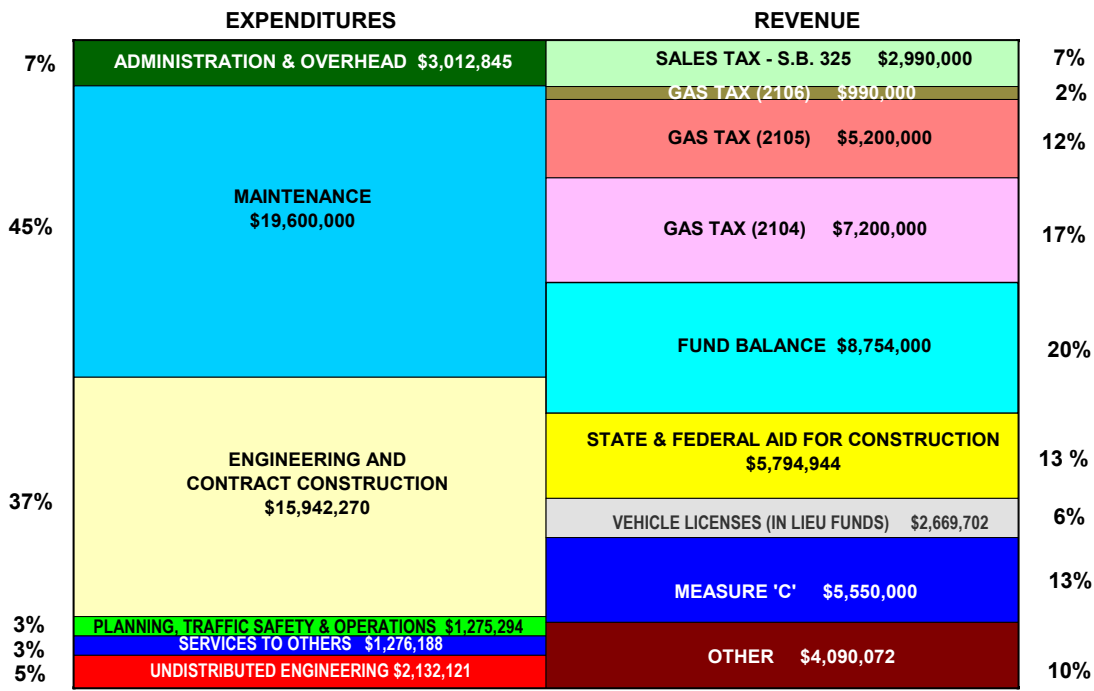
ROADS BUDGET

The Fresno County Road Program (Org. 4510) is financed almost exclusively with restricted funds; primarily fuel excise taxes but also Measure C, Federal Forest Reserve, SB 325 Transportation Development Act and AB 2928/Proposition 42 gas sales tax funds. Restricted funds are primarily those revenues generated by vehicular sources, which must be spent exclusively for road purposes as prescribed by state and federal statutes.

The unrestricted portion of the Road budget was originally a portion of Fresno County's traffic fines and forfeitures payment from the state and the State Motor Vehicle License Fees (in-lieu tax) payments from the state, which up to this year have been dedicated to road purposes. Since 2000, AB 2928 (and subsequently Proposition 42) requires the continuing obligation of those funds to road purposes to fulfill the statutory Maintenance of Effort requirement.

The following Exhibit displays the expenditures and revenues of the current Roads Budget. On the revenue side, restricted funds include Measure 'C', S.B. 325, 2104, 2105, and 2106 gas tax, and State and Federal Aid. Local unrestricted (discretionary) funds include general funds that backfill past fines and forfeitures, and license (in lieu) funds (an expanded discussion of road revenue sources is included in Appendix B).

ADOPTED ROAD BUDGET 2004-05 FISCAL YEAR



TOTAL EXPENDITURES \$43,238,718

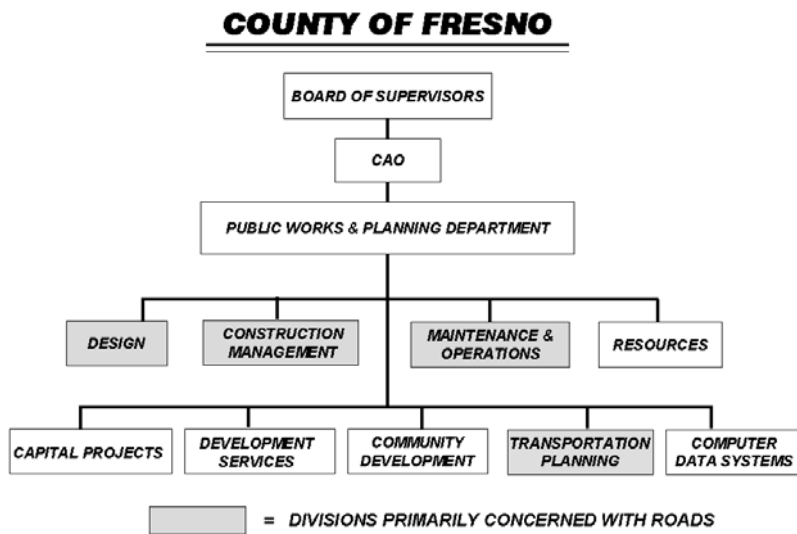
TOTAL REVENUES \$43,238,718
*REVENUES EXCLUDE \$1,306,182 BACKFILL

The 4510 Roads budget often includes a substantial fund balance due to the multi-year nature of many capital projects. The construction phase, which requires the bulk of funding, can follow years of preparatory work, and therefore, the expenditure budget can fluctuate dramatically to deliver infrequent large projects, even while the revenue stream may remain more constant. This is necessary for two reasons –

- Need to accumulate funds over years to pay for the capital costs or local match of large-scale projects, and
- Carryover if projects are delayed due to environmental or other reasons.

As an example, the current year's draft budget originally reserved the anticipated \$2.9 million cost of construction for the Fowler Avenue reconstruction project in 2005/06, several million dollars set aside in reserve for Friant Road which is delayed indefinitely due to the State funding crisis, and match funding for a number of bridge projects that would have been constructed in past years except for environmental delays. The Fowler reconstruction project was defunded to meet other County needs this budget year, however, the Friant and bridge reserves were maintained, and will be carried over until expended.

ORGANIZATION AND RESPONSIBILITY OF FRESNO COUNTY DEPARTMENT OF PUBLIC WORKS & PLANNING



ROAD WORK PROGRAMS AND ACTIVITIES

The Department of Public Works and Planning is responsible for the planning, design, construction, maintenance, and operation of all County road facilities, on the largest county road system in the State. The Department is committed to delivering transportation services to the public in a timely, equitable, accurate, and professional manner at all times.

ROAD MAINTENANCE AND OPERATIONS

Maintenance and Operations activities make up the majority of the Fresno County Roads programs and budget. The primary objective of this program is to preserve the County's investment in the road system by maintaining and operating the County's roads and bridges in a safe condition through the most efficient use of the public's resources.

Maintenance Operations include not only aspects of resurfacing and pavement repair, but all of the aspects required to keep a public facility open and safe for the traveling public while subject to damage from weather, flooding, and daily traffic loads.

'Road Maintenance' includes the following activities: pavement patching, crack sealing, performing various types of pavement overlays and pavement seals, restoring shoulders, replacing culvert pipes, making bridge repairs, and maintaining all traffic signs, markings and striping. Chip seals and pavement overlays with a thickness greater than one inch are performed under public works contract.

'Road Operations' include the management and operation of a large traffic system such as monitoring road and traffic conditions, monitoring existing signing and striping, performing traffic and engineering studies and safety investigations, and system monitoring activities such as the Pavement Management System. The Pavement Management System is an essential tool for developing and managing pavement maintenance strategies, and is discussed further on page 38.

ROAD RECONSTRUCTION

There are two types of reconstruction that are undertaken by Department. Both are important elements of a comprehensive approach to road system management:

Maintenance Day-Labor Reconstruction This program involves the rehabilitation of low traffic volume roads by County labor and equipment. Approximately four to six miles of road have typically been scheduled annually for rehabilitation, this year being low at one mile because of reduced funding. Roads that are located in areas of good soil condition and that do not require a thick structural section are selected for rehabilitation based on need. The process for rehabilitation involves: regrading the road to eliminate local drainage problems, recycling the existing surfacing as a

basement structural material, and adding nominal amounts of aggregate and/or asphalt surfacing material.

This program focuses on roadbed structural deficiencies and failures, and is fundamentally a high-level maintenance activity to rebuild a failing road in its original “footprint”. While a necessary part of a complete road management strategy to correct deficiencies that can no longer be managed through resurfacing or other maintenance activities, this generally is a less involved process than the rebuilding of major roads to current standards as takes place in public works contract reconstruction.

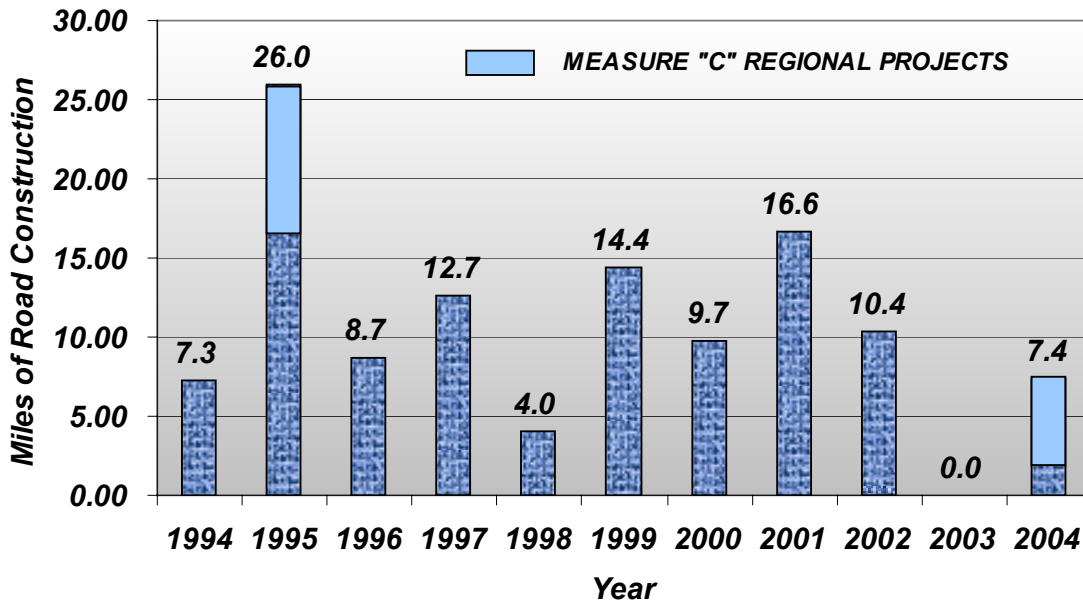
Contract Reconstruction Roads selected for contract construction, which brings all aspects of a road up to current safety and design standards, require complex engineering and generally consist of complete reconstruction, including rebuilding of the roadbed, pavement widening and realignment, construction of shoulders, intersection treatments, and right-of-way clearance to reduce the occurrence and severity of accidents. Roads are constructed to provide twenty years of pavement service life to match the type and volume of traffic expected. In most cases reconstruction provides a structural foundation under the pavement such that future maintenance can be minimized, and, with appropriate and timely maintenance, the useful life of the road extended beyond its design life.

Candidate road construction or reconstruction projects are identified using the Road and Traffic Evaluation (RATE), which evaluates not only physical features but safety, use, and community service attributes of roads Countywide. Projects are further evaluated, prioritized, and recommended for the Road Improvement Program, a multi-year reconstruction program consistent with anticipated construction revenues. Each year’s road construction activities, consistent with the Road Improvement Program, are submitted to the Board of Supervisors for adoption during the annual budget process. More information on the RATE is in Appendix A.

Generally, a road construction project requires three to four years of lead time prior to actual construction. When feasible or limited funds require, a project may be constructed in stages. Major projects, or any project which involves Federal funds, may require much longer. This time is needed for programming local, state, and federal match financing, processing environmental reports, preliminary engineering and right-of-way acquisition.

Even the best pavement management strategy will not eliminate the need for reconstruction, especially on systems such as Fresno County’s where the majority of roads have never been designed and built to standard. The following chart shows miles of roads reconstructed in Fresno County over the past decade.

FRESNO COUNTY ROAD RECONSTRUCTION



From approximately 15 to 20 miles per year reconstructed in the early 1990's, the Department has severely reduced reconstruction efforts. Full contract reconstruction is now being performed only to the extent that grant or other supplemental funds are available after primary maintenance and operations have been funded. The only current major road construction projects underway on Fresno County Roads is the Academy Avenue (Measure C) project. Staff expects that the current competitive process for RSTP funds now underway through the Council of Fresno County Governments will result in an additional 2 to 4 miles of County road projects projects being funded with 88.5% federal dollars over the next four years.

During the current period of reduced funding, locally-funded road reconstruction will continue to be minimized, pending at least return of full Proposition 42 funding in 2008/09.

BRIDGE PROGRAM

One area of construction that continues at near historic levels is the bridge reconstruction program, which is 80% funded with federal funds. There are currently 17 funded bridge projects for which the Department is in various stages of design and environmental review. This program area, which relies on federal Highway Bridge Replacement & Rehabilitation (HBRR) funds, has experienced dramatic and lengthy environmental delays, leading to the current backlog of bridge projects.

According to the 2003 federal HBRR Eligible Bridge List, 21 of the 547 County bridges are rated with deficiencies such that they are eligible for complete replacement. There

are 34 with such deficiencies meriting federal funding for major rehabilitation. Several of these are in the Road Improvement Program awaiting project delivery, however, most of the 55 requiring significant work remain on the waiting list for funding.

TRAFFIC ENGINEERING

A transportation system that carries over 4 million vehicle-miles every day, much of which has never been engineered and built to current design standards, must be monitored and managed to the extent possible to insure the safest service and reliability possible to those who depend on it every day. Traffic safety on Fresno County highways is monitored through maintenance of accident records, accident location “pin” maps, and surveillance of high accident rate locations. Review of traffic safety complaints or requests from the public, other agencies, or staff, also contribute to ongoing evaluation of traffic safety. In 2003, there were 158 traffic safety study requests initiated and 58 completed as a result of public and staff input. Overall, there remain 322 open and pending studies. Traffic safety improvements such as highway signs and delineation are made by the County as needed, without prior programming or priority waiting lists.

The traffic engineering function is performed by a section of the Maintenance & Operations Division of Department of Public Works and Planning. In addition to being responsible for the field operations of signing, striping, and marking county roads, the traffic engineering section also does the following:

1. Monitors and analyzes high accident locations.
2. Investigates, analyzes, and takes remedial action to correct current traffic problems.
3. Performs engineering studies to establish speed zones.
4. Investigates and prepares defense for litigation.
5. Prepares various traffic engineering reports.
6. Prepares grant applications for traffic safety improvements such as the Barstow Avenue Safe Routes to School project (\$65,100), a federally funded safety program, and State Office of Traffic Safety Collision Software grant (\$73,527) now pending.

Traffic and Design Engineering staff within the Department also develop and maintain ongoing priority programs for safety and operational improvements such as traffic signals, or other site-specific improvements that may require significant capital investment but are generally less costly than major road improvement projects.

SIGNAL AND SPOT IMPROVEMENT PROGRAMS

The Department also maintains a list of candidate projects for signals and other minor capital improvements to be able to quickly prioritize or make application under various minor grant programs as available. This includes not only traffic signals, which are often locally funded, but Hazard Elimination Safety (HES) projects, which may include relocating headwalls or other obstacles away from roadways, left turn or other intersection channelization projects, or any minor capital project that improves safety. The Safe Routes to School Program is another program for which the Department maintains eligible locations for submittal as available. Fresno County budgets for several traffic signal projects each year, and also to provide matching funds for other grant opportunities that may arise.

CONSTRUCTION MANAGEMENT ACTIVITIES

The Construction Management Division provides contract administration, labor compliance, inspection services, and soil and materials sampling and testing, for all County-administered contract road construction activities. The Division also manages the traffic census and materials laboratory that provides data for pavement design for maintenance, rehabilitation, and construction projects.

PAVEMENT MANAGEMENT SYSTEM

The purpose of the pavement management system (PMS) is to provide a formal, systematic approach to managing the county's road maintenance activities in the most cost-effective manner, providing maximum benefit to the traveling public. The PMS is used to monitor and select appropriate maintenance and rehabilitation strategies. The PMS only looks at the condition of the pavement; a second analysis, the Road and Traffic Evaluation (RATE) considers other factors in addition to pavement condition for reconstruction projects, as discussed later in this report.

The PMS system consists of seven major elements:

1. Inventory of maintained road system.
2. Pavement condition evaluation.
3. Monitoring of pavement performance.
4. Preparation of current and future budget needs.
5. Analysis of impact of budget decisions on future pavement condition.
6. Project prioritization when needs exceed funds.
7. Maintenance and improvement of PMS.

An inventory database of all road segments in the 3,600 mile maintained road system has been completed. The inventory includes the number of lanes, segment length, width, surface type, functional classification and current traffic volume. The structural section and maintenance history is also contained in the database. The Department is currently in its thirteenth year of regularly assessing the pavement condition. Each road

segment is evaluated on a regular schedule dependent upon the traffic volume of the road.

Roads with higher traffic volumes will show the effects of the traffic carried at a faster rate than low volume roads; hence the greater frequency of assessment. The pavement assessment measures the quantity and magnitude of distresses present in the pavement at random locations. The distresses evaluated include alligator cracking, block cracking, distortions, depressions, patching, potholes, rutting and weathering. The computer is used to analyze the distress data and to calculate a Pavement Condition Index (PCI) value for each road segment. A road segment's PCI may range from 100 down to 0, with 100 indicating a pavement with no distresses, such as a new pavement. Reassessment of a road segment is performed at the same locations as the previous assessment in order to monitor the deterioration of the pavement with consistency. The pavement condition index has been used as a preliminary basis for this year's chip seal and asphalt concrete overlay maintenance projects.

<i>ADT</i>	<i>ASSESSMENT FREQUENCY</i>
<i>2000 & above</i>	<i>every 2 years</i>
<i>1000 - 1999</i>	<i>every 3 years</i>
<i>400 - 999</i>	<i>every 3 years</i>
<i>100 - 399</i>	<i>every 4 years</i>
<i>0-99</i>	<i>every 5 years</i>

The Pavement Management System has been developed to predict the performance of existing pavements as well as the effect of different maintenance strategies, and compare pavement needs with alternative funding proposals to provide short- and long-term impacts of various revenue and budget proposals. With this information, the most cost-effective maintenance strategy for each road segment can be determined.

ROAD EVALUATION AND ROAD IMPROVEMENT PROJECT SELECTION

One of the primary tools available for ensuring that limited highway funds are expended on reconstructing those roads that provide maximum service to the general motoring public is the "Road and Traffic Evaluation Study" referred to as "RATE". RATE provides a comparative evaluation of a "rated" road segment against each of the other "rated" road segments. Minor roads are not included in this study.

Under this program, the majority of county roads in the maintained system are reviewed in the field by a rating team that measures and evaluates the physical condition and adequacy of each road segment. The RATE is updated every five to seven years by the Department of Public Works and Planning.

There are four main categories which influence the priority rating of a road: driver safety, geometric adequacy, structural adequacy and community service. These four main categories consist of field data as well as data compiled from office records such

as number of accidents, traffic volume, right-of-way width, structural section and soil adequacy.

The data collected in each of the main categories is assigned weighted point ratings. The combined point ratings are totaled and compiled into a rating list. RATE provides the technical basis for establishing the Road Improvement Program (RIP), which is adopted by the Board of Supervisors. Further explanation of the factors which are used in RATE may be found in Appendix A.

COUNTY SERVICE AREAS (CSA's)

County service areas are formed for the purpose of providing maintenance on private roads with public use, with payment for upkeep of the roads paid for by the benefiting property owners. Since 1988, it has been the Board's policy to require that CSA zones of benefit be established for road upkeep and to meet emergency access requirements on new development roads within the County. The Department assists the property owners in the planning of road maintenance strategies and assists in the preparation of an annual budget. Revenues are derived from property owner assessments and the road maintenance work is performed as directed by the property owners. Routine maintenance such as surface patching and correction of minor drainage problems is generally most efficiently performed by County forces. Activities such as chip sealing, pavement overlays, and snow removal are performed by contracts administered by the Department.

APPENDIX

APPENDIX A

ROAD AND TRAFFIC EVALUATION (RATE) POINT SYSTEM

In order that all features of a highway might be reduced to a common denominator, the features are given numerical point ratings. Each of the constituent features are assigned a maximum point value depending upon the relative value of the role played by the feature in dispatching vehicular traffic on the highway.

In the process of assigning point values, the various features to be considered are grouped into three categories: Geometrical, Physical and Safety and Community Service, and rating points of 36, 39 and 25 points are assigned respectively. Service and traffic volume (Average Daily Traffic, or ADT) are used to adjust the point ratings and are discussed later in the text. Within the main categories, the constituent features were assigned points described below:

Geometrical Adequacy - 36 possible points

1. Pavement width - 12 points
2. Shoulder width - 5 points
3. Right-of-Way - 2 points
4. Gradient - 4 points
5. Alignment - 8 points
6. Impediments - 5 points

Physical Adequacy - 39 possible points

1. Surface and foundation condition - 6 points
2. Surface and foundation adequacy - 20 points
3. Shoulder adequacy - 5 points
4. Drainage - 8 points

Safety and Community Service - 25 possible points

1. Accident rate - 10 points

2. Connects two major roads - 1 point
3. Main link - Population center - 3 points
4. Only link - Population center - 4 points
5. Recreational route - 2 points
6. Agricultural route - 2 points
7. Serves school - 1 point
8. School bus route – 1 point
9. Serves industry to cultural center – 1 point

The most influential factor in the rating of the road features is the traffic volume. This was categorized into seven groups as follows:

COMPARATIVE STANDARDS

Traffic volume, represented as Average Daily Traffic (ADT), is the most important single factor influencing the design of a highway. ADT is categorized into seven groups as follows:

<i>ADT Group</i>	<i>ADT</i>
<i>1</i>	<i>0-99</i>
<i>2</i>	<i>100 - 399</i>
<i>3</i>	<i>400 - 999</i>
<i>4</i>	<i>1000 - 1999</i>
<i>5</i>	<i>2000 - 3999</i>
<i>6</i>	<i>4000 - 5999</i>
<i>7</i>	<i>6000 & over</i>

To develop a rating point system, it was first necessary to establish minimum comparative standards for road segments in each ADT group. The minimum comparative standards are shown in Table 1 on page 57.

The standards are also modified for terrain features; allowable standards are less for mountainous (M) areas than for flat (F) or rolling (R) terrain.

These standards were selected primarily to serve as a base with which the various rating data could be compared. Every effort is made to conform to these standards for the design of public roads.

Mathematical curves, representing each ADT group, were developed to determine the appropriate rating points for each of the features. These mathematical curves allow for computer processing of the data.

A detailed description of the various features rated follows:

Pavement Width - 12 points maximum

The pavement width includes both the traveled way width and any portion of the shoulders that is paved. The traveled way is defined as that portion of the roadway specifically designed for, or which normally carries, vehicular traffic. The field crew measures the entire width of the paving in lieu of trying to differentiate the traveled way from the paved shoulders. Points are deducted if the paved width is less than the minimum design standard width.

Shoulder Width - 5 points maximum

The shoulder width is that portion of the roadway which is used for the emergency stopping of vehicles and the structural protection of the traveled way. It can be either paved or unpaved. The unpaved shoulder was measured in the field. The computer determines the paved shoulder from the pavement width measured and combines it with the unpaved shoulder.

Right-of-Way - 2 points maximum

The existing right-of-way width was determined from office records and entered into the computer for analysis.

Gradient - 4 points maximum

The maximum percent of grade was measured in the field and entered in the computer. Short lengths of steep grades sometimes found at bridges or railroad crossings were considered as possible impediments and were treated accordingly.

Alignment - 8 points maximum

The number of angle points and curves which fall short of the average curve in the road segment were recorded and the computer converted this entry to the obstructions per mile. Curves which deviate from the norm were determined mainly on their "rideability." In other words, curves whose comfortable driving speeds were inconsistent with the rest of the road segment were classified as obstructions to the flow of traffic and safety concerns. The minimum comparative standard was used as a final guide.

Impediments - 5 points maximum

An impediment is considered to be any feature which restricts the normal flow of traffic. These can include but are not limited to: blind, uncontrolled intersections, railroad crossings, inconsistencies, changes in grade and other surprise elements. The number of impediments was recorded in the field and the computer converted this into impediments per mile.

Surface and Foundation Condition - 6 points maximum

The physical condition of the pavement and the foundation was assigned rating points based on observations in the field. Deficiencies in the pavement and foundation such as surface and foundation failures, surface deterioration, uneven surface texture, dips and ragged pavement edge were noted and points deducted in proportion to the degree of the deficiencies present.

Surface and Foundation Adequacy - 20 points maximum

Surface and foundation adequacy rates the ability of the road to withstand the type of traffic expected on the facility. This is one of the most influential features of the RATE rating point system. The computer uses data for the existing roadway structural section, R-value of the underlying native soil and traffic volumes to calculate the difference between the required structural section and the existing structural section. Rating points are deducted in proportion to this calculated difference between structural sections.

The difference between the adequacy of the surface and foundation and its condition should be pointed out. A road section in fair condition from a visual appearance may be very adequate for a road with a low traffic volume. But the same road section may be structurally inadequate to carry a high volume of traffic or large percentage of trucks. A structurally inadequate road section will quickly fail and require constant maintenance if subjected to a high volume of traffic.

Shoulder Adequacy - 5 points maximum

Points were assigned based upon the observed ability of the shoulder to carry and store emergency stopped vehicles considering conditions such as roughness, surface type and softness in wet weather. A satisfactory shoulder is vital to the function of a highway by providing a place of refuge for auto emergencies allowing traffic flow to continue, a safety factor in case of possible accidents and, a psychological factor which permits drivers to maintain comfortable speeds with the inclination to drive further from the centerline thus increasing the effective width of the traveled way. A good shoulder also provides structural protection to the pavement.

Drainage - 8 points maximum

Rating points were based on both surface and subsurface drainage, the manner in which it is handled by ditches and drains, the amount and extent of ponding or flooding and the effect it has on both the roadway surface and foundation. Special interest was paid to locations with a history of water standing on or near the roadway.

Accidents - 10 points maximum

The history of and the number and type of accidents was compiled from office records. Rating points were assigned on the basis of two-thirds of the number of personal injury accidents added to one-third of the property damage accidents. The sum of these was divided by the road section length to determine the accident rate per mile. The computer then converted this accident rate into points.

Community Service - 15 points

The major function of a highway is to provide for the transportation of people and goods from one place to another. This function is important to the general welfare of the County and was therefore rated according to the following schedule:

1. Connects two major roads - 1 point
2. Main link - Population center - 3 points
3. Only link - Population center - 4 points
4. Recreational route - 2 points
5. Agricultural route - 2 points
6. Serves school - 1 point
7. School bus route - 1 point
8. Serves industry or cultural center - 1 point

All road sections start with 15 points for Community Service. Points are deducted from road sections which have any of the above attributes. It should be noted that a rating of 15 points (maximum) denotes the least amount of service and a rating of 0 points (minimum) signifies the greatest amount of usefulness to the public. It is highly unlikely that a rated road section would not have at least one of the above attributes; therefore, even a newly constructed road section would not achieve a priority rating of 100.

DATA CALCULATION

It is possible that there would be many road segments in the County which would have an identical adequacy rating even though their ADT or service might vary. It is generally conceded that in the programming of improvements, the more important roads must be

given higher priority than those roads of lesser importance. Logically, then, a priority study must weigh the adequacy against the importance and after considering all factors, arrive at an equitable sequence of improvements. This was achieved in the RATE study by adjusting the adequacy rating for ADT and for service.

The traffic volume, or ADT of a highway is probably the best single indicator of the service of that highway. The fact that an ADT is high indicates that many people are using a highway and therefore it should be considered before another road with a lower ADT. The method used in RATE is one used by many states and other agencies. This method compares the ADT of the road segment to the county-wide average ADT. The county-wide ADT used for the 1991 RATE was 989 vehicles per day.

Priority Rate Formula Priority ratings range from 0 to 100 points. A lower number indicates a higher priority for reconstruction.

Potential Project Listing To assist in selecting roads to be included in the Road Improvement Program (RIP), the individually evaluated short road segments were systematically grouped. Adjoining low-rated continuous road segments are combined to form one potential project group of at least one mile in length. An exception is that each project group must be separated from any other project group by at least one mile, otherwise, they are combined with the initial project group.

Each potential highway project is selected by using a moving weighted average rating of the road segments. This was accomplished by arbitrarily selecting a cut-off point where the maximum weighted RATE priority rating of 80 is reached for a moving summarization of road segments that do not exceed one mile in length. Also excluded from consideration were those segments with average daily traffic volumes of less than 1000 vehicles per day.

$$PR = TP + \frac{(TP^2 - 100TP)({}^L\text{ADT} - {}^L\text{CADT})}{50{}^L\text{CADT}}$$

PR = Priority Rate

TP = Total Points

${}^L\text{ADT}$ = logarithm of the ADT (County - wide ADT = 989 vehicles / day)

${}^L\text{CADT}$ = logarithm of the County - wide ADT

The purpose of this subset of projects is to identify those most deficient public roads that can be matched to the projected revenues for reconstruction over a five-year period.

MINIMUM COMPARATIVE STANDARDS

	Terrain	ADT Groups						
		0 to 99	100 to 399	400 to 999	1000 to 1999	2000 to 3999	4000 to 5999	6000 and over
R/W Width (ft)	ALL	50	60	60	60	60	80	106
Pavement Width (ft)	F, R	20	22	24	28	30	32	64
	M	18	20	24	28	30	32	64
Shoulder Width (ft)	F	4	8	8	16	16	16	16
	R	4	6	6	6	12	12	14
	M	0	0	2	6	8	8	8
Gradient (max %)	F	6	5	4	3	3	3	3
	R	10	8	7	5	5	5	4
	M	12	10	9	7	7	6	6
Horizontal Curve Radii (ft)	F	550	700	850	1150	1150	1150	1400
	R	300	425	550	850	850	850	1000
	M	100	200	300	550	550	550	700

F = flat, R = rolling, M = mountainous terrain

TABLE 1

APPENDIX B

PRIMARY ROAD FUNDING SOURCES

STATE

State Excise Taxes The largest single segment of county road funding, approximately \$13.2 million per year, derives from state fuel excise taxes. The state portion of the fuel excise tax is distributed for a variety of transportation purposes through a number of separate legislative actions (collectively, the Streets and Highways Code sections 2104, 2105, and 2106 revenues). These funds are paid directly to the county and may be used for any county maintained road purpose. These funds provide for primary maintenance and operational activities required to manage a road system, and are the basis of Fresno County's maintenance program.

AB 2928 / Proposition 42 The most recent increase in state transportation funding was AB 2928, which in 2000 redirected a portion of the State sales tax on motor vehicle fuel to transportation purposes, In addition to funding for the State Transportation Improvement Program (STIP), special TCRP projects, and Public Transportation Account (PTA), AB 2928 provided funds directly to cities and counties for their priority maintenance and rehabilitation needs, for a period of six years.

This funding source was almost immediately at risk, as the state entered into a serious budget crisis the following year, and suspended the State Department of Transportation's portion of AB 2928 funding. AB 2928 funding to local agencies was suspended in 2003/04 and continues this year. Fresno County's AB 2928 share is estimated to have been \$2.8 million this year, had it not been suspended.

Proposition 42, approved by voters in 2002, continued the transportation funding stream of AB 2928 permanently, beginning in 2008/09. Assuming that funds will be made available by the State by then, Fresno County expects its share to increase from approximately \$2.8 million per year to over \$8 million per year. The Department also expects that AB 2928 funds suspended in 2003/04 and 2004/05 will be restored to the county by or prior to 2008/09.

Local Transportation Fund (LTF) The Local Transportation Fund derives from a portion of the State general sales tax dedicated to transportation purposes by the Transportation Development Act (SB 325). The primary purpose of the LTF program is to fund transit services throughout the State. Certain rural Counties, where transit services may not be effectively provided throughout the County, may use the funds for streets and roads purposes once transit needs have been reasonably met. Fresno County currently receives approximately \$5.2 million annually in LTF and State Transit Assistance (STA) funds. Of this amount, approximately \$2.4 is claimed for transit purposes by transit providers and the RTPA, approximately \$2.7 million dollars is

available for Fresno County road purposes, and approximately \$100,000 for bicycle and pedestrian facilities

FEDERAL TRANSPORTATION FUNDING (TEA-21 & TEA-21 Reauthorization)

The 18.4 cent per gallon Federal fuels excise tax is reserved in the Highway Trust Fund (except for a portion that is dedicated to public transit and administered by the Federal Transit Administration) The Highway Trust Fund is administered by the Federal Highway Administration, and most of the funding is apportioned, through the States, for various programs through a multi-year transportation funding bill. The Transportation Equity Act for the Twenty First Century (TEA-21) expired last year but funding has continued through a series of continuing resolutions by the U.S. Congress, currently through September 30. A new authorization is expected this year, but may not take place until after the November election.

Regional Surface Transportation Program Fresno County's direct share of federal funding, referred to as "lifeline" funding, is approximately \$1.2 million per year, and has been unchanged since 1991. This money may be spent on roads classified as major collectors or higher, and supports about 10 miles of major route overlays per year.

Congestion Mitigation & Air Quality Program Since 2000, the County also receives about \$550,000 per year in Congestion Mitigation & Air Quality (CMAQ) "lifeline" funds, currently used primarily to surface or stabilize road shoulders to reduce particulate matter (PM-10) emissions from traffic-disturbed dirt shoulders.

Highway Bridge Replacement & Rehabilitation Program The HBRR program allows the County to fund 2 bridges per year from its Bridge Deficiency list

The combined value of these federal funds available on a reliable basis is about \$2.5 million per year. Compare this with the over \$13 million annually received from State gas excise tax sources, which is comparable at 18 cents/gallon to federal gas tax of 18.4 cents/gallon.

Other federal funding is available to the County through regional or statewide competitive programs. These programs include:

- Regional Surface Transportation Program (currently the primary source of reconstruction funding) about \$4 million per year available on a competitive basis to all agencies within Fresno County combined. Fresno County expects funding for one reconstruction project in the next three-year funding cycle (2004-2007).
- Congestion Mitigation & Air Quality program, about \$7.5 million per year available on a competitive basis to all agencies within Fresno County combined. Fresno County expects funding for two intersection improvement projects and one 3-mile segment of shoulder paving in the next three-year funding cycle.

- Hazard Elimination Safety Program
- Transportation Enhancement

There are also a number of minor programs that address specific areas, such as the Section 130 Railroad/Grade Crossing program. Fresno County has made use of this program to the extent that funds have been made available in recent years.

Federal Forest Reserve Funds Fresno County has since 1908 received an annual payment for road purposes from the U.S. Forest Service based on timber receipts from lumber harvested on federal lands within Fresno County. These revenues were intended to offset the impacts to counties of providing roads and other services for communities reliant on the public lands for their economic livelihood, and for which there was no offsetting property tax. Funds were for school and road purposes. As timber harvests declined on federal lands in the 1990s, payments to counties declined along with the economies of local communities that depended on forest products.

HR 2389 was passed in 1999 as a six-year demonstration program to restore funding to counties to historically high levels, and to support economies of impacted communities. Fresno County roads' share under HR 2389 is approximately \$1.15 million per year, up from a low of about \$460,000. HR 2389 was approved by Congress in 1999 when the federal budget had a substantial surplus. This program will cease in 2006 without further legislative action, and revenues will revert to the historic 25% of timber revenues. Timber harvest has continued to be very low in both the Sierra and Sequoia National Forests. Staff has been working with state and federal organizations to document the value this program has for forest Counties, in order to support a permanent extension of the program. There is no indication at this time whether there is continued Congressional support for continuing the program at its current level.

LOCAL FUNDS

Measure C Measure C, the local sales tax measure for transportation purposes, provides about \$3.6 million per year to Fresno County for its priority road and transportation purposes. In addition to the funds directly allocated to Fresno County by formula, Fresno County also is the lead agency for the design and construction of Academy Avenue, a County road funded with Measure C Regional funds. Measure C ends in 2007 after being in effect locally since 1987. See Appendix D for additional information on the Fresno County Transportation Authority and Measure C.

General Fund Support Other General Fund dollars are provided by the Fresno County Board of Supervisors to supplement the road program. Approximately \$5 million, the amount historically received by the County from the State for motor vehicle license in-lieu taxes, and vehicle code fines and forfeiture payments. In addition, the Board had historically credited the Road Fund with its share of the A-87 Countywide cost allocation. In 2000, these funds became the basis of the Maintenance of Effort required to continue to receive AB 2928 funds.

With the suspension of AB 2928 funds in 2004/05, the State also suspended the Maintenance of Effort requirement in years when AB 2928 funds were not made available. As a result, and also as a result of the state's fiscal crisis on the County budget, the Board of Supervisors redirected a portion of the funds that otherwise would have been required as the Maintenance of Effort obligation to other County purposes. The reduction to the road fund as a result is estimated to be \$2,436,583.

APPENDIX C

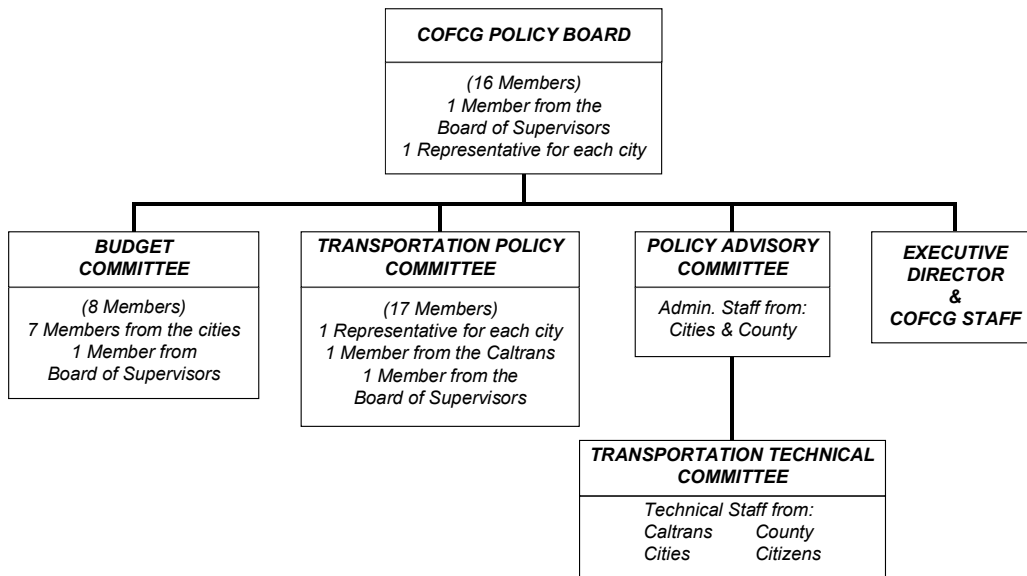
REGIONAL TRANSPORTATION PLANNING PROCESS

Title 23 of the United States Code requires the County to carry on a continuing, comprehensive, and cooperative transportation planning process involving state and local communities as a condition for qualification for Federal Aid. The Council of Fresno County Governments' (COFCG) has been designated by the State and Federal Highway Administration (FHWA) as the Regional Transportation Planning Agency, and Metropolitan Planning Organization to fulfil this role. The COFCG's major role is to foster intergovernmental coordination, undertake comprehensive regional planning with emphasis on transportation, provide for citizen involvement in the planning process, program regional transportation dollars from state and federal sources, and to provide technical services to its governments. COFCG coordinates transportation planning activities of Fresno County with the valley's other counties to satisfy requirements of the Clean Air Act and Clean Air Act Amendments, and of the Federal Transportation Equity Act for the Twenty-First Century (TEA-21).

REGIONAL TRANSPORTATION PLANNING AGENCY

Council of Fresno County Governments (C.O.F.C.G.)

ORGANIZATIONAL CHART



The County's participation in this organization necessarily involves the Department of Public Works and Planning. Staff members of the Department serve on the

Transportation Technical Committee (TTC) of this agency which deals with all matters pertaining to Transportation Planning, and works closely with COFCG and other city and state agencies on regional transportation planning issues.

Annually, the Department provides contract services to COFCG on projects related to transportation planning and studies.

As the designated Regional Transportation Planning Agency and Metropolitan Planning Organization, the COFCG prepares a 25-year Regional Transportation Plan, and programs and administers federal regional transportation funding in the Federal Transportation Improvement Program (FTIP) in accordance with the regional policies of the Regional Transportation Plan and applicable Air Quality Conformity and State Implementation Plans.

With passage of SB 45 in 1997, the COFCG was also charged with developing the Regional Highway Program for the State Transportation Improvement Program (STIP) Regional funds. Regional STIP funds make up 75% of state highway construction funds, and are apportioned to each county by formula for use on the state and other regional highway projects. Since 1986, Fresno County's Regional STIP funds have been used toward the Measure C Regional program.

Key activities and ongoing programs are as follows (a broader discussion of each program area may be found in the COFCG's recently-adopted 2004 - 2030 Regional Transportation Plan, and in the 2004/05 Overall Work Program, and are therefore not reproduced here):

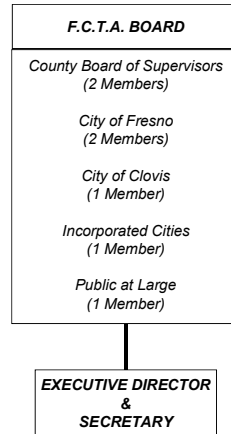
- Regional Transportation Plan (RTP)
- Measure "C" Regional Expenditure Plan
- Traffic Demand Model
- Transportation Air Quality Conformity Planning & Determinations
- Regional Traffic Monitoring Report
- Regional Transportation Improvement Program (RTIP)
- Federal Transportation Improvement Program (FTIP)
- Public and Social Service Transportation Planning
- Short Range Transit Plans (SRTP's) — Urban and Rural
- Transportation Development Act (TDA) Administration of Local Transportation and State Transit Assistance Funds

- Special Transportation and Corridor Studies, including the Regional Transit Coordination Study and the Public Transportation Infrastructure Study (currently underway)
- Fresno County Rideshare Program
- Fresno County Freeway Service Patrol Administrator
- Member Agency Technical Assistance
- Rail Planning / COFCG Rail Committee
- Regional Clearinghouse for Federal grant applications
- Regional Housing Plan Allocation for local agency Housing Elements

APPENDIX D

FRESNO COUNTY TRANSPORTATION AUTHORITY

ORGANIZATIONAL CHART



The Fresno County Transportation Authority consists of a seven-member Board of six elected officials and one public member appointed by the 6 other members:

In 1986 the voters of Fresno County approved Measure “C”, a 20-year 0.5% sales tax increase for improving highways and local transportation. The primary purpose of Measure “C” was to implement the highway system in Fresno County, and to provide discretionary transportation funds to local agencies for their own priority transportation needs. Measure “C” thereby established two funding programs:

Local Transportation Purposes Program No less than 25% of all revenues is allocated directly to each city and the County by a weighted population/mileage formula to spend as each agency determines appropriate on its transportation needs. The definition of Local Transportation Purposes is very broad to allow maximum flexibility by local agencies for local priorities. Implemented projects include construction and maintenance of streets, roads, and public transportation.

Regional Highways Program No more than 75% of revenues is to be used for highway capital improvements, with no more than 70% to be expended in the Fresno-Clovis metropolitan area, and no less than 30% to be expended in other areas of the County.

The enabling legislation (Division 15 of the California Public Utilities Code) established the Fresno County Transportation Authority as the authoritative body for administration of the funds, and designated the Council of Fresno County Governments (COFCG) as the agency responsible for preparing the Expenditure Plan for the regional highway portion of the revenues.

Measure C Expenditure Plan COFCG periodically updates the Measure C Expenditure Plan for the Measure C regional highways program, which utilizes both Measure C Regional and STIP funds to implement the regional highway program. Updating the expenditure plan is done in coordination with Caltrans, the California Transportation Commission (CTC) and Fresno County Transportation Authority (FCTA) to include the most current cost estimates, schedules, and funding assumptions for the Regional Highways Program.

Expiration of Measure C Measure C is scheduled to expire in 2006/07. If the Measure is not renewed in 2006, the Fresno County Transportation Authority will continue to function through the following two years to complete all Measure-related project funding and close-out activities. By 2006/07, the Measure is expected to have provided almost \$700 million for transportation improvements in Fresno County.

After a failed attempt to renew the Measure in 2002, preliminary discussions are taking place to define the appropriate process and program for a new transportation measure in 2006.

ESTIMATED LOCAL TRANSPORTATION PURPOSE REVENUES

1994-95

1994-95 Estimate from the Auditor-Controller \$7,525,000

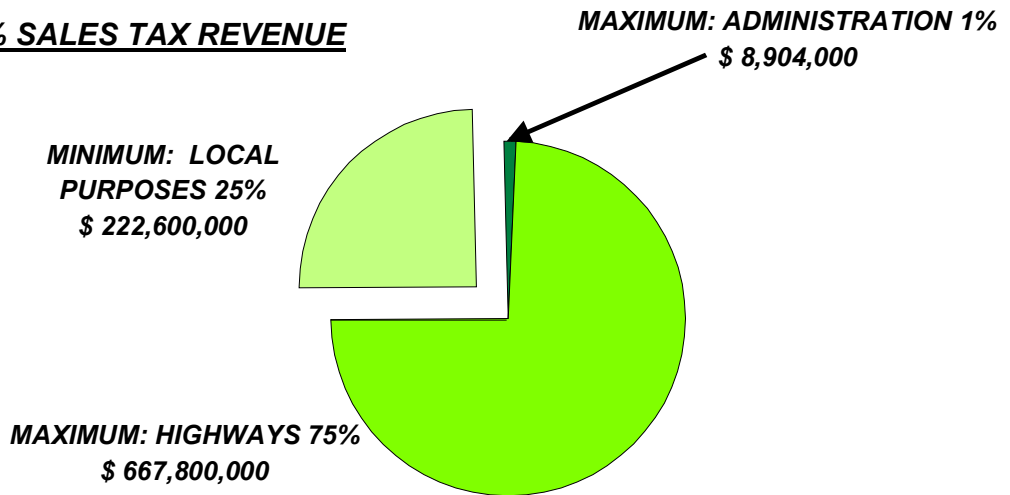
1994-95 APPORTIONMENT

	1994 Pop. 75%	1993 Miles 25%	Measure "C" Apportion Percentage	FUND ESTIMATE per 1994-95 APPORTIONMENT
CLOVIS	61,501	188.3	6.9495	522,950
FRESNO	402,122	1,369.6	46.0579	3,465,857
COALINGA	9,568	32.1	1.0937	82,301
FIREBAUGH	5,368	14.1	0.5961	44,857
FOWLER	3,829	30.1	0.5148	38,739
HURON	5,669	28.8	0.6917	52,050
KERMAN	6,518	20.4	0.7385	55,572
KINGSBURG	8,335	32.2	0.9717	73,120
MENDOTA	7,699	28.7	0.8929	67,191
ORANGE COVE	6,174	23.7	0.7191	54,112
PARLIER	9,126	22.0	1.0046	75,596
REEDLEY	18,885	59.3	2.1405	161,073
SAN JOAQUIN	18,563	13.4	1.9035	143,238
SANGER	2,781	63.0	0.5578	41,974
SELMA	17,307	61.5	1.9937	150,026
FRESNO COUNTY	171,739	3,606.1	33.1740	2,496,344
TOTAL	755,184	5,593.3	100.0000	7,525,000

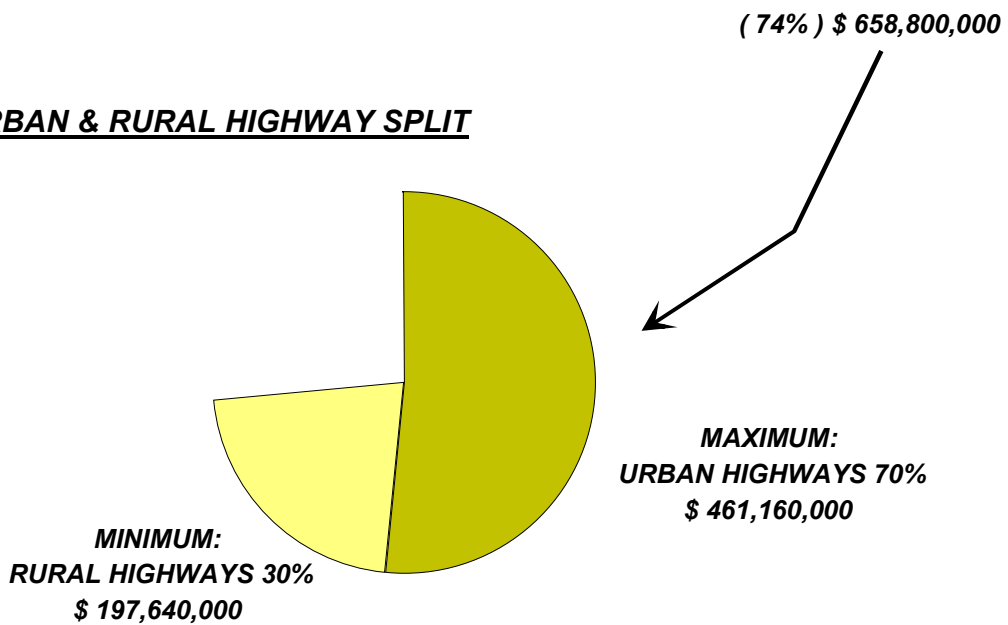
1/2 % SALES TAX REVENUE - FUNDING SPLITS

FOR 20 YEAR PERIOD

1/2% SALES TAX REVENUE



URBAN & RURAL HIGHWAY SPLIT



APPENDIX E

RETURN-TO-SOURCE GAS TAX CALCULATIONS

The first methodology computes the amount of gas tax generated by the County on its road system in rural areas by using data from the Pavement Management System (PMS). From this data, the amount of tax generated is \$15,196,868 annually. However, the County typically is entitled to receive approximately \$2.5 million from the Federal ISTEA program and the Highway Bridge and Bridge Rail Rehabilitation and Replacement (HBBRR) program, a return of approximately 16.4% or 3.03 cents of the 18.4 cents collected per gallon of gas tax revenue.

Similar results of a return of 16.1% and 15.6 are produced when using two other methods which estimate the rural road Vehicle Miles Traveled (VMT) distinct from the incorporated areas. One method proportions VMT based upon the population split and the other projects VMT based on the number of registered vehicles.

EXAMPLE 1

Calculations for Fresno County: Federal Excise Tax return to source

	Total daily VMT	= 4,136,372	(Data from PMS)
Transportation)	Average mpg	= 18.28	(California Department of
	Tax per gal	= 18.4 cents	

4,136,372 VMT x 0.184 \$/gal x365 days = \$15,196,867.81 Amount of tax generated
18.28 miles/gallon within Fresno /year

The Baseline Allocation to the county = **\$2,500,000.00** *

\$2,500,000.00 divided by \$15,196,868 = 16.4 per cent Return to Source

This represents an 16.4% return to the county or **3.03** cents of the **18.4** cents collected per gallon of gas tax revenue.

- Includes ISTEA Baseline funding = \$1,322,665, which is 110% of FAS base year, and HBBRR funding for two bridges per year. Additional Surface Transportation Program (STP) funds are distributed on competitive project basis.

EXAMPLE 2

The total population for the County of Fresno, including the incorporated areas, taken from the California Department of Transportation, Fresno County Economic Forecast, is 835,400 persons.

Calculations: Total DVMT* = 20,099,700 (rural and urban)
 Average mpg = 18.28
 Tax per gallon = 18.4 cents
 Total Population = 835,400 (Fresno county rural and urban)
 Unincorp. Pop. = 176,400 or 21% of the total population

The approximate allocation to Fresno county = **\$2,500,000.00**

\$2,500,000.00 divided by **\$15,507,556** = 16.1 per cent Return to Source

$$\frac{(20,099,700 \times 0.21) \text{ DVMT} \times 0.184 \text{ \$/gal} \times 365 \text{ days}}{18.28 \text{ miles per gallon}} = \$15,507,555 \text{ Amount of gas tax generated}$$

This represents a **16.1%** return to the county or **3.0** cents of the **18.4** cents collected per gallon of gas tax revenue.

Daily Vehicle Miles Traveled (DVMT) for the whole county, incorporated and unincorporated areas combined.

EXAMPLE 3

The total number of registered vehicles in Fresno county was obtained from the Department of Transportation, Fresno County Economic Forecast, 2004.

Total Vehicles Reg. in Fresno County = 630,458*

Vehicles in rural areas by percent pop.(21%) = 132,396

Average Miles per year per Vehicle (est.) = 12,000

132,396 x 12,000 Miles per year = 1,588,752,000 Total VMT

1,588,752,000 VMT x 0.184 \$/gal = \$15,991,814 Amount of Tax Generated
18.28 miles per gallon

The approximate allocation to the county = **\$2,500,000.00**

\$2,500,000.00 divided by \$15,991,814 = 15.6 per cent Return to Source

This represents a 15.6% return to the county or **2.9** cents of the **18.4** cents collected per gallon of gas tax revenue.

* Number of vehicles registered in Fresno County Per Caltrans' Fresno County Economic Forecast 2004

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